How does naming and shaming affect public support for compliance with international agreements? We investigated this question by conducting survey experiments about the Paris Agreement, which relies on social pressure for enforcement. Our experiments, administered to national samples in the United States, produced three sets of findings. First, shaming by foreign countries shifted domestic public opinion in favor of compliance, increasing the political incentive to honor the Paris Agreement. Second, the effects of shaming varied with the behavior of the target. Shaming was more effective against partial compliers than against targets that took no action or honored their obligations completely. Moreover, even partial compliers managed to reduce the effects of shaming through the strategic use of counter-rhetoric. Third, identity moderated responses to shaming. Shaming by allies was not significantly more effective than shaming by non-allies, but Democrats were more receptive to shaming than Republicans. Overall, our experiments expose both the power and the limits of shaming as a strategy for enforcing the Paris Agreement. At the same time, they advance our understanding of the most significant environmental problem facing the planet.

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Climate change is one of the most significant challenges facing the planet. Given worldwide reliance on fossil fuels, addressing the problem will require international cooperation. The 2015 Paris Climate Agreement represents the most recent attempt to promote international cooperation on climate change. Each country that joined the agreement publicly declared how it would contribute to the collective goal of mitigating climate change. The agreement did not stipulate legal or economic sanctions for members that failed to meet their promises, however, leading many scholars and policymakers to decry the lack of formal enforcement as the agreement’s Achilles heel.

Absent formal enforcement, what might incentivize countries to honor their climate commitments? Some have expressed hope that “naming and shaming” could sustain international cooperation. Naming and shaming occurs when some actors publicly denounce others for doing something wrong. Countries could apply this strategy to climate change by criticizing nations for violating their Paris Agreement pledges. Jacquet and Jamison characterized the potential to shame laggards as the “soft but significant power” of the Paris Agreement², and Falkner regarded shaming as the main tool countries could use to “exhort laggards to raise their game.”³

This article investigates how shaming by foreign countries might affect domestic political support for honoring the Paris Agreement. We know of no direct studies on this question, but research about the effect of shaming on respect for human rights suggests several possibilities. On the one hand, shaming could increase public support for compliance by convincing citizens that their nation’s policies are shameful and need to change.⁴ On the other hand, shaming could backfire by provoking a defiant reaction, in which citizens rally behind their own leaders and denounce foreign shamers.⁵ Finally, shaming could prove inconsequential if domestic audiences are insensitive to foreign opinion or believe the costs of quelling foreign criticism outweigh the benefits.⁶ Which of these three reactions we observe seems likely to depend on the behavior and identities of the shamers and the targets.

To shed light on these logical possibilities, we used experiments to study whether, and under what conditions, shaming might increase U.S. public support for compliance with the Paris Agreement. Our experiments focused on three key questions. First, could shaming shift domestic opinion in favor of compliance? Secondly, would the effects of shaming depend on the target’s behavior, including its level of compliance and use of counter-rhetoric? Finally, how might the identity of shamers and targets moderate responses to shaming?

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² Jacquet and Jamieson 2016, 643.
³ Falkner 2016, 1121.
⁴ For example, Ausderan 2014; Davis, Murdie, and Steinmetz 2012; Risse, Ropp, and Sikkink 1999, 2003.
⁵ For example, Bassan-Nygate 2021; Snyder 2020; Terman 2019, 2020.
⁶ For example, Hafner-Burton 2008; Hendrix and Wong 2013.
In our experiments, all participants considered a future scenario in which the U.S. joined the Paris Agreement and pledged to reduce carbon emissions by 25%. We randomized whether the U.S. subsequently complied with this commitment, whether foreign countries shamed the U.S., which countries expressed criticism, and how the U.S. responded. We then measured whether participants approved or disapproved of what the U.S. government did.

We conducted our experiments in the U.S. for several reasons. First, the U.S. is an established democracy in which public opinion matters for environmental policy. As such, it provides an appropriate context for studying how shaming could affect compliance via changes in public opinion. Second, the U.S. is of paramount importance in the global campaign against climate change. The U.S. emits more carbon than any other democracy, and U.S. carbon consumption per capita is among the highest in the world. Third, political events in the U.S. opened a unique research opportunity. In 2017 President Donald Trump announced that the U.S. would withdraw from the Paris Agreement. Trump’s decision made it possible to present a hypothetical future scenario in which the U.S. had just entered the Paris Agreement and was making decisions about compliance. It would, of course, be instructive to run experiments in other countries with different preferences and political institutions. Our focus on the U.S. offers unique insight into a critical case, while also providing a template for future experiments about the effects of shaming in other political systems.

Our experiments yielded three sets of findings. First, shaming by foreign countries shifted U.S. public opinion in favor of compliance, increasing the political incentive to honor the Paris Agreement.

Second, the effects of shaming depended on the target’s behavior: specifically, its level of compliance and use of rhetoric. In our experiments, shaming had little impact when the U.S. government made no attempt to comply or met its obligations in full. Shaming was, however, effective when the government took partial steps toward compliance but fell short of its Paris commitments. These findings suggest that shaming may be most potent when directed against “intermediate” policies that are prima facie neither shameful nor laudable.

Our experiments also revealed how rhetoric could reduce the effects of shaming. Shamed countries have a variety of counter-rhetorical options, ranging from contrition to defiance. We studied both ends of this counter-rhetorical spectrum. Although defiance did little to move domestic opinion, contrition substantially reduced—but failed to erase—the impact of shaming. In summary, our experiments demonstrated how states can adjust their compliance and rhetoric to reduce the domestic costs of shaming.

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7 Many studies have shown that “public opinion has a significant effect on policy choices in environmental and other policy domains.” Moreover, “although public opinion is far from being the only factor influencing a country’s acceptance and implementation of international environmental commitments, it is certainly an important one.” Bernauer and Gampfer 2015, 317.
Our third set of findings concerns the role of identity. Studies of human rights have found that shaming by allies is more effective than shaming by non-allies.\(^8\) We did not observe this pattern for climate change, suggesting that the distinction between allies and non-allies may be more relevant on some issues than on others. We also considered the identity of domestic audiences. In the U.S., Democrats and Republicans differ in their beliefs about climate change and support for emission controls. We therefore estimated reactions to shaming not only among the general public, but also for each partisan cluster that future administrations might want to court. Democrats and Independents were more receptive to shaming than Republicans, a finding with important political implications.

We provide, to our knowledge, the first experimental evidence about how shaming could affect domestic incentives to comply with international agreements.\(^9\) As such, this article complements a growing body of observational studies that use historical cases and cross-national statistical analyses to investigate the effects of shaming. At the same time, this article advances our understanding of the most significant environmental issue facing the planet. The current approach to climate cooperation, embodied in the Paris Agreement, relies on shaming. Our study exposes the power and limits of shaming as a strategy for inducing countries to honor their climate commitments.

**Could Shaming Contribute to Compliance?**

Agreements without formal enforcement may attract wider membership and prove more sustainable than agreements with harsh penalties.\(^10\) The Paris Agreement fits this mold; it achieved nearly universal participation because the key obligations were flexible and unenforceable, at least by traditional legal means. Whether the Paris Agreement succeeds will, therefore, depend on nontraditional enforcement strategies such as shaming.

Shaming could affect target governments at two levels. First, shaming could create *international* pressure to comply by imposing material and social costs. Materially, shaming could make it harder to attract international partners\(^11\) and trigger economic sanctions or military intervention against the target.\(^12\) Shaming could also inflict international social costs. Research has shown that governments value not only their material welfare, but also their status in the international community.\(^13\) By disparaging a country for bad behavior, shaming could undermine a country’s status or prestige on the world stage.\(^14\)

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\(^8\) Terman and Voeten 2018.
\(^9\) For experiments about other aspects of the Paris Agreement, see Barrett and Dannenburg 2016; Tingley and Tomz 2020.
\(^11\) Terman and Voeten 2018.
\(^12\) Murdie and Peksen 2014.
\(^13\) Kelley and Simmons 2015; Renshon 2017.
\(^14\) Finnemore and Sikkink 1998.
Second, shaming could generate *domestic* pressure to comply. It is well known that compliance with international agreements depends not only on international calculations about welfare and prestige, but also on the opinions of domestic audiences such as voters, interest groups, and elites. Foreign shaming could affect compliance by swaying these domestic groups. Indeed, studies of economic, social and military issues have shown that foreign commentary can “resonate in domestic politics, creating new demands on governments.”

Although both types of pressure are important, we focus on domestic pressure. To our knowledge, scholars have not tested how foreign shaming affects domestic support for compliance with international environmental agreements. They have, however, investigated a related issue: the impact of foreign shaming on domestic mobilization for human rights. A lively debate exists about whether foreign shaming increases, decreases, or has no effect on domestic demands for human rights. We review this literature and adapt it to develop expectations about why foreign shaming might succeed, backfire, or have no effect on adherence to climate commitments.

Some scholars argue that foreign shaming can mobilize domestic audiences to demand better respect for human rights. Shaming could spur domestic demands for several reasons. First, shaming could *inform* domestic audiences. By exposing violations of human rights, foreign shaming could help domestic audiences recognize the depth and breadth of misconduct by their own government. Second, foreign shaming could *persuade* domestic audiences. By framing behavior as shameful, foreign actors could convince domestic audiences that their government’s behavior is wrong—that it violates rights, treaty commitments, or international norms. Finally, foreign shaming could *sensitize* domestic audiences to the international costs of bad behavior, including the material costs of being labeled as unreliable and the social costs of being castigated as a pariah.

Other scholars argue that foreign shaming can backfire, provoking defiance instead of compliance. In a series of pioneering studies about human rights, Terman shows that domestic audiences often perceive foreign condemnation as a threat to their status. Political entrepreneurs can reinforce the perceived threat to status by characterizing foreign shaming as an attack on the nation’s prestige, identity, and sovereignty. According to Terman, this defensive reaction can change domestic politics, increasing the likelihood that that leaders “will not only

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15 For example, Dai 2005; Simmons 2009.
17 Kelley and Simmons 2019, 500; See also Hayes and Guardino 2011.
18 For example, Krain 2012; Murdie and Bhasin 2011; Murdie and Davis 2012.
19 Ausderan 2014; Davis, Murdie, and Steinmetz 2012.
20 Simmons 2009.
21 Studies have shown that domestic audiences are sensitive to their country’s international reputation. See, e.g., Tomz 2007b; Brutger and Kertzer 2018.
ignore outside pressure, but double down on violations as a response.”

Thus, shaming could backfire by pushing citizens to rally behind their government instead of clamoring for reform.

Shaming could also backfire by eroding the norms shamers hope to defend. A large literature in international relations examines how international norms emerge and evolve. This literature suggests two possibilities. On the one hand, shaming could reinforce norms by clarifying which behaviors are socially (un)acceptable. On the other hand, shaming could erode norms by suggesting that allegedly inappropriate behaviors are common or “normal.” As Carnegie and Carson contend, shaming countries for violating a commitment could ironically reduce the “perceived social opprobrium that results from a violation.”

Thus, shaming could backfire not only by triggering a defensive reaction, but also by throwing norms into doubt.

A final group of scholars argues that foreign shaming might not be consequential. Null effects could arise for many reasons. Domestic audiences might question the credibility and motives of foreign critics, counteract shaming by mounting a rebuttal, or conclude that the costs of foreign shaming seem minor, compared to the economic or cultural costs of reform.

In summary, scholars disagree about whether foreign shaming promotes, undermines, or has no effect on domestic demands for human rights. All three reactions are plausible, and each has some empirical support.

Given ongoing debates about the effects of shaming on human rights, one should not take for granted that shaming would work in other realms of international relations. Moreover, even if scholars agreed about the consequences of shaming for human rights, one should be cautious about extrapolating those findings to other issues. As others have emphasized, the effectiveness of international agreements—and strategies for enforcing them—vary with the nature of the problem, including the number of actors, the distribution of costs and benefits, and the severity of informational problems. How shaming affects domestic support for climate policies is ultimately an empirical question, which we address through experiments.

**Under What Conditions Might Shaming Be Effective?**

23 Terman 2020, 4-5.
24 See also Ayoub 2014 and Wachman 2001. The hypothesis that shaming could trigger defiance fits with psychological research showing that criticism can backfire when the target views the critic as an “outgroup.” See Hornsey and Imani 2004. We test this hypothesis by experimentally varying the identity of the shamer.
27 For example, Hafner-Burton 2008; Hendrix and Wong 2013.
28 Entman 2004, 55.
29 Bailey 2008.
Shaming may be more effective in some situations in than in others. In this section, we discuss why the effects of shaming should depend on the behavior of the target country—specifically, its level of compliance and use of counter-rhetoric. We also consider how the identity of shamers and targets could moderate responses to shaming.

**Compliance as a Moderator**

Domestic reactions to shaming should depend on how extensively the target government complied with its international commitments. For simplicity, we distinguish three levels of compliance with Paris Agreement pledges. Full compliance occurs when a country does exactly what it pledged; partial compliance involves making progress toward the stated goal but ultimately falling short; and noncompliance occurs when the country makes no progress toward its pledges.

Although shaming could be consequential in all three situations, we believe shaming stands the best chance of success against partial compliers. *Prima facie*, partial compliance is neither laudable nor shameful. On the one hand, citizens may credit a partially complying government with making progress and keeping some of its promises. On the other hand, citizens may question whether a partially complying government had done enough to solve the problem and meet its commitments.

This domestic ambivalence creates space for shaming to succeed. Research on election campaigns shows that campaign messages are more likely to persuade citizens who feel ambivalent or cross-pressured. We extend this logic to international shaming. Other factors equal, foreign shaming should be more likely to change the minds of citizens who feel ambivalent about their government’s behavior, than of citizens who are not weighing competing considerations. In short, foreigners may be able to sway an ambivalent public by emphasizing the negative and downplaying the positive sides of the ledger.

Shaming seems less likely to sway citizens when their country is complying fully. In such situations, domestic audiences may perceive shaming as unjustified, a perception the government could reinforce by highlighting its respect for promises. Búzás argues that countries can deflect normative criticism about human rights by noting that they are complying with international law, even when the letter of the law falls short of human rights norms. Similarly, governments could counter criticism on climate change by touting their full compliance with the Paris Agreement.

Finally, foreign shaming seems less likely to move domestic opinion when the government is making no effort, than when it has taken partial steps to honor its commitments. A large literature in international relations shows that citizens disapprove of noncompliance, even in the

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31 On ambivalence and persuadability, see Zaller 1992.
32 For example, Hillygus and Shields 2009.
33 Búzás 2018.
absence of shaming. To citizens who already viewed noncompliance as deplorable, shaming would restate the obvious.

To be clear, we are not claiming that shaming could only work against partial compliers. On the contrary, we recognize that shaming could move opinion even in cases of full compliance or complete noncompliance. Nevertheless, our logic implies that shaming should be more effective against partial compliers.

Our conjecture fits with recent work about public reactions to corporate environmentalism. Experiments have shown that corporations can earn the goodwill of citizens, interest groups, and politicians by taking partial steps to address environmental problems. Shaming by NGOs can, however, prevent corporations from reaping the full public relations benefits of their half-hearted actions. A similar logic could apply to governments: the public may be most persuadable, and shaming most effective, in cases of partial compliance.

Counter-rhetoric as a Moderator

As Adler-Nissen points out, “states do not just accept being stigmatized; they develop a variety of ways to cope with their sullied identity.” We consider one approach to stigma management: using counter-rhetoric to minimize or even reverse the effect of shaming.

Accused countries, like accused criminals, can employ a variety of rhetorical strategies, ranging from contrition to defiance. At the contrite end of the spectrum, countries could respond by acknowledging that foreign shamers are right, apologizing for falling short, and committing to do better. Expressing contrition could help the country earn forgiveness in the court of domestic opinion, just as apologizing for a crime could help an individual earn forgiveness in a court of law.

Scholars have begun to study contrition, expressed through apologies, in world affairs. We now have a good understanding of how apologies affect foreign countries and interstate relations, but we know less about how apologies affect domestic audiences. Would apologies lead domestic audiences to forgive the government for past transgressions, or would apologies backfire—especially among nationalist publics—by signaling that the contrite government had caved to foreign pressure?

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34 For example, Tomz 2007a; Trager and Vareck 2011; Kertzer and Brutger 2016; Simmons 2009; Wallace 2013.
36 For example, Lyon and Montgomery 2015; Chrun, Dolšak, and Prakash 2016.
39 Lind 2011.
40 Though see Lind 2009; Chu and Kitagawa 2020.
At the opposite end of the rhetorical spectrum, a government could fight shaming with defiance: denying that it had done anything wrong, arguing that that outsiders have no right to meddle in the country’s internal affairs, and characterizing foreign shaming as an attack. Countries have tried this strategy in the realm of human rights. China, for example, responded to foreign shaming about human rights by arguing that western states were trying to “usurp the issue of human rights to use it as a political lever against developing states, interfering in their internal affairs in a culturally hegemonic fashion”.\textsuperscript{41} Defiant rhetoric could lead citizens to dismiss foreign criticism and/or rally behind their own government.\textsuperscript{42}

In general, we expect counter-rhetoric to attenuate the effects of foreign shaming, but the degree of attenuation is an open question. In the literature on political persuasion, there is no consensus about how citizens respond to competing arguments. Some studies find that competing voices offset each other, yielding no net change in public opinion. Other studies find that even in competitive political environments, some arguments carry more weight than others, causing public opinion to change.\textsuperscript{43} Given this controversy, we designed experiments to estimate whether and to what degree contrition and defiance would moderate the effects of shaming.

\textit{Identities as Moderators}

Finally, identities could moderate the effects of shaming. Previous work has emphasized the identities of the shamers. Social psychologists have found, for example, that people are more receptive to shaming by members of their ingroup than by members of an outgroup.\textsuperscript{44} Likewise, international relations researchers have shown that countries respond more favorably to human rights shaming by allies than by adversaries.\textsuperscript{45} Applying these insights to the Paris Agreement, one might expect shaming by allies to be more effective than shaming by non-allies.

The effects of shaming could also vary with the identities of domestic audiences. Consider party affiliation, the most important political identity in the U.S. Belief in anthropogenic climate change, support for emissions control policies, and support for the Paris Agreement tend to be stronger among Democrats than among Republicans. Shaming could, therefore, have weaker effects on Republicans, who might question the credibility and motives of foreign critics or conclude that the costs of complying with Paris outweigh the costs of shaming. Alternatively, shaming could have weaker effects on Democrats, to the extent that foreign shamers articulate pro-compliance opinions Democrats would have reached on their own.

In the next section we describe a set of experiments, which we designed to estimate the effects of shaming, and to study how the impact of shaming might depend on the compliance and rhetoric of the target, as well as the identities of foreign shamers and domestic audiences.

\textsuperscript{41} Wachman 2001, 268-69.
\textsuperscript{42} Terman 2020.
\textsuperscript{43} Druckman and Lupia 2016.
\textsuperscript{44} Hornsey and Imani 2004.
\textsuperscript{45} Terman and Voeten 2018; Terman 2019, 2020.
An Experimental Approach

Three considerations led us to study shaming experimentally. First, experiments provided a credible way to isolate the causal effect of shaming. If shaming in international relations occurred randomly, one could confidently use historical data to estimate the effect of shaming on domestic audiences. In reality, though, shaming is a “selective and political” decision. When choosing whether to shame, governments and NGOs weigh many factors, including the behavior, political institutions, and geopolitical relations of the potential target. These complications make it difficult, with historical data, to separate the effects of shaming from the effects of background conditions that contributed to the shaming decision. We overcame this inferential challenge by experimentally manipulating whether foreign countries shamed or not.

Second, experiments provided a way to isolate the effects of moderator variables. We hypothesized that the effects of shaming would depend on the target’s level of compliance and use of counter-rhetoric. Both moderators are endogenous, depending not only on political factors in the target state, but also on expectations about shaming itself. This endogeneity makes it difficult, with historical data, to draw firm conclusions about interaction effects. We also hypothesized that the effects of shaming would depend on the identities of foreign shamers, another endogenous variable in historical settings. We overcame these limitations by randomizing moderator variables, including the compliance and rhetoric of the target, and the identity of foreign shamers.

Finally, experiments helped address the unfortunate paucity of historical data. The Paris Agreement is a new development, and the first global stocktake—designed to assess progress and inform new pledges—will not take place until 2023. Without experiments, researchers would need to wait for years information to emerge about compliance, shaming, counter-rhetoric, and the reactions of domestic audiences. Our experiments offered a glimpse into the future, a way to anticipate events that have not yet taken place.

In summary, we designed our experiments to offer unique insight about public reactions to shaming. We acknowledge, however, that all methods, including experiments, have limitations. Our experiments exposed respondents to news about shaming by foreign countries. In practice, would citizens know whether foreign countries were being critical or not? On the one hand, previous research has found “impressive evidence” of the prevalence of foreign voices in American news. On the other hand, some people—especially those with little interest in politics and public affairs—might not follow the news or take note of foreign criticism. Our experiments reveal the potential effects of shaming, i.e., how citizens would react if they learned

46 Terman and Voeten 2018, 6; Terman and Byun 2020.
48 Ausderan 2014.
49 For example, Hayes and Guardino 2011, 832.
about foreign shaming. The actual effects of shaming are likely to vary from case to case, depending on public awareness of foreign commentary.\textsuperscript{50}

We conducted four experiments, which we embedded in public opinion surveys of adults in the United States. The first three were fielded in September-October 2018, and the fourth in early January 2021. Respondents were recruited by Lucid, which used quota sampling to approximate the U.S. adult population with respect to gender, age, race/ethnicity, and region. We weighted the sample to match the distribution of party affiliation in the U.S. population around the time of our study (32.7% Democrat, 41.8% Independent, 25.5% Republican).\textsuperscript{51}

In all experiments, respondents considered a hypothetical future in which the U.S. had joined the Paris Agreement and pledged to reduce emissions. We designed Experiment 1 to estimate the effects of shaming and assess the importance of two moderators: the target’s level of compliance, and the partisan identity of domestic audiences. The other experiments assessed the remaining moderators: the target’s use of counter-rhetoric (Experiments 2 and 3) and the identity of the shamers (Experiment 4).

\textbf{Experiment 1}

Our first experiment (N=2,884) contained two randomized elements: the level of compliance the U.S. achieved after joining the Paris Agreement, and whether foreign countries shamed the U.S. Experiment 1 served as a template for three follow-up experiments, described later in the article.\textsuperscript{52}

In Experiment 1, all participants read the following preamble:

The Paris Agreement is an international agreement about climate change. Every country that joins the agreement promises to contribute to the worldwide goal of fighting climate change, by developing and carrying out a plan to reduce its emissions of carbon dioxide as quickly as possible.

In the future, the U.S. government must decide whether to join the Paris Agreement, and whether to pass new laws to reduce U.S. emissions of carbon dioxide. On the following screens, we will describe one approach the U.S. government could take in the future, and ask whether you approve or disapprove.

\textsuperscript{50} A separate and important consideration is whether public opinion about climate change can put pressure on elected officials. Egan and Mullin (2017) suggest modest influence, whereas others emphasize the increasing salience of climate change to U.S. voters (Leiserowitz et al. 2020).

\textsuperscript{51} For details about the sample, its representativeness, and balance across the experimental conditions, see the online appendix.

\textsuperscript{52} For the text of the experiments, see the online appendix. We included comprehension questions to make sure participants understood the scenario they received. When analyzing the data, we restricted the sample to respondents who correctly answered at least 80% of the comprehension questions, though the online appendix shows that our conclusions were similar when we included all respondents.
All participants then considered a scenario in which a future U.S. administration joined the Paris Agreement.

In 2021, the U.S. government announced that it would join the Paris Agreement. When it officially joined later that year, the U.S. said: “As a member of the Paris Agreement, we pledge to reduce U.S. emissions of carbon dioxide by 25%.”

Having established this context, we randomized what steps, if any, the U.S. government took to comply. Some participants read that the U.S. did not pass any new laws to reduce carbon emissions. Others read that the U.S. passed laws to reduce emissions by either 5% or 25%. We randomized the costs (in square brackets) of these emission control policies, but because costs were not our focus in this article, we averaged over costs when analyzing the data. The three conditions appear below.

**No Action**: Over the next few years, the government did not pass any new laws to reduce carbon dioxide emissions. Because it did not pass any new laws, the government did not affect U.S. energy prices or U.S. carbon emissions.

**Cut 5%**: Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [4 or 10]% and reduce U.S. carbon emissions by 5%.

**Cut 25%**: Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [4 or 10]% and reduce U.S. carbon emissions by 25%.

These policies differed not only in their effects on carbon emissions, but also in their compliance with the Paris Agreement. Cut 25% amounted to full compliance, cut 5% represented partial compliance, and no action amounted to noncompliance.

We independently randomized whether foreign countries shamed the U.S. Half the participants saw no mention of foreign shaming; the other half received a passage in which foreign countries shamed. The content of the shaming varied, depending on what the U.S. had done.

**Shaming if No Action**: Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing nothing to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.

**Shaming if Cut 5%**: Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.

**Shaming if Cut 25%**: Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions.
Having presented the scenario, we asked: “Taking into account all the decisions the U.S. government made in the passage you read, would you approve or disapprove of what the U.S. government did overall?” The response options were approve strongly, approve somewhat, neither approve nor disapprove, disapprove somewhat, or disapprove strongly.\(^\text{53}\) In this article we report a natural and easily interpretable statistic, the percentage of respondents who approved, but our conclusions held when we analyzed the full five-point scale, as well.\(^\text{54}\)

**Main Effects in Experiment 1**

Having described Experiment 1, we now report how participants responded. Figure 1 displays the percentage of Americans who approved of how the U.S. government behaved. The solid dots represent approval without shaming; the hollow dots represent approval with shaming; and the lines bisecting the dots are 95% confidence intervals.

![Figure 1: Public Approval of U.S. Policy without Shaming (Solid Dots) and with Shaming (Hollow Dots)](image)

In vignettes without shaming (the solid dots), three findings emerged. First, very few Americans (only 17%) approved of inaction, implying little support for noncompliance even in the absence of shaming. Second, a large majority (64%) approved when the government slashed emissions by 5%. Compared to doing nothing, this modest action increased the government’s popularity by \(64 - 17 = 47\) percentage points. Finally, when the government quintupled its cuts from 5% to 25%, thereby living up to its Paris pledge, approval rose by only \(73 - 64 = 9\) percentage points. We conclude that, absent shaming, the government could substantially increase its public image by passing modest legislation, but additional environmental effort—including full compliance with international commitments—would not bring commensurate gains in popularity.

We now consider how shaming affected these conclusions. Comparing the hollow versus solid dots, we see that shaming proved inconsequential when the U.S. took no action.

\(^{53}\) If we had measured approval of specific politicians, rather than policies, the effects of shaming might have been smaller, since many factors beyond climate policy affect approval of politicians.

\(^{54}\) See the online appendix.
(noncompliance), and when it cut emissions by 25% (full compliance). In contrast, shaming substantially changed American perceptions of partial compliance. When the government cut emissions by 5%, shaming reduced public approval from 64% to 42%, depriving the government of nearly half of the credit it would have reaped for taking modest action without shaming.

These patterns not only document the power of shaming, but also speak to ongoing research about unilateralism versus reciprocity in climate policy. Studies have found strong public support for doing something about climate change, regardless of how other countries behave. We add, however, that sans shaming, most Americans would approve of modest efforts, such as reducing emissions by only 5%. Foreign pressure—applied via shaming—may help galvanize public support for bolder action on climate change.

**Incentives to Comply in Experiment 1**

How might shaming affect the government’s incentive to comply with its Paris commitments? To find out, we used data from Experiment 1 to estimate how approval would change if the government complied fully (cut 25%) instead of partially (cut 5%), and how foreign shaming would affect the size of the gain. We use “incentive” as shorthand for the estimated gain in public approval. Although many factors in addition to public opinion affect the government’s incentive to comply, our conclusions should hold as long as the incentive to adopt a policy is increasing in the domestic popularity a government could gain by adopting the policy.

When foreign countries abstained from shaming (solid dots in Figure 1), 64% approved when the government complied partially, versus 73% when it complied fully. Thus, without shaming, the government could gain 9 approval points by increasing its compliance from partial to full. Suppose instead that foreign countries shamed strategically, by criticizing the U.S. if and only if it failed to honor its Paris pledge. In that case, the government could gain around 30 approval points by complying fully with the Paris Agreement. These values, displayed in Figure 2, imply that shaming can incentivize governments to honor their international commitments. In our experiments, the political incentive to comply fully instead of partially was three times stronger when foreign countries shamed than when they did not.

55 Bechtel and Scheve 2013; Tingley and Tomz 2014; Bernauer and Gampfer 2015; Beiser-McGrath and Bernauer 2019.
**Effects in Experiment 1, By the Partisan Identity of Domestic Audiences**

Using data from experiment 1, we also tested whether the effects of shaming varied with the partisan identity of domestic audiences. Splitting the sample by party is informative not only to test for moderation, but also because politicians might pander to their own party, rather than the electorate as a whole.

Figure 3, which splits the sample by party ID, supports several conclusions. First, consistent with previous research, support for climate action was strongest among Democrats and weakest among Republicans, with Independents in between. Second, in all three groups, shaming reduced approval of partial compliance, while having little effect when the government took no action or cut by 25%. The sole exception was Democrats, whose impressions of cut 25% soured when foreigners criticized the U.S. for not doing enough.

Third, for each level of government action, Democrats were more receptive shaming than Republicans. This is most evident in the middle row, where shaming reduced approval of cut 5% by 24 points among Democrats, versus only 15 points among Republicans, and the bottom row, where shaming reduced approval of cut 25% by 9 points among Democrats, while increasing approval by 5 points among Republicans.

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56 In scenarios involving partial compliance, the effects on all three partisan groups were substantively and statistically significant. For a plot of the treatment effects, see the online appendix.
Although reactions to shaming varied by party, our experiments suggest that shaming would increase the incentive to comply, regardless of which electoral segment the government was courting. When pandering to a Democratic audience, the incentive to honor U.S. commitments fully, rather than partially, would be $88 - 80 = 8$ points in the absence of shaming, $79 - 56 = 23$ points with blanket shaming, and $88 - 56 = 32$ points with selective shaming. The analogous incentives would be $11$, $24$, and $35$ points among Independents, and $7$, $27$, and $22$ points among Republicans. We conclude that foreign shaming can alter domestic political incentives not only on average, but also for governments with strong partisan biases.

**Experiments 2 and 3**

In Experiments 2 and 3, we tested whether governments could use counter-rhetoric to negate the effects of shaming. Experiment 2 focused on one end of the counter-rhetorical spectrum: contrition. Participants read: “The U.S. government responded by saying that other countries were right. It apologized for not doing more and said it would work to reduce U.S. emissions in the future.” We administered this condition to 1,160 participants in October 2018.

By combining the data from Experiment 2 with information from Experiment 1, we estimated the effects of shaming with and without contrition. Figure 4 shows how shaming affected approval when the U.S. did not respond (solid dots), and when it responded with contrition (hollow dots). All treatment effects in Figure 4 were estimated with respect to a baseline in which foreign countries abstained from shaming.

![Figure 4: Effects of Shaming without a Rebuttal (Solid Dots) and with Contrition (Hollow Dots)](image)

Figure 4 shows that contrition was somewhat effective in counteracting shaming. When the government cut emissions by 5%, shaming alone caused approval to fall by 22 percentage points, but contrition reduced the effect to only 8 points. Thus, a partially compliant

---

57 Here, too, reactions varied by political party. Contrition counteracted shaming among all three partisan subgroups but was most effective among Independents and Republicans. See the online appendix.
government could minimize the political consequences of shaming by acknowledging that foreign critiques were valid and promising to do more in the future.

Although expressing contrition could counteract shaming in the short run, it is not clear how long the public would accept this excuse. If, as time passed, the U.S. failed to take additional action and bring itself into full compliance, would shamers regain the rhetorical advantage? Future research could examine the long-run sustainability of expressing contrition.

Experiment 3 focused on the other end of the counter-rhetorical spectrum: defiance. Participants read: “The U.S. government responded by saying that other countries had no right to meddle in our affairs. It said other countries were trying to hurt or control the United States.” We administered this condition to 1,214 participants in October 2018. By combining these data with measures from Experiment 1, we estimated the effects of shaming with and without a defiant rebuttal. Figure 5 shows that defiance was far less effective than contrition at counteracting the effects of shaming.58

Experiment 4

In Experiment 4, we varied the identity of shamers while holding U.S. action constant at cut 5%. There were five experimental conditions: a control condition with no shaming, and four treatment conditions involving different sets of shamers. In the many countries condition, we repeated the language from earlier experiments, in which “many countries” said the U.S. should be ashamed. In the allies only condition, “many U.S. allies” said the U.S. should be ashamed but “there were no comments from countries that were not U.S. allies.” In the non-allies only condition, “many countries that were not U.S. allies” said the U.S. should be ashamed, but “there were no comments from U.S. allies.” Finally, in the allies and non-allies condition, “many

58 Although defiance was not effective on average, reactions varied by political party. Defiant rhetoric reduced the effect of shaming on Independents and Republicans, while backfiring among Democrats. See the online appendix.
U.S. allies and many countries that were not U.S. allies” said the U.S. should be ashamed. We fielded the experiment to 2,878 subjects in early January 2021, before President-elect Joseph Biden took office and rejoined the Paris Agreement.

As Figure 6 shows, we did not find systematic differences by who shamed. Instead, the treatment effects (approval with shaming, minus approval without shaming) were similar across these new conditions.59 We conclude that the traditional distinction between allies and non-allies, though important for human rights, may not be as relevant to shaming on climate change.

**Figure 6: Effects of Shaming, by Identity of the Shamers**

![Graph showing effects of shaming by identity of the shamers](image)

### Conclusion

We used experiments to investigate how naming and shaming could affect domestic support for compliance with the Paris Agreement. We found that shaming by foreign countries shifted domestic public opinion in favor of compliance, increasing the political incentive to honor the agreement. The effects of shaming depended on the behavior of the target, however. Shaming was more effective against partial compliers than against targets that took no action or honored their obligations completely. Moreover, even partial compliers could use counter-rhetoric such as contrition to reduce the effects of shaming. Finally, the identities of actors played a moderating role. Although shaming by allies was not significantly more effective than shaming by non-allies, Democrats were more receptive to shaming than Republicans. Overall, our experiments exposed both the power and the limits of shaming as a strategy for enforcing the Paris Agreement.

Our findings speak to debates about not only the Paris Agreement, but also other environmental pacts. Most international environmental agreements lack formal enforcement mechanisms.60 Could informal enforcement strategies such as shaming could compensate for the absence of legal and economic penalties? By showing how shaming could help enforce the Paris

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59 The effect of shaming by “many countries” was 19 points in Experiment 4, similar to the 22-point effect we found when we fielded Experiment 1 two years earlier.

Agreement, our experiments suggest that shaming could contribute to compliance with other environmental accords, as well.

Beyond its substantive findings, this article offers a methodological template for future experiments about shaming. One could, for example, design new experiments to clarify how the identities of shamers would affect the enforcement of climate agreements. In our studies, the traditional distinction between allies and non-allies proved surprisingly inconsequential, but other aspects of identity could have more explanatory power. The credibility of shaming could depend, for example, on whether shamers had honored their own international climate commitments, and whether their efforts to curtail carbon emissions were ambitious or trivial. Shaming might also be more effective among economic peers than among countries at disparate levels of economic development. Follow-up experiments could explore these possibilities to gain a better understanding of how identity matters.

Future experiments could also address various concerns about external validity. We asked respondents to consider a hypothetical scenario and omitted details some people might know if they were living through the experience. It is not obvious whether a more concrete and detailed experimental design would have generated different findings, however. Indeed, new research on survey experiments finds few differences in how participants respond to hypothetical versus real scenarios, and to abstract versus concrete vignettes. Nevertheless, one could assess the robustness of our conclusions by adding details to subsequent experiments.

Researchers could, for instance, provide a more elaborate chronology of events. Our vignette summarized how the U.S. government behaved “over the next few years,” without offering a detailed timeline. Future work could specify how quickly the U.S. acted and how the government’s actions affected the trajectory of energy prices and carbon emissions. Follow-up work could also vary when foreign shaming occurred, since domestic reactions might depend on the timing of foreign criticism. Finally, by presenting the narrative in stages, researchers could measure approval at different junctures, opening opportunities to study the evolution of domestic opinion.

Researchers could also embellish our account of the rhetorical battle between shamers and targets. Future experiments could, for instance, present the full transcripts of remarks by shamers and indicate where and how often they registered complaints. Next-generation experiments could also include thicker descriptions of counter-rhetoric and a larger number of rebuttals, articulated individually or conjointly. Nations often cite adverse economic shocks as reasons for defaulting on trade and financial commitments. Countries that default on their Paris commitments could offer similar excuses to supplement or replace the counter-rhetoric we studied.

61 Brutger, Kertzer, Renshon, Tingley, and Weiss 2021.
62 We thank the editors and anonymous reviewers for these suggestions.
63 Bechtel, Scheve, and van Lieshout 2020.
64 Rosendorff and Milner 2001; Tomz 2007b.
Finally, researchers could expand our vignettes to cover a wider range of domestic actors and policy instruments. In the U.S., all levels of government—federal state, and local—contribute to climate policy through a complex mix of laws and regulations. We simplified this reality by focusing on whether the U.S. government had passed new laws to reduce carbon emissions. Future experiments could provide a more comprehensive discussion of domestic actors and policies. One could then measure public approval not only of government policies, but also of the politicians and bureaucrats who were most influential in shaping the outcomes.

By extending our experiments in these ways, researchers could shed additional light on the politics of shaming and climate change. We caution, however, that too much complexity could make the vignettes inaccessible and reduce, rather than increase, external validity. Incorporating too many details could create an artificial situation in which participants know far more about the experimental scenario than ordinary citizens would know about the real world. When designing the experiments in this article, we sought a middle ground: providing enough detail for participants to process the scenario, without overwhelming participants or relaying more information than a typical American might know about climate politics.

We conducted our experiments in the United States, the world’s most powerful democracy and the largest democratic contributor to climate change. It is natural to wonder whether the effects of shaming would be different in other countries. Would shaming be more effective in democracies such as France, Germany, Japan, and the UK, where there is greater consensus on the need for climate action and less polarization along partisan lines? Could shaming be effective in urging autocratic countries such as China to honor their Paris commitments? Scholars could pursue these questions by administering our experiments in other political contexts.

Finally, our experiments focused on climate change, an issue of undisputed importance for the future of the planet. How might shaming affect opinions about other international issues? When theorizing about reactions to shaming, we drew inspiration from the human rights literature. We acknowledge, however, that shaming may have different consequences for climate change than for other topics. It would, therefore, be instructive to theorize about how the effects of shaming might vary across issues. Such a theory might emphasize differences in underlying problem types and whether shamers are clamoring for reforms that would threaten the target’s sovereignty. A general theory of shaming’s effectiveness across issues is beyond the scope of this research note. We expect, however, that future theoretical innovations and randomized experiments will complement observational studies to provide a fuller understanding of the role of shaming in international relations.

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65 Mitchell 2006; Koremenos, Lipson and Snidal 2001
66 Terman and Byun 2020.
References


APPENDIX TO

“THE EFFECTS OF NAMING AND SHAMING ON PUBLIC SUPPORT FOR COMPLIANCE WITH INTERNATIONAL AGREEMENTS: AN EXPERIMENTAL ANALYSIS OF THE PARIS AGREEMENT”

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I. QUESTIONNAIRE

The questionnaire had three parts. First, respondents answered background questions about their political party affiliation, their beliefs about whether humans were causing climate change, and their preferences about new laws to limit the use of fossil fuels. Second, respondents participated in one of the randomized experiments described in the article. Finally, respondents answered basic demographic questions.

A. BACKGROUND QUESTIONS

Generally speaking, do you think of yourself as a…?

- Republican
- Democrat
- Independent
- Another party, please specify
- No preference

If Republican:
Would you call yourself a …
- Strong Republican
- Not very strong Republican

If Democrat:
Would you call yourself a …
- Strong Democrat
- Not very strong Democrat

If Neither Republican or Democrat:
Do you think of yourself as closer to the …
- Republican Party
- Democratic Party
- Neither party

There is much discussion about whether humans are causing climate change. Which of the following statements comes closest to your own opinion?

- Humans are causing climate change
- Humans are not causing climate change
- Don't know

In your opinion, should the U.S. government pass new laws that would require Americans to reduce their use of fossil fuels, including coal, oil, and gas?

- Yes
- No
B. RANDOMIZATION FOR EXPERIMENT 1

Randomly assign each respondent to ENERGY = 4 or ENERGY = 10. The value of this variable is piped into some conditions, below.

Randomly assign each respondent to one of the following sets of experimental conditions:

| ACTION = NONE |
| ACTION = NONE |
| ACTION = CUT 5% |

ACTION_TEXT = Over the next few years, the government did not pass any new laws to reduce carbon dioxide emissions. Because it did not pass any new laws, the government did not affect U.S. energy prices or U.S. carbon emissions.

RHETORIC = NONE

- or -

ACTION = NONE

ACTION_TEXT = Over the next few years, the government did not pass any new laws to reduce carbon dioxide emissions. Because it did not pass any new laws, the government did not affect U.S. energy prices or U.S. carbon emissions.

RHETORIC = SHAMING

RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing nothing to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.

- or -

ACTION = CUT 5%

ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.

RHETORIC = NONE

- or -
| ACTION = CUT 5% | ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%. |
| RHETORIC = SHAMING | RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement. |

- or -

| ACTION = CUT 25% | ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 25%. |
| RHETORIC = NONE | |

- or -

| ACTION = CUT 25% | ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 25%. |
| RHETORIC = SHAMING | RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions. |
C. RANDOMIZATION FOR EXPERIMENT 2

Randomly assign each respondent to ENERGY = 4 or ENERGY = 10. The value of this variable is used in some conditions, below.

Randomly assign each respondent to one of the following sets of experimental conditions:

- ACTION = NONE
  ACTION_TEXT = Over the next few years, the government did not pass any new laws to reduce carbon dioxide emissions. Because it did not pass any new laws, the government did not affect U.S. energy prices or U.S. carbon emissions.

- RHETORIC = SHAMING
  RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing nothing to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.

- REBUTTAL = CONTRITION
  REBUTTAL_TEXT = The U.S. government responded by saying that other countries were right. It apologized for not doing more and said it would work to reduce U.S. emissions in the future.

- or -

- ACTION = CUT 5%
  ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.

- RHETORIC = SHAMING
  RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.

- REBUTTAL = CONTRITION
  REBUTTAL_TEXT = The U.S. government responded by saying that other countries were right. It apologized for not doing more and said it would work to reduce U.S. emissions in the future.

- or -
ACTION = CUT 25%

ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by \[\text{ENERGY}\] and reduce U.S. carbon emissions by 25%.

RHETORIC = SHAMING

RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions.

REBUTTAL = CONTRITION

REBUTTAL_TEXT = The U.S. government responded by saying that other countries were right. It apologized for not doing more and said it would work to reduce U.S. emissions in the future.
D. RANDOMIZATION FOR EXPERIMENT 3

Randomly assign each respondent to ENERGY = 4 or ENERGY = 10. The value of this variable is used in some conditions, below.

Randomly assign each respondent to one of the following sets of experimental conditions:

ACTION = NONE
ACTION_TEXT = Over the next few years, the government did not pass any new laws to reduce carbon dioxide emissions. Because it did not pass any new laws, the government did not affect U.S. energy prices or U.S. carbon emissions.

RHETORIC = SHAMING
RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing nothing to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.

REBUTTAL = DEFIANCE
REBUTTAL_TEXT = The U.S. government responded by saying that other countries had no right to meddle in our affairs. It said other countries were trying to hurt or control the United States.

- or -

ACTION = CUT 5%
ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.

RHETORIC = SHAMING
RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.

REBUTTAL = DEFIANCE
REBUTTAL_TEXT = The U.S. government responded by saying that other countries had no right to meddle in our affairs. It said other countries were trying to hurt or control the United States.

- or -
ACTION = CUT 25%

ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 25%.

RHETORIC = SHAMING

RHETORIC_TEXT = Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions.

REBUTTAL = DEFIANCE

REBUTTAL_TEXT = The U.S. government responded by saying that other countries had no right to meddle in our affairs. It said other countries were trying to hurt or control the United States.
E. RANDOMIZATION FOR EXPERIMENT 4

Randomly assign each respondent to ENERGY = 4 or ENERGY = 10. The value of this variable is piped into some conditions, below.

Randomly assign each respondent to one of the following sets of experimental conditions:

<table>
<thead>
<tr>
<th>ACTION</th>
<th>ACTION_TEXT</th>
<th>RHETORIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUT 5%</td>
<td>Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.</td>
<td>NONE</td>
</tr>
<tr>
<td>- or -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUT 5%</td>
<td>Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.</td>
<td>SHAMING</td>
</tr>
<tr>
<td>SHAMER</td>
<td>many countries</td>
<td></td>
</tr>
<tr>
<td>RHETORIC</td>
<td>Many countries said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.</td>
<td>- or -</td>
</tr>
</tbody>
</table>
ACTION = CUT 5%

ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.

RHETORIC = SHAMING

SHAMER = many U.S. allies

RHETORIC_TEXT = Many U.S. allies said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement. There were no comments from countries that were not U.S. allies.

- or -

ACTION = CUT 5%

ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.

RHETORIC = SHAMING

SHAMER = many countries that were not U.S. allies

RHETORIC_TEXT = Many countries that were not U.S. allies said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement. There were no comments from U.S. allies.

- or -
ACTION = CUT 5%

ACTION_TEXT = Over the next few years, the government passed new laws to reduce carbon dioxide emissions. Experts agreed that the new laws would increase U.S. energy prices by [ENERGY]% and reduce U.S. carbon emissions by 5%.

RHETORIC = SHAMING

SHAMER = many U.S. allies and many countries that were not U.S. allies

RHETORIC_TEXT = Many U.S. allies and many countries that were not U.S. allies said the U.S. should be ashamed of itself. They criticized the U.S. for doing so little to reduce U.S. emissions, and for violating the promises it made when it joined the Paris Agreement.
F. **INTRODUCTION TO ALL EXPERIMENTS**

The Paris Agreement is an international agreement about climate change.

Every country that joins the agreement promises to contribute to the worldwide goal of fighting climate change, by developing and carrying out a plan to reduce its emissions of carbon dioxide as quickly as possible.

- Please click here after you have read this page carefully

---

In the future, the U.S. government must decide whether to join the Paris Agreement, and whether to pass new laws to reduce U.S. emissions of carbon dioxide.

On the following screens, we will describe one approach the U.S. government could take in the future, and ask whether you approve or disapprove.

- Please click here after you have read this page carefully

---
Here is the situation:

- In 2021, the U.S. government announced that it would join the Paris Agreement. When it officially joined later that year, the U.S. said: “As a member of the Paris Agreement, we pledge to reduce U.S. emissions of carbon dioxide by 25% within ten years.”

Before continuing, we need to make sure you read this page carefully.

In the passage you read, what did the U.S. government announce?
- It would join the Paris Agreement
- It would not join the Paris Agreement
- Not sure
- No information given

In the passage you read, did the government pledge to reduce U.S. emissions of carbon dioxide?
- Yes
- No
- Not sure
- No information given

In the passage you read, the government pledged to reduce U.S. emissions of carbon dioxide by ...
- 5%
- 15%
- 25%
- 35%
- None of the above

– new page –
Here is what happened next:

- [ACTION_TEXT]

Before continuing, we need to make sure you read this page carefully.

In the passage you read, did the U.S. government pass new laws to reduce carbon dioxide emissions?
  - Yes
  - No
  - Not sure
  - No information given

*Programming: display this question if ACTION = NO ACTION*

In the passage you read, did the government take steps to affect U.S. energy prices?
  - Yes
  - No
  - Not sure
  - No information given

*Programming: display this question if ACTION = NO ACTION*

In the passage you read, did the government take steps to affect U.S. carbon emissions?
  - Yes
  - No
  - Not sure
  - No information given

*Programming: display this question if ACTION = CUT 5% or ACTION = CUT 25%*

Experts agreed that the new laws would increase U.S. energy prices by ...
  - 4%
  - 6%
  - 8%
  - 10%
  - None of the above

*Programming: display this question if ACTION = CUT 5% or ACTION = CUT 25%*

Experts agreed that the new laws would reduce U.S. carbon emissions by ...
  - 5%
  - 15%
  - 25%
  - 35%
  - None of the above

— new page —
G. CONCLUSION TO EXPERIMENT 1

*Programming instructions: Display this page if RHETORIC = SHAME. Do not display this page if RHETORIC = NONE.*

Here is what other countries said:

- [RHETORIC_TEXT]

Before we continue, we need to make sure you read this page carefully.

In the passage you read, did other countries criticize the United States?
- Yes
- No
- Not sure
- No information given

In the passage you read, what did other countries say about the United States? Answer as completely and as accurately as possible. [open-ended response]

– new page –

Just to review:

- In 2021, the U.S. government announced that it would join the Paris Agreement. When it officially joined later that year, the U.S. said: “As a member of the Paris Agreement, we pledge to reduce U.S. emissions of carbon dioxide by 25% within ten years.”

- [ACTION_TEXT]

- [RHETORIC_TEXT – Do not display this bullet if RHETORIC = NONE]

Taking into account all the decisions the U.S. government made in the passage you read, would you approve or disapprove of what U.S. government did overall?
- Approve strongly
- Approve somewhat
- Neither approve nor disapprove
- Disapprove somewhat
- Disapprove strongly
H. CONCLUSION TO EXPERIMENT 2

Here is what other countries said:

- [RHETORIC_TEXT]
- [REBUTTAL_TEXT]

Before we continue, we need to make sure you read this page carefully.

In the passage you read, did other countries criticize the United States?
  - Yes
  - No
  - Not sure
  - No information given

In the passage you read, what did other countries say about the United States? Answer as completely and as accurately as possible. [open-ended response]

In the passage you read, did the U.S. government respond by saying that other countries were right?
  - No
  - Yes
  - Not sure
  - No information given

In the passage you read, did the U.S. government apologize for not doing more and say it would work to reduce U.S. emissions in the future?
  - No
  - Yes
  - Not sure
  - No information given

– new page –
Just to review:

- In 2021, the U.S. government announced that it would join the Paris Agreement. When it officially joined later that year, the U.S. said: “As a member of the Paris Agreement, we pledge to reduce U.S. emissions of carbon dioxide by 25% within ten years.”

- [ACTION_TEXT]

- [RHETORIC_TEXT]

- [REBUTTAL_TEXT]

Taking into account all the decisions the U.S. government made in the passage you read, would you approve or disapprove of what U.S. government did overall?

- Approve strongly
- Approve somewhat
- Neither approve nor disapprove
- Disapprove somewhat
- Disapprove strongly
I. **CONCLUSION TO EXPERIMENT 3**

Here is what other countries said:

- [RHETORIC_TEXT]
- [REBUTTAL_TEXT]

Before we continue, we need to make sure you read this page carefully.

In the passage you read, did other countries criticize the United States?
- Yes
- No
- Not sure
- No information given

In the passage you read, what did other countries say about the United States? Answer as completely and as accurately as possible. [open-ended response]

In the passage you read, did the U.S. government respond by saying that other countries had no right to meddle in our affairs?
- No
- Yes
- Not sure
- No information given

In the passage you read, did the U.S. government say that other countries were trying to hurt and control the United States?
- No
- Yes
- Not sure
- No information given

– new page –
Just to review:

- In 2021, the U.S. government announced that it would join the Paris Agreement. When it officially joined later that year, the U.S. said: “As a member of the Paris Agreement, we pledge to reduce U.S. emissions of carbon dioxide by 25% within ten years.”

- [ACTION_TEXT]

- [RHETORIC_TEXT]

- [REBUTTAL_TEXT]

Taking into account all the decisions the U.S. government made in the passage you read, would you approve or disapprove of what U.S. government did overall?

- Approve strongly
- Approve somewhat
- Neither approve nor disapprove
- Disapprove somewhat
- Disapprove strongly
J. Conclusion to Experiment 4

Programming instructions: Display this page if RHETORIC = SHAME. Do not display this page if RHETORIC = NONE.

Here is what [SHAMER] said:

- [RHETORIC_TEXT]

Before we continue, we need to make sure you read this page carefully.

In the passage you read, did [SHAMER] criticize the United States?
- Yes
- No
- Not sure
- No information given

In the passage you read, what did [SHAMER] say about the United States? Answer as completely and as accurately as possible. [open-ended response]

– new page –

Just to review:

- In 2021, the U.S. government announced that it would join the Paris Agreement. When it officially joined later that year, the U.S. said: “As a member of the Paris Agreement, we pledge to reduce U.S. emissions of carbon dioxide by 25% within ten years.”

- [ACTION_TEXT]

- [RHETORIC_TEXT – Do not display this bullet if RHETORIC = NONE]

Taking into account all the decisions the U.S. government made in the passage you read, would you approve or disapprove of what U.S. government did overall?
- Approve strongly
- Approve somewhat
- Neither approve nor disapprove
- Disapprove somewhat
- Disapprove strongly
K. DEMOGRAPHIC QUESTIONS

Are you male or female?
- Male
- Female

What racial or ethnic group best describes you?
- White
- Black or African American
- Hispanic or Latino
- Asian or Asian American
- Native American
- Middle Eastern
- Mixed Race
- Some other race – Type in race

In what state do you currently reside?
Select response from drop-down list

Please enter your age on your last birthday.
Select response from drop-down list

What is the highest level of school you have completed?
- Did not graduate from high school
- High school graduate
- Some college, but no degree (yet)
- 2-year college degree
- 4-year college degree
- Postgraduate degree (MA, MBA, MD, JD, PhD, etc)
II. **Sample**

A. **Recruitment Procedures**

We administered our online surveys to 5,392 respondents in September–October 2018, and 2,878 respondents in January 2021. Respondents were recruited by Lucid, which used quota sampling to approximate the U.S. adult population with respect to gender, age, race/ethnicity, and geographic region.

B. **Demographic and Attitudinal Attributes of the Sample**

The table below compares the attributes of the sample to the attributes of the U.S. adult population. Target percentages for gender, age, region, race, education of people age 18 or older were obtained from the U.S. Census.\(^1\) Target percentages for party affiliation in September 2018 were obtained from the Pew Research Center.\(^2\)

We weighted the sample to ensure that it matched the distribution of party affiliation in the U.S. population. In addition to matching the party benchmarks exactly, our sample closely approximated the U.S. population with respect to gender, age, region, and race. The sample underrepresented people with no more than a high school degree, while overrepresenting people who had completed some college but not earned a four-year bachelor’s degree. This pattern did not affect our conclusions, however.

---


### Table A1: Attributes of the Sample and the U.S. Population

<table>
<thead>
<tr>
<th>Category</th>
<th>Sample (%)</th>
<th>U.S. (%)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>46.5</td>
<td>48.7</td>
<td>-2.2</td>
</tr>
<tr>
<td>Female</td>
<td>53.5</td>
<td>51.3</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 to 24 years</td>
<td>11.3</td>
<td>12.0</td>
<td>-0.7</td>
</tr>
<tr>
<td>25 to 44 years</td>
<td>35.2</td>
<td>34.3</td>
<td>0.9</td>
</tr>
<tr>
<td>45 to 64 years</td>
<td>34.7</td>
<td>33.1</td>
<td>1.6</td>
</tr>
<tr>
<td>65+ years</td>
<td>18.8</td>
<td>20.7</td>
<td>-1.9</td>
</tr>
<tr>
<td><strong>Region</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwest</td>
<td>19.5</td>
<td>20.8</td>
<td>-1.3</td>
</tr>
<tr>
<td>Northeast</td>
<td>20.1</td>
<td>17.8</td>
<td>2.3</td>
</tr>
<tr>
<td>South</td>
<td>37.4</td>
<td>37.7</td>
<td>-0.3</td>
</tr>
<tr>
<td>West</td>
<td>23.0</td>
<td>23.8</td>
<td>-0.8</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>73.9</td>
<td>77.7</td>
<td>-3.8</td>
</tr>
<tr>
<td>Black</td>
<td>9.8</td>
<td>12.9</td>
<td>-3.1</td>
</tr>
<tr>
<td>Other</td>
<td>16.3</td>
<td>9.4</td>
<td>6.9</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school or less</td>
<td>23.9</td>
<td>39.5</td>
<td>-15.6</td>
</tr>
<tr>
<td>Some college</td>
<td>39.3</td>
<td>28.2</td>
<td>11.1</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>36.8</td>
<td>32.3</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Party</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Democrat</td>
<td>32.7</td>
<td>32.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Independent</td>
<td>41.8</td>
<td>41.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Republican</td>
<td>25.5</td>
<td>25.5</td>
<td>0.0</td>
</tr>
</tbody>
</table>
C. **NUMBER OF RESPONDENTS BY EXPERIMENTAL CONDITION**

We administered **Experiment 1** to 2,945 respondents, who were randomly assigned to an action condition and a rhetoric condition. We assigned a higher fraction of respondents to scenarios in which the government cut by 25% and foreign countries shamed, to increase statistical power for comparisons with other experiments. The table below shows the number of respondents in each experimental condition.

**Table A2: Respondents by Experimental Condition in Experiment 1**

<table>
<thead>
<tr>
<th>Respondents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No action, No shaming</td>
<td>405</td>
</tr>
<tr>
<td>No action, Shaming</td>
<td>387</td>
</tr>
<tr>
<td>Cut 5%, No shaming</td>
<td>415</td>
</tr>
<tr>
<td>Cut 5%, Shaming</td>
<td>386</td>
</tr>
<tr>
<td>Cut 25%, No shaming</td>
<td>428</td>
</tr>
<tr>
<td>Cut 25%, Shaming</td>
<td>924</td>
</tr>
</tbody>
</table>

We administered **Experiment 2** to 1,190 respondents, who were randomly assigned to an action condition. All respondents in Experiment 2 read that foreign countries shamed the U.S., which responded with contrition. In the article, we compare data from Experiment 2 to data from Experiment 1.

**Table A3: Respondents by Experimental Condition in Experiment 2**

<table>
<thead>
<tr>
<th>Respondents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No action, Shaming + Contrition</td>
<td>371</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Contrition</td>
<td>401</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Contrition</td>
<td>418</td>
</tr>
</tbody>
</table>

We administered **Experiment 3** to 1,257 respondents, who were randomly assigned to an action condition. All respondents in Experiment 3 read that foreign countries shamed the U.S., which responded with defiance. In the article, we compare data from Experiment 3 to data from Experiment 1.

**Table A4: Respondents by Experimental Condition in Experiment 3**

<table>
<thead>
<tr>
<th>Respondents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No action, Shaming + Defiance</td>
<td>403</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Defiance</td>
<td>405</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Defiance</td>
<td>449</td>
</tr>
</tbody>
</table>
We administered **Experiment 4** to 2,878 respondents, who were all assigned to scenarios in which the government cut emissions by 5%. Some respondents were assigned to a no-shaming condition. Others were assigned one of four shaming conditions, which varied in the description of which countries did the shaming. We assigned a higher fraction of respondents to the no-shaming condition, to increase the ability to compare no-shaming with each of the shaming conditions.

**Table A5: Respondents by Experimental Condition in Experiment 4**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut 5%, No shaming</td>
<td>1,282</td>
</tr>
<tr>
<td>Cut 5%, Shaming by many countries</td>
<td>409</td>
</tr>
<tr>
<td>Cut 5%, Shaming by allies</td>
<td>389</td>
</tr>
<tr>
<td>Cut 5%, Shaming by non-allies</td>
<td>385</td>
</tr>
<tr>
<td>Cut 5%, Shaming by allies and non-allies</td>
<td>413</td>
</tr>
</tbody>
</table>
D. **Balance Across Experimental Conditions**

**Figure A1: Gender, by Treatment Condition**

<table>
<thead>
<tr>
<th>Experiment 1</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, No Shaming</td>
<td>43</td>
<td>57</td>
</tr>
<tr>
<td>No Action, Shaming</td>
<td>45</td>
<td>57</td>
</tr>
<tr>
<td>Cut 5%, No Shaming</td>
<td>48</td>
<td>55</td>
</tr>
<tr>
<td>Cut 5%, Shaming</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>Cut 25%, No Shaming</td>
<td>46</td>
<td>52</td>
</tr>
<tr>
<td>Cut 25%, Shaming</td>
<td>42</td>
<td>54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 2</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, Shaming + Contrition</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Contrition</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Contrition</td>
<td>48</td>
<td>52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 3</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, Shaming + Defiance</td>
<td>44</td>
<td>56</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Defiance</td>
<td>46</td>
<td>54</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Defiance</td>
<td>42</td>
<td>58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 4</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut 5%, No Shaming</td>
<td>48</td>
<td>51</td>
</tr>
<tr>
<td>Cut 5%, Many Countries</td>
<td>45</td>
<td>54</td>
</tr>
<tr>
<td>Cut 5%, Allies Only</td>
<td>47</td>
<td>53</td>
</tr>
<tr>
<td>Cut 5%, Non-Allies Only</td>
<td>44</td>
<td>55</td>
</tr>
<tr>
<td>Cut 5%, Allies &amp; Non-Allies</td>
<td>51</td>
<td>49</td>
</tr>
</tbody>
</table>
Figure A2: Age, by Treatment Condition

<table>
<thead>
<tr>
<th>Treatment Condition</th>
<th>Age 18-24</th>
<th>Age 25-44</th>
<th>Age 45-64</th>
<th>Age 65+</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Action, No Shaming</td>
<td>11</td>
<td>31</td>
<td>38</td>
<td>20</td>
</tr>
<tr>
<td>No Action, Shaming</td>
<td>12</td>
<td>36</td>
<td>33</td>
<td>19</td>
</tr>
<tr>
<td>Cut 5%, No Shaming</td>
<td>10</td>
<td>39</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>Cut 5%, Shaming</td>
<td>11</td>
<td>33</td>
<td>37</td>
<td>19</td>
</tr>
<tr>
<td>Cut 25%, No Shaming</td>
<td>9</td>
<td>34</td>
<td>39</td>
<td>17</td>
</tr>
<tr>
<td>Cut 25%, Shaming</td>
<td>14</td>
<td>34</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td><strong>Experiment 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Action, Shaming + Contrition</td>
<td>9</td>
<td>34</td>
<td>36</td>
<td>21</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Contrition</td>
<td>11</td>
<td>40</td>
<td>32</td>
<td>17</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Contrition</td>
<td>12</td>
<td>37</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td><strong>Experiment 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Action, Shaming + Defiance</td>
<td>12</td>
<td>31</td>
<td>36</td>
<td>21</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Defiance</td>
<td>11</td>
<td>35</td>
<td>37</td>
<td>17</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Defiance</td>
<td>11</td>
<td>38</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td><strong>Experiment 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut 5%, No Shaming</td>
<td>11</td>
<td>37</td>
<td>34</td>
<td>18</td>
</tr>
<tr>
<td>Cut 5%, Many Countries</td>
<td>12</td>
<td>34</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td>Cut 5%, Allies Only</td>
<td>12</td>
<td>34</td>
<td>34</td>
<td>20</td>
</tr>
<tr>
<td>Cut 5%, Non-Allies Only</td>
<td>11</td>
<td>36</td>
<td>35</td>
<td>18</td>
</tr>
<tr>
<td>Cut 5%, Allies &amp; Non-Allies</td>
<td>10</td>
<td>33</td>
<td>38</td>
<td>20</td>
</tr>
</tbody>
</table>
Figure A3: Region, by Treatment Condition
Figure A4: Race, by Treatment Condition

Experiment 1
No Action, No Shaming
No Action, Shaming
Cut 5%, No Shaming
Cut 5%, Shaming
Cut 25%, No Shaming
Cut 25%, Shaming

Experiment 2
No Action, Shaming + Contrition
Cut 5%, Shaming + Contrition
Cut 25%, Shaming + Contrition

Experiment 3
No Action, Shaming + Defiance
Cut 5%, Shaming + Defiance
Cut 25%, Shaming + Defiance

Experiment 4
Cut 5%, No Shaming
Cut 5%, Many Countries
Cut 5%, Allies Only
Cut 5%, Non-Allies Only
Cut 5%, Allies & Non-Allies
Figure A5: Education, by Treatment Condition

Experiment 1
No Action, No Shaming
- HS or Less: 23
- Some College: 40
- Bachelor’s: 38
No Action, Shaming
- HS or Less: 26
- Some College: 41
- Bachelor’s: 33
Cut 5%, No Shaming
- HS or Less: 29
- Some College: 36
- Bachelor’s: 37
Cut 5%, Shaming
- HS or Less: 28
- Some College: 40
- Bachelor’s: 36
Cut 25%, No Shaming
- HS or Less: 26
- Some College: 39
- Bachelor’s: 32
Cut 25%, Shaming
- HS or Less: 29
- Some College: 36
- Bachelor’s: 34

Experiment 2
No Action, Shaming + Contrition
- HS or Less: 26
- Some College: 40
- Bachelor’s: 34
Cut 5%, Shaming + Contrition
- HS or Less: 26
- Some College: 39
- Bachelor’s: 35
Cut 25%, Shaming + Contrition
- HS or Less: 21
- Some College: 43
- Bachelor’s: 36

Experiment 3
No Action, Shaming + Defiance
- HS or Less: 25
- Some College: 39
- Bachelor’s: 36
Cut 5%, Shaming + Defiance
- HS or Less: 23
- Some College: 42
- Bachelor’s: 35
Cut 25%, Shaming + Defiance
- HS or Less: 24
- Some College: 40
- Bachelor’s: 36

Experiment 4
Cut 5%, No Shaming
- HS or Less: 22
- Some College: 37
- Bachelor’s: 41
Cut 5%, Many Countries
- HS or Less: 24
- Some College: 40
- Bachelor’s: 36
Cut 5%, Allies Only
- HS or Less: 26
- Some College: 36
- Bachelor’s: 37
Cut 5%, Non-Allies Only
- HS or Less: 24
- Some College: 38
- Bachelor’s: 38
Cut 5%, Allies & Non-Allies
- HS or Less: 19
- Some College: 37
- Bachelor’s: 44
Figure A6: Party Identification, by Treatment Condition

<table>
<thead>
<tr>
<th></th>
<th>Democrat</th>
<th>Independent</th>
<th>Republican</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Action, No Shaming</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>No Action, Shaming</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, No Shaming</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, Shaming</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 25%, No Shaming</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 25%, Shaming</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Experiment 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Action, Shaming + Contrition</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Contrition</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Contrition</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Experiment 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Action, Shaming + Defiance</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Defiance</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Defiance</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Experiment 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut 5%, No Shaming</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, Many Countries</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, Allies Only</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, Non-Allies Only</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
<tr>
<td>Cut 5%, Allies &amp; Non-Allies</td>
<td>33</td>
<td>42</td>
<td>26</td>
</tr>
</tbody>
</table>

Note: We weighted the sample to match the distribution of party affiliation in the U.S. population: 32.7% Democrat, 41.8% Independent, and 25.5% Republican.
**Figure A7: Climate Beliefs, by Treatment Condition**

<table>
<thead>
<tr>
<th>Experiment 1</th>
<th>Humans Causing</th>
<th>Not Causing or DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, No Shaming</td>
<td>67</td>
<td>33</td>
</tr>
<tr>
<td>No Action, Shaming</td>
<td>64</td>
<td>36</td>
</tr>
<tr>
<td>Cut 5%, No Shaming</td>
<td>64</td>
<td>36</td>
</tr>
<tr>
<td>Cut 5%, Shaming</td>
<td>51</td>
<td>39</td>
</tr>
<tr>
<td>Cut 25%, No Shaming</td>
<td>68</td>
<td>32</td>
</tr>
<tr>
<td>Cut 25%, Shaming</td>
<td>68</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 2</th>
<th>Humans Causing</th>
<th>Not Causing or DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, Shaming + Contrition</td>
<td>66</td>
<td>34</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Contrition</td>
<td>63</td>
<td>37</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Contrition</td>
<td>64</td>
<td>36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 3</th>
<th>Humans Causing</th>
<th>Not Causing or DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, Shaming + Defiance</td>
<td>63</td>
<td>37</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Defiance</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Defiance</td>
<td>68</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 4</th>
<th>Humans Causing</th>
<th>Not Causing or DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut 5%, No Shaming</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>Cut 5%, Many Countries</td>
<td>68</td>
<td>32</td>
</tr>
<tr>
<td>Cut 5%, Allies Only</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>Cut 5%, Non-Allies Only</td>
<td>69</td>
<td>31</td>
</tr>
<tr>
<td>Cut 5%, Allies &amp; Non-Allies</td>
<td>71</td>
<td>29</td>
</tr>
</tbody>
</table>

*Note:* Graph summarizes how participants responded when asked, “There is much discussion about whether humans are causing climate change. Which of the following statements comes closest to your own opinion? Humans are causing climate change; Humans are not causing climate change; or Don’t know.”
Figure A8: Policy Preferences, by Treatment Condition

<table>
<thead>
<tr>
<th>Experiment 1</th>
<th>Favor New Laws</th>
<th>Oppose New Laws</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, No Shaming</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>No Action, Shaming</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>Cut 5%, No Shaming</td>
<td>68</td>
<td>32</td>
</tr>
<tr>
<td>Cut 5%, Shaming</td>
<td>61</td>
<td>39</td>
</tr>
<tr>
<td>Cut 25%, No Shaming</td>
<td>68</td>
<td>32</td>
</tr>
<tr>
<td>Cut 25%, Shaming</td>
<td>67</td>
<td>33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 2</th>
<th>Favor New Laws</th>
<th>Oppose New Laws</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, Shaming + Contition</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Contition</td>
<td>63</td>
<td>37</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Contition</td>
<td>66</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 3</th>
<th>Favor New Laws</th>
<th>Oppose New Laws</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action, Shaming + Defiance</td>
<td>63</td>
<td>37</td>
</tr>
<tr>
<td>Cut 5%, Shaming + Defiance</td>
<td>65</td>
<td>37</td>
</tr>
<tr>
<td>Cut 25%, Shaming + Defiance</td>
<td>65</td>
<td>35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experiment 4</th>
<th>Favor New Laws</th>
<th>Oppose New Laws</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut 5%, No Shaming</td>
<td>67</td>
<td>33</td>
</tr>
<tr>
<td>Cut 5%, Many Countries</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Cut 5%, Allies Only</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>Cut 5%, Non-Allies Only</td>
<td>66</td>
<td>34</td>
</tr>
<tr>
<td>Cut 5%, Allies &amp; Non-Allies</td>
<td>65</td>
<td>35</td>
</tr>
</tbody>
</table>

Note: Graph summarizes how participants responded when asked, “In your opinion, should the U.S. government pass new laws that would require Americans to reduce their use of fossil fuels, including coal, oil, and gas?” Response options were Yes or No, which we label as “Favor New Laws” and “Oppose New Laws”, respectively.
III. **Effects of Shaming**

Figure 1 of the article displays the percentage of Americas who approved of how the U.S. government behaved. Below, we use the data from Figure 1 to summarize how shaming affected public approval, given each of the three U.S. policies in our vignettes.

**Figure A9: Effects of Shaming on Approval**

![Graph showing the effects of shaming on approval.]

- No Action: 0
- Cut 5%: -22
- Cut 25%: -3
IV. **ESTIMATES USING FIVE-POINT SCALES**

We asked: “Taking into account all the decisions the U.S. government made in the passage you read, would you approve or disapprove of what the U.S. government did overall?” The response options were approve strongly, approve somewhat, neither approve nor disapprove, disapprove somewhat, or disapprove strongly.

For simplicity, the article focused on a natural and easily interpretable quantity of interest, the percentage of respondents who approved. In this section of the appendix, we show that our conclusions held when we analyzed the full five-point scale, expressed as 0, 25, 50, 75, 100.

**Figure A10: Approval without and with Shaming**

<table>
<thead>
<tr>
<th>Decision Level</th>
<th>Approval Without Shaming</th>
<th>Approval With Shaming</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>Cut 5%</td>
<td>51</td>
<td>67</td>
</tr>
<tr>
<td>Cut 25%</td>
<td>70</td>
<td>74</td>
</tr>
</tbody>
</table>

*Note: Solid dots show approval without shaming, hollow dots show approval with shaming.*

**Figure A11: Effects of Shaming on Approval**

<table>
<thead>
<tr>
<th>Decision Level</th>
<th>Effect on Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>-3</td>
</tr>
<tr>
<td>Cut 5%</td>
<td>-16</td>
</tr>
<tr>
<td>Cut 25%</td>
<td>-4</td>
</tr>
</tbody>
</table>
**Figure A12: Incentive to Comply without Shaming and with Shaming**

No Shaming | Shaming
---|---
7 | 23

**Figure A13: Approval without and with Shaming, by Party**

<table>
<thead>
<tr>
<th>Party</th>
<th>No Action</th>
<th>Cut 5%</th>
<th>Cut 25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democrats</td>
<td>20</td>
<td>58</td>
<td>76</td>
</tr>
<tr>
<td>Independents</td>
<td>29</td>
<td>48</td>
<td>67</td>
</tr>
<tr>
<td>Republicans</td>
<td>41</td>
<td>46</td>
<td>63</td>
</tr>
</tbody>
</table>

**Note:** Solid dots show approval without shaming, hollow dots show approval with shaming.

**Figure A14: Effects of Shaming Without a Rebuttal and with Contrition**

<table>
<thead>
<tr>
<th>Action</th>
<th>Effect on Approval (Scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>-3</td>
</tr>
<tr>
<td>Cut 5%</td>
<td>-16</td>
</tr>
<tr>
<td>Cut 25%</td>
<td>-4</td>
</tr>
</tbody>
</table>

**Note:** Solid dots show effects without a rebuttal; hollow dots show effects with contrition.
Figure A15: Effects of Shaming Without a Rebuttal and with Defiance

Note: Solid dots show effects without a rebuttal; hollow dots show effects with a defiant rebuttal.

Figure A16: Effects of Shaming, by Identity of the Shamers
V. **Detailed Estimates by Political Party**

In this section, we report the results of experiments 1–4, by the political party affiliation of respondents.

*Estimates by Party in Experiment 1*

**Figure A17: Effects of Shaming on Approval, by Party**

![Figure A17: Effects of Shaming on Approval, by Party](image)

**Figure A18: Incentive to Comply without Shaming and with Shaming, by Party**

![Figure A18: Incentive to Comply without Shaming and with Shaming, by Party](image)
Estimates by Party in Experiment 2

We estimated reactions to contrition within each partisan group. Consider the middle row, which shows how the public reacted when the government cut emissions by 5%. Shaming alone tended to reduce approval within each group. Surprisingly, though, contrition was more effective in countering the effects of shaming on Republicans and Independents, than on Democrats. This again suggests that governments—especially ones catering to Republicans and Independents—could minimize the effects of shaming by apologizing and promising to do more in the future.

Figure A19: Effects of Shaming Without a Rebuttal and with Contrition, by Party

<table>
<thead>
<tr>
<th>No Action</th>
<th>Democrats</th>
<th>Independents</th>
<th>Republicans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut 5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut 25%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Solid dots show effects without a rebuttal; hollow dots show effects with contrition.

Estimates by Party in Experiment 3

When also estimated reactions to defiance within each partisan group, which shows how the public reacted when the government cut emissions by 5%. Among Republicans, defiance counteracted most of the effects of shaming. The impact fell from 14 points to only 4 points, an effect that was statistically indistinguishable from zero. Defiance also persuaded Independents; the effect of shaming among that group shrank from 24 points to only 9 points. But defiance backfired among Democrats, who reacted more negatively to the combination of shaming and defiance than to shaming alone. Our experiments suggest that defiant rebuttals would be effective when pandering to Republicans and Independents, counterproductive when courting Democrats, and of little consequence on average.
Figure A20: Effects of Shaming Without a Rebuttal and with Defiance, by Party

<table>
<thead>
<tr>
<th>No Action</th>
<th>Cut 5%</th>
<th>Cut 25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democrats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>-24</td>
<td>-9</td>
</tr>
<tr>
<td>-2</td>
<td>-35</td>
<td>-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>-24</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Republicans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>-14</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Effect on Approval (%)

Note: Solid dots show effects without a rebuttal; hollow dots show effects with a defiant rebuttal.

Estimates by Party in Experiment 4

The figure below summarizes the effects of shaming in experiment 4, by the party of the respondent. For each partisan group, the effect of shaming was approximately the same, regardless of how we characterized the countries that were shaming. Curiously, shaming had no effect on Republican respondents in experiment 4, which was conducted in January 2021. This finding differs from our earlier experiments, in which shaming affected not only Democrats and Independents, but also Republicans. Future research should continue to examine how Republicans respond to shaming, and how those responses might vary over time and across political contexts.

Figure A21: Effects of Shaming, by Shamer and Party

| Many Countries | Democrats |         | Independents |         | Republicans |         |
|               |          |         |              |         |             |         |
| Allies Only   | -17      |         | -15          |         | -0          |         |
| Non-Allies Only | -15  |         | -12          |         | -1          |         |
| Allies & Non-Allies | -17 |         | -19          |         | -3          |         |
|               |          |         | -8           |         | -0          |         |

Effect on Approval (%)
VI. ESTIMATES BY CLIMATE BELIEFS

In this section, we report the results of experiment 1, conditional on the climate beliefs of respondents. We asked: “There is much discussion about whether humans are causing climate change. Which of the following statements comes closest to your own opinion? Humans are causing climate change; Humans are not causing climate change; or Don’t know.” Based on this question, we split the sample into two groups: those who thought humans were causing climate change, and those who thought humans were not causing climate change or didn’t know. In most cases, shaming had a bigger effect on respondents who thought humans were causing climate change.

Figure A22: Approval without and with Shaming, by Climate Beliefs

Note: Solid dots show approval without shaming, hollow dots show approval with shaming.

Figure A23: Effects of Shaming, by Climate Beliefs
Figure A24: Approval without and with Shaming, by Climate Beliefs and Party

Note: Solid dots show approval without shaming, hollow dots show approval with shaming.
Figure A25: Effects of Shaming, by Climate Beliefs and Party

Humans Causing

Democrats

Independents

Republicans

No Action

Cut 5%

Cut 25%

Effect on Approval (%)

-60 -30 0 30 60

-60 -30 0 30 60

-60 -30 0 30 60

Humans Not Causing or DK

Democrats

Independents

Republicans

No Action

Cut 5%

Cut 25%

Effect on Approval (%)

-60 -30 0 30 60

-60 -30 0 30 60

-60 -30 0 30 60
VII. ESTIMATES BY POLICY PREFERENCES

In this section, we report the results of experiment 1, conditional on the policy preferences of respondents. We asked, “In your opinion, should the U.S. government pass new laws that would require Americans to reduce their use of fossil fuels, including coal, oil, and gas?” Response options were Yes or No, which we used to split the sample into two groups: respondents who favored new laws, and respondents who opposed new laws. In most cases, shaming had a bigger effect on respondents who favored new laws to reduce the use of fossil fuels.

Figure A26: Approval without and with Shaming, by Party and Policy Preferences

![Figure A26](image_url)

*Note:* Solid dots show approval without shaming, hollow dots show approval with shaming.

Figure A27: Effects of Shaming, by Policy Preferences and Party

![Figure A27](image_url)
Figure A28: Approval without and with Shaming, by Policy Preferences and Party

**Favor New Laws**

<table>
<thead>
<tr>
<th></th>
<th>Democrats</th>
<th>Independents</th>
<th>Republicans</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>10</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Cut 5%</td>
<td>59</td>
<td>45</td>
<td>58</td>
</tr>
<tr>
<td>Cut 25%</td>
<td>82</td>
<td>70</td>
<td>86</td>
</tr>
</tbody>
</table>

**Oppose New Laws**

<table>
<thead>
<tr>
<th></th>
<th>Democrats</th>
<th>Independents</th>
<th>Republicans</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>20</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Cut 5%</td>
<td>44</td>
<td>36</td>
<td>30</td>
</tr>
<tr>
<td>Cut 25%</td>
<td>65</td>
<td>34</td>
<td>38</td>
</tr>
</tbody>
</table>

*Note*: Solid dots show approval without shaming, hollow dots show approval with shaming.
Figure A29: Effects of Shaming, by Policy Preferences and Party

**Favor New Laws**

- **Democrats**
  - No Action: -3
  - Cut 5%: -27
  - Cut 25%: -10

- **Independents**
  - No Action: -9
  - Cut 5%: -24
  - Cut 25%: -8

- **Republicans**
  - No Action: -10
  - Cut 5%: -17
  - Cut 25%: -1

**Oppose New Laws**

- **Democrats**
  - No Action: 7
  - Cut 5%: -5
  - Cut 25%: 4

- **Independents**
  - No Action: 10
  - Cut 5%: -14
  - Cut 25%: 11

- **Republicans**
  - No Action: -1
  - Cut 5%: -6
  - Cut 25%: 11
VIII. ESTIMATES INCLUDING INATTENTIVE RESPONDENTS

In the article and in earlier sections of this appendix, we restricted the sample to attentive respondents, defined as those who correctly answered at least 80% of the comprehension questions. The table below shows that, in each experiment, more than 4 out of every 5 respondents met this threshold.

Table A6: Attentive and Inattentive Respondents, by Experiment

<table>
<thead>
<tr>
<th>Experiment</th>
<th>Attentive</th>
<th>Inattentive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of respondents</td>
<td>2,945</td>
<td>702</td>
</tr>
<tr>
<td>Percentage of respondents</td>
<td>81%</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Experiment 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of respondents</td>
<td>1,190</td>
<td>266</td>
</tr>
<tr>
<td>Percentage of respondents</td>
<td>82%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Experiment 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of respondents</td>
<td>1,257</td>
<td>300</td>
</tr>
<tr>
<td>Percentage of respondents</td>
<td>81%</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Experiment 4</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of respondents</td>
<td>2,878</td>
<td>647</td>
</tr>
<tr>
<td>Percentage of respondents</td>
<td>82%</td>
<td>18%</td>
</tr>
</tbody>
</table>

The figures below show the effects of shaming on all respondents, whether attentive or not. Our main conclusions held, even after including respondents who did not provide correct answers to at least 80% of the comprehension checks.
**Figure A30: Approval without and with Shaming**

Note: Solid dots show approval without shaming, hollow dots show approval with shaming.

**Figure A31: Effects of Shaming on Approval**

**Figure A32: Incentive to Comply without Shaming and with Shaming**
Figure A33: Approval without and with Shaming, by Party

Note: Solid dots show approval without shaming, hollow dots show approval with shaming.

Figure A34: Effects of Shaming Without a Rebuttal and with Contrition

Note: Solid dots show effects without a rebuttal; hollow dots show effects with contrition.

Figure A35: Effects of Shaming Without a Rebuttal and with Defiance

Note: Solid dots show effects without a rebuttal; hollow dots show effects with a defiant rebuttal.
Figure A36: Effects of Shaming, by Identity of the Shamers