

Do Pledges Bind? The Mass Politics of International Climate Targets

Don Casler, Richard Clark, and Noah Zucker*

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Abstract

Contemporary climate governance rests on voluntary pledges made by states to reduce greenhouse gas emissions. Given the lack of formal enforcement mechanisms and limitations of naming and shaming, what weight do these pledges carry? We argue that independent of interest group pressure and transnational shaming, public distaste for backing down from treaty commitments dissuades defection. Emissions targets establish easily interpretable benchmarks, creating a salient cleavage between politicians who adhere to versus defect from them. This allows voters to better distinguish between politicians and sanction those offering policies discordant with climate pledges. Analysis of U.S. television news supports the intuition that emissions targets have simplified popular climate discourse. Conjoint and vignette experiments fielded in the U.S. suggest that candidates who deemphasize climate pledges may lose electoral support. These findings illustrate the potential electoral weight of international climate commitments.

Keywords: climate change; international cooperation; international law; Paris Agreement; emissions

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*Casler is an Assistant Professor of Political Science, University of Illinois Urbana-Champaign (dcasler@illinois.edu). Clark is an Assistant Professor of Political Science, University of Notre Dame (richard.clark@nd.edu). Zucker is an Assistant Professor of International Relations, London School of Economics (n.zucker@lse.ac.uk). We thank Sabrina Arias, Stephen Chaudoin, Jeff Colgan, Christina Davis, and Julia Morse for helpful comments and the Columbia Experimental Laboratory for Social Sciences, Columbia Center for Science and Society, and Cornell Atkinson Center for Sustainability for financial support. We also thank Duy Trinh for technical assistance. This paper received valuable feedback at the 2022 American Political Science Association Annual Meeting and 2023 Political Economy of International Organization Annual Conference. It was approved by the institutional review boards of Brown (#2022003456), Columbia (#AAAU1367), Cornell (#0147008), and LSE (#330077).

The Paris Agreement marked a sea change in the nature of global climate governance. Rather than relying on the top-down mandates and weak enforcement mechanisms that characterized the Kyoto Protocol, negotiators in Paris opted for a new logic: a bottom-up approach whereby states publicly and voluntarily pledged to reduce greenhouse gas emissions by self-determined amounts, with the goal of limiting warming to 1.5–2°C above pre-industrial levels. The Paris framers gambled that international and domestic “naming and shaming” would induce compliance by establishing easily identifiable benchmarks and allowing audiences to monitor states’ performance against them (Falkner 2016).

What weight do these voluntary commitments carry? Theories of international cooperation provide reasons to be skeptical of the Paris framework. Classic studies of international organization emphasize material coercion as a means of ensuring that states remain cooperative (Krasner 1976; Barrett 1997). The threat of tangible penalties or withheld benefits has proven crucial where free-riding incentives are strong or where compliance is in tension with domestic political incentives (Keohane 1984; Axelrod and Keohane 1985; Fearon 1998; Hafner-Burton 2012). International climate cooperation features these incentives (Barrett 2003; Colgan, Green, and Hale 2021; Kennard and Schnakenberg 2023), yet the current climate regime lacks formal means of materially sanctioning non-cooperative states.¹ Moreover, research on naming and shaming indicates that its effects are often limited in magnitude, highly conditional, or counterproductive (Hafner-Burton 2008; Terman 2023). Even when naming and shaming succeeds in marshaling domestic disapproval (Tingley and Tomz 2022), it is unclear whether or how these attitudinal shifts translate into meaningful political costs for leaders (Kallbekken 2023), as recent international law scholarship shows (Chilton and Linos 2021; Sheppard and von Stein 2022).

Despite the lack of formal enforcement and limits to naming and shaming, we argue that voluntary climate commitments are meaningful because they generate approval costs that voters levy on leaders who fail to follow through on these pledges. Independent of shaming by the international

¹Though trade sanctions are sometimes linked to climate initiatives (e.g., the EU’s CBAM), which can give climate commitments more bite.

community or domestic activists, voters may punish governments at the ballot box for reneging on emissions reduction targets when they have information about such behavior. The public nature of climate pledges, as well as Paris's overarching goal of keeping warming below 1.5–2°C, eases the informational burden of discerning the strength of politicians' climate platforms, generating a clear standard against which politicians can be evaluated.² Emissions reduction targets contained in pledges allow voters to better discriminate between politicians' climate platforms and sanction those who pursue policies discordant with global climate goals.

Climate pledges, known as nationally determined contributions (NDCs) under Paris, can in this way activate an audience costs mechanism that encourages leaders to abide by their promises. Canonically, leaders who retrench from known international commitments incur approval costs at home as backing down makes them look weak or irresolute (Fearon 1994; Tomz 2007a; Kertzer and Brutger 2016). Though leaders can sometimes insulate themselves from such sanctions, including those resulting from breaches of international law (Levendusky and Horowitz 2012; Lin-Greenberg 2019; Morse and Pratt 2022), the public nature of emissions targets means that rhetorical reframing or policy substitution may struggle to avert disapproval. Even if the commitments are ambiguous, their publicity and ultimate intent of containing warming to a well-known level (1.5–2°C) creates a salient distinction between what it looks like to be on versus off-track.³

These approval costs should intensify when other countries comply with their own commitments. Audiences are not only attentive to reciprocity in international climate politics (Bechtel and Scheve 2013; though see Beiser-McGrath and Bernauer 2019), but also may fear the reputational

²Countries vary in the depth and specificity of their Paris targets (Sabel and Victor 2022; Tørstad and Wiborg 2022). Issuance of vague pledges may be a means of avoiding either commitment to specific courses of action or electoral sanction (Snyder and Borghard 2011).

³While elites have significant ability to shape public opinion on domestic and international issues (Zaller 1992; Lenz 2012; Guisinger 2017), they sometimes struggle to align the public with their preferred view when it comes to international cooperation (Dellmuth and Tallberg 2020; Dellmuth, Scholte, Tallberg et al. 2022).

damage (Guisinger and Smith 2002; Crescenzi 2018; Tomz and Weeks 2021) and status loss (Renshon 2017; Ward 2017; Murray 2018; Larson and Shevchenko 2019; Barnhart 2020) that could result from noncompliance if other states have found ways to meet similar targets. Latent public preferences for conditional cooperation may thus impose additional costs on leaders who fail to meet commitments in the face of others' compliance.

While there are challenges in evaluating whether a country is on pace to meet its commitments (Victor, Lumkowsky, and Dannenberg 2022), we assume that voters have access to information on either (a) a country's performance vis-à-vis its climate pledges, such as from third-party monitors, or (b) whether a candidate in an election promises to abide by a target. We see this assumption as reasonable given extensive media coverage about the adequacy of national climate performance (Carattini and Löschel 2021, though see Chaudoin 2023) and the political salience of climate change (Hermwille and Sanderink 2019; Arias and Schwartz 2023). Exit polls suggest that about two-thirds of U.S. voters rated climate change as a "serious problem" in the 2020 general election, and climate change was tied with immigration as the third-most important issue facing the country among 2022 midterm voters.⁴ In 2024, polling showed that 39% of registered voters considered climate to be "very important" to their vote choice (Leiserowitz, Maibach, Rosenthal et al. 2024). Similarly, a survey completed after President Trump pulled the U.S. out of the Paris Agreement revealed that 55% of Americans believed the decision hurt U.S. leadership in the world.⁵ However, unlike recent work, we do not consider cases where a government is "publicly denounce[d]" for poor climate performance (Tingley and Tomz 2022, 445); we rather focus on responses to non-compliance independent of external normative judgments.

We test our argument by analyzing television news stories about climate change and conducting three survey experiments fielded on diverse samples of the American public. We focus on

⁴*Pew Research Center*, 6 Oct 2020, rb.gy/zahbry; *Washington Post*, 14 Dec 2020, rb.gy/grgltc; *Washington Post*, 10 Nov 2022, rb.gy/dxry0o; *New Republic*, 11 Nov 2022, rb.gy/3gtvmr.

⁵*Politico*, 5 June 2017, <https://bit.ly/3S9MquM>

the United States due to its status as one of the world’s largest emitters, making it a potential “linchpin” upholding the global climate regime (Barrett 2003). To investigate our intuition that international agreements have generated a salient distinction between meeting and missing climate commitments, we study roughly 95,000 English-language, U.S. news segments televised between 2009 and 2020. Using a novel dictionary of binary climate terminology, we show that mentions of the Paris Agreement, which went into effect in 2016, are associated with more usage of binary language that frames countries’ performance as either on or off track. These results suggest that Paris targets clarify the sufficiency of politicians’ climate policies and can thus serve as a heuristic for voters in an otherwise complex policy space (cf. Lupia and McCubbins 1998).

The three survey experiments then evaluate how politicians’ actions and positions on climate pledges affect their public support, including when holding constant the general strength of their climate policies. The first experiment is a candidate choice conjoint. Conjoint results show, even after accounting for demographic traits and other policy positions, that hypothetical candidates’ positions on a U.S. climate commitment are among the most powerful predictors of vote choice in both general elections and Democratic primaries. This suggests that politicians, particularly those seeking votes from the left, have an electoral incentive to support and comply with climate commitments. The magnitude of these effects diverges from work that finds politicians’ environmental stances to be a minor determinant of vote choice (Hainmueller, Hopkins, and Yamamoto 2014; Bansak, Hainmueller, Hopkins et al. 2022), though are consonant with new research highlighting the growing popular salience of climate (Leiserowitz, Maibach, Rosenthal et al. 2024).

The second experiment explores the mechanisms underlying these candidate choices. We construct a hypothetical vignette that varies whether the sitting president has pursued policies compatible with the U.S. climate pledge and whether peer countries are on pace to meet their own targets. Results indicate that voters disapprove of failures to meet the U.S. pledge, particularly when other countries stay on track. We additionally find that voters interpret commitment failures as damaging to the international reputation of the U.S. We identify these effects for Democrats, Republicans, and independents. Viewed in conjunction with the conjoint experiment, these results suggest that

while some Republicans support the maintenance of international climate accords in principle, this does not translate into changes in candidate choice when viewed alongside politicians' other policy positions and demographic attributes.

The third experiment evaluates whether meeting pledged climate targets affects public support when holding constant the strength of a leader's climate platform. Here we deal explicitly with the possibility that rather than punishing the leader for breaking a commitment, citizens may simply be expressing general dissatisfaction with the government's climate policies. In this vignette experiment, the control condition describes a hypothetical president's policies as generally pro-climate. The treatment describes the president's policies as generally pro-climate *and* likely to help the U.S. meet its climate goals. We find that treated subjects express greater approval for the president and are more confident the president is doing enough on climate than those in the control group. These findings indicate that meeting international climate commitments matters to the public above and beyond a general preference for green policymaking.

Our research makes two primary contributions. First, we shed light on the practical implications of public support for climate agreements (Bechtel and Scheve 2013; Tingley and Tomz 2014; Beiser-McGrath and Bernauer 2019; Arias and Schwartz 2023), offering a new account of the incentives to abide by climate commitments independent of naming and shaming. Building on work that identifies public disapproval of noncompliance with such commitments (Tingley and Tomz 2022), we find that changes in climate platforms produce meaningful shifts in individuals' candidate evaluations and prospective voting intentions, a link that has not been extensively explored in the climate politics literature. In doing so, we add to work detailing the domestic political ramifications of international climate agreements (Bechtel, Scheve, and van Lieshout 2022). Second, we extend the reach of audience costs theory, applying insights from crisis bargaining (Tomz 2007a; Brutger and Kertzer 2018), economic sanctions (Hart Jr. 2000; Thomson 2016), and trade (Chaudoin 2014; Casler and Clark 2021) to a new issue area while demonstrating its implications for political accountability.

Audience Costs and Climate Politics

Many countries are at risk of failing to reach their self-determined emissions targets under the Paris Agreement. Germany, grappling with volatile energy supplies in the wake of the Russian invasion of Ukraine, has opted to keep online several coal plants previously scheduled for retirement.⁶ The U.S., despite passing landmark clean energy legislation, fell even further behind its emissions reductions targets in 2022.⁷ Brazil, set back by rampant deforestation under former President Jair Bolsonaro, now faces an uphill battle to meet its commitments.⁸ Do failures to meet Paris commitments erode leaders' standing with their citizens? If so, could these approval costs translate into tangible electoral losses?

Existing research is skeptical of the public's role in shaping international climate cooperation. The naming-and-shaming mechanism on which Paris relies has proven ineffective or counterproductive for human rights compliance (Hafner-Burton 2008; Terman 2023), though survey evidence suggests it is conditionally effective in the climate context (Tingley and Tomz 2022). More broadly, however, mass audiences have rarely achieved widespread mobilization on climate (Obradovich and Zimmerman 2016; Egan and Mullin 2017), perhaps because of low issue salience (Kennard 2021). While leader and media cues often facilitate mobilization on foreign policy (Guisinger 2017; Brutger and Strezhnev 2022), elites and the public remain split in their concern for international cooperation (Dellmuth, Scholte, Tallberg et al. 2022), suggesting that such cues have been ineffective in this domain. As Falkner (2016, 1123) notes, "the outlook for accountability [to Paris] at the hands of civil society is uncertain and highly uneven."

Even in cases where scholars posit a role for public opinion of international climate agreements (Bechtel and Scheve 2013), it is unclear whether such attitudes translate into meaningful pressure on policymakers (Tingley and Tomz 2022, fn. 49; Egan and Mullin 2017; Kallbekken 2023).

⁶*Politico*, 4 Oct 2022, [politi.co/3ZfJjU2](https://www.politico.com/news/2022/10/04/germany-coal-plants-000000).

⁷*Financial Times*, 10 Jan 2023, [rb.gy/1bd6ym](https://www.ft.com/content/1bd6ym).

⁸*Bloomberg*, 19 Dec 2022, [bloom.bg/3HXqTQ1](https://www.bloomberg.com/news/articles/2022-12-19/brazil-deforestation-targets).

Scholars of international law identify inconsistent and weak linkages between public preferences and policy choices (Chilton and Linos 2021), suggesting there may be a “democratic deficit” in global climate governance.

We revise this conventional wisdom, contending that when leaders fail to meet climate pledges, many voters will sanction them at the ballot box regardless of whether or not the leaders have been shamed. We derive this argument from a large body of work on audience costs in international relations. A key condition under which audience costs operate is *publicity*, as citizens must be able to observe the general content (though not the specificity) of a commitment in order to punish defection from it (Fearon 1994; Tomz 2007a). Commitments are necessarily public under the Paris Agreement. States pledge to meet certain emissions targets under their NDCs. For example, the 2021 U.S. NDC set “an economy-wide target of reducing its net greenhouse gas emissions by 50–52 percent below 2005 levels in 2030.”⁹ Third-party monitors, including foreign governments, international organizations, NGOs, and academics, estimate emissions and track states’ progress toward NDCs.¹⁰ Third-party monitoring enables the public to observe whether states are on pace to reach their targets. This information allows voters to prospectively evaluate how candidates might perform in office, as well as retrospectively assess whether a politician’s policies have accorded with or deviated from Paris pledges.

Targets also clarify the *sufficiency* of climate policies. In their absence, it is more difficult to assess whether politicians are meaningfully contributing to global mitigation efforts given the deep uncertainties that surround climate policymaking (Constantino and Weber 2021). We suggest that targets help resolve such ambiguity by creating straightforward benchmarks for politician performance and policy progress. States are either on track to meet their NDCs or not.¹¹ In separating compliant leaders from laggards, these pledges simplify a complex policy space by introducing

⁹UNFCCC, unfccc.int/NDCREG.

¹⁰See, e.g., the European Union’s Emissions Database for Global Atmospheric Research.

¹¹As noted previously, assessments of compliance are more difficult for thinner and vaguer NDCs. The audience costs mechanism may weaken when pledges are less precise.

more discernible standards against which audiences can evaluate politicians. Scholars have long recognized the heuristic power of classification schemes and global performance indicators (Dolan 2018; Honig and Weaver 2019; Morse 2019). Their utility, both in the climate domain and elsewhere, comes from their simplicity and ease of interpretation (Kelley and Simmons 2020). This categorization of politicians' climate policies allows audiences to assess their positions and performance and select or sanction them accordingly (Grossman and Slough 2022, 135).

We note here a point of compatibility with naming-and-shaming theory. Naming and shaming rests on the provision of information on a country's norm violations by foreign actors or domestic civil society. The changes in approval and vote choice that we theorize may be products of this component of naming and shaming, but they do not require some value judgment to operate. Tingley and Tomz (2022), for example, consider declarations that a country should be "ashamed" of itself for poor climate performance; the mechanism we put forth does not depend on normative statements of this sort. Rather, to the extent that a climate pledge contains a specific and observable emissions target, it independently generates views of whether policy is proper (concordant with the target) or improper (inconsistent with the target).

Sanctions levied by domestic electorates may be a core means by which governments incur costs for falling short of their commitments.¹² This differentiates climate from issue areas like trade and foreign investment, where aggrieved parties can seek financial recompense through such institutions as the World Trade Organization and International Centre for the Settlement of Investment Disputes. Though governance by soft law and informal institutions is increasingly common (Roger 2020; Roger and Rowan 2023), the absence of material carrots and sticks may limit adherence to such pledges (Simmons 2009; Posner 2014). Given the lack of statutory enforcement mechanisms for climate, the sanctions that leaders may incur for missing emissions targets relate not just to shaming by foreign governments and activists (Tingley and Tomz 2022), but also to

¹²Others argue that compliance with soft commitments is only high because such commitments are shallow (Chayes and Chayes 1995; Downs, Rocke, and Barsoom 1996).

their electoral standing.¹³

We theorize that public climate pledges, whether made or inherited by a leader, activate an audience costs mechanism that encourages those leaders to meet stated targets. Leaders tend to pay “inconsistency costs” for failing to follow through on a threat or promise (Kertzer and Brutger 2016).¹⁴ This has also proven true in the context of various international legal issues, such as trade, where leaders often inherit commitments from predecessors (Chaudoin 2014), and immigration, where leaders are bound by UN convention to treat refugees humanely (Sheppard and von Stein 2022). In the climate case, pledges have informational value (Bechtel and Scheve 2013), sharpening the distinction between adequate and inadequate policy while clarifying when leaders have or have not followed through on their country’s commitments.¹⁵ In this way, pledges make salient the consistency or inconsistency of a leader’s record on climate.

We expect disapproval of insufficient climate policy to affect vote choice, eroding politicians’ standing with voters. Here we depart from previous studies of climate that have bracketed vote choice as an outcome of interest (Kallbekken 2023). While Tomz (2007a) identified an attitudinal-behavioral link in audience costs, there has been little subsequent focus on how approval loss from backing down might translate into tangible electoral costs. Scholarship on climate often points to a lack of popular mobilization on the issue and general hesitance to take costly steps toward

¹³Over- or under-promising on emissions reductions may affect public support (Tingley and Tomz 2020).

¹⁴Audience costs also involve “belligerence costs” paid for issuing a threat in the first place. Given that across states there is little variation in the existence of pledges, we see inconsistency costs as more applicable to climate.

¹⁵In addition to concern about consistency between leaders’ words and deeds, voters are broadly concerned about climate change (Howe, Mildenberger, Marlon et al. 2015). We are not the first to apply audience costs to questions of economic cooperation, but by examining inconsistency costs in the climate domain, our contribution is distinct. See, e.g., Hart Jr. 2000; Thomson 2016; Casler and Clark 2021.

mitigation or adaptation (Greenstone and Jack 2015; Obradovich and Zimmerman 2016; Egan and Mullin 2017); substantial shares of voters in Western democracies prioritize economic growth over environmental protection (Drews, Antal, and van den Bergh 2018).

We theorize that concerns over a leader reneging on their country’s climate pledges extend to evaluations of candidates for political office. To the extent that pledges create a clear standard against which climate policies and performance are assessed, they should make clear the sufficiency of competing climate platforms and — in cases where platforms are clustered around the stated target — separate “consistent” candidates from inconsistent ones.¹⁶ Given voters’ general interest in leaders’ consistency as a sign of their competence and capacity for good judgment, we anticipate that voters will tend to select candidates offering climate policies consistent with national emissions targets.

Hypothesis 1. *Citizens should be more likely to approve of and vote for candidates who prioritize meeting a climate pledge than those who do not.*

A logic of comparative achievement in relation to foreign states may affect how strongly these costs bind politicians. Citizens should disapprove most of leaders who renege on climate pledges when other countries remain on pace to achieve their own commitments. Approval costs could intensify in this context for two reasons. The first is reciprocity, the principle thought to underpin international cooperation even in settings with high potential for opportunism (Axelrod and Keohane 1985). Yet the evidence for reciprocity in public opinion on climate is mixed. On the one hand, Bechtel and Scheve (2013) demonstrate that climate treaties which encompass the most countries garner the greatest popular support. On the other hand, Tingley and Tomz (2014) find little evidence of negative intrinsic reciprocity in mass climate attitudes — public support for climate change mitigation only varies positively with other countries’ performance. Beiser-McGrath and Bernauer (2019) similarly show that attitudes among American and Chinese citizens about

¹⁶Positions on climate pledges may do less to swing votes when all candidates have either weak climate platforms (all inconsistent with pledge) or sufficient platforms (all consistent with pledge).

the design of international climate accords do not change with information about other countries' behavior. We are therefore skeptical that the prospect of conditional cooperation, at least of the form envisioned by intrinsic reciprocity, will shape approval of the leader.

We favor a second mechanism: reputation. On the one hand, domestic audiences have a “taste” for reputation insofar as they care about whether their government comes across reliable, honest, and competent (Guisinger and Smith 2002; Simmons 2009; Jervis, Yarhi-Milo, and Casler 2021; Tomz and Weeks 2021). The logic of reputation is not only a core premise on which audience costs rest (Brutger and Kertzer 2018), but also an important ingredient for sustaining cooperation in its own right (Jervis 1970; Tomz 2007b; Crescenzi 2018; Schmidt 2021; Casler, Ribar, and Yarhi-Milo 2023). On the other hand, governments and leaders pursue status, an esteemed position in the global hierarchy. States thus seek inclusion and high rank in groupings of countries for a mix of material and prestige-related reasons (Renshon 2017; Ward 2017; Murray 2018; Larson and Shevchenko 2019; Barnhart 2020).

Public audiences may accordingly see divergence from climate pledges as doubly damaging. Missing an emissions target could evince not just a lack of capacity or trustworthiness, but also erode a state's standing in relation to foreign peers. Climate, in particular, is a setting in which individual countries can serve as “linchpins” required to hold international agreements together; one major defection can cause an entire agreement to unravel (Barrett 2003). The largest emitters are also the most economically powerful states, which confers membership in an exclusive club: these countries not only hold significant economic sway but are also the actors who possess the resources to address the problem at hand. Failure to act when influential states remain committed to doing so causes domestic audiences to fear that their leader has endangered their country's global reputation. This mechanism is complementary to but distinct from naming and shaming, the transnational version of which relies on states chastising one another for violating international agreements (Hafner-Burton 2008; Tingley and Tomz 2022). We rather consider how electorates sanction leaders for failing to meet pledges when other countries are or are not compliant with their own commitments.

Hypothesis 2. *Citizens should disapprove more of leaders who renege from climate commitments when other countries remain on pace to meet their own pledges.*

Analysis

We test this argument in multiple steps. First, we evaluate our contention that climate pledges simplify the climate politics information space, sharpening distinctions between politicians’ climate policies and platforms. We do so by analyzing a large corpus of recent television news segments on climate. We find that when Paris is discussed, commentators employ more binary language that clearly classifies policies and platforms as compliant or noncompliant.

Next, we conduct three pre-registered survey experiments, each fielded on different samples of American adults between April 2022 and April 2024.¹⁷ We first evaluate whether noncompliance with climate targets affects vote choice. We then probe whether voter disapproval of leaders’ inconsistency underlies any sanctioning of recalcitrant candidates. We finally verify that voter disapproval is driven specifically by failures to comply with an international climate pledges rather than general preferences for climate action.

The first experiment is a candidate choice conjoint, in which we examine how candidates’ policies regarding climate pledges — alongside other policy positions and demographic attributes — affect hypothetical vote choice (Bansak, Hainmueller, Hopkins et al. 2021). The second experiment adopts a two-by-two factorial design, offering vignettes that vary in (a) a hypothetical president’s performance regarding a climate pledge, and (b) the behavior of peer countries. The third experiment presents respondents with a news-style vignette which varies whether a hypothetical president’s policies are generally pro-climate or generally pro-climate *and* likely to help the U.S. meet its emissions goals. Across the board, the results are consistent with this paper’s theory. Americans, especially those on the left, disapprove of inconsistency with climate pledges

¹⁷The experiments were pre-registered with the Wharton Credibility Lab (#94210, #112445, #162518); see Appendix 13 for pre-analysis plans.

and express this discontent by adjusting their voting intentions. We further find that disapproval mounts when defection occurs while peer countries are on track to meet their commitments.

We focus empirically on the U.S. given the salience of climate and the Paris Agreement in the country, apparent in both public polling (Leiserowitz, Maibach, Rosenthal et al. 2024) and elite discourse. By our accounting, the Paris Agreement was mentioned by at least one candidate in nine of the eleven Democratic presidential primary debates in 2019–20 (Tables A1–A3). Then-candidate Joe Biden repeatedly framed the issue in stark terms, stating during the July 2021 debate: “There is no middle ground about my plan. The fact of the matter is I call for the immediate action to be taken [...] I would immediately rejoin that Paris Accord. I would make sure that we up the ante which it calls for.”¹⁸ Several other candidates also referenced Paris, promising to reenter the agreement upon assuming the presidency or criticizing then-president Donald Trump for withdrawing from the accord.

Media Analysis: Growth in Binary Climate Discourse

We theorize that climate pledges enable citizens to register disapproval of leaders who are out of step with climate goals by providing a clear yardstick against which politicians and policies can be evaluated and compared. To validate this intuition, we study changes in a corpus of English-language television news discourse concerning climate change. We show that mentions of the Paris Agreement coincide with discussions of politicians’ climate policies and platforms in simpler, yes-or-no terms.

We analyze discussions of climate on CNN, FOX News, and MSNBC between 2009–20, as well as BBC News for 2017–20. We gather data on these discussions from the Global Database of Events, Language, and Tone (GDELT), which records all televised climate mentions during this period based on the Internet Archive’s Television News Archive.¹⁹ The unit of analysis is

¹⁸*NBC News*, 19 Jul 2021, [rb.gy/clac9](https://www.nbc.com/news/politics/2021/07/19/joe-biden-paris-climate-agreement).

¹⁹GDELT identifies 15-second transcript snippets in the Television News Archive that mention “climate change,” “global warming,” “climate crisis,” “greenhouse gas,” “greenhouse gases,” or

the “snippet,” a 15-second transcript clip in which climate is discussed; the data contain about 95,000 such snippets. We code whether each snippet uses binary language in discussing climate change; we measure this according to whether the snippet includes at least one of the following words: “break”, “commit”, “exceed”, “fail”, “goal”, “meet”, “pledge”, “promise”, “short”, “succeed”, “target”, or “track.” Table 1 lists examples of snippets and their codings. Notably, we find substantial increases in climate discussions generally over time; the number of climate-focused snippets increased from 4,980 in 2010 to 14,566 in 2019, suggesting a growing likelihood of news consumers encountering climate information.²⁰

Snippet	Binary?
“... of new diesel and petrol cars by 2040. We have to get rid of petrol and diesel cars from our roads if we are going to make sure not only do we deal with the health problems air pollution causes, but also that we meet our climate change targets .” – <i>BBC News at One</i> (BBC News), 26 Jul 2017	✓
“...to reduce greenhouse gas emissions. There are now three countries on the whole planet that don’t belong. Syria, Nicaragua and us, the United States of America. By making good on his campaign promise to get out of the accord the president signaled to the world the U.S. is no longer interested in being any kind of ...” – <i>The Rachel Maddow Show</i> (MSNBC), 2 Jun 2017	✓
“...security. Oh, gosh. Let’s get to this. On a bigger picture, much grander scale President Obama is pressing the country to do more to fight climate change and to no one’s surprise he apologized for America’s role in global warming or cooling or ...” – <i>The Five</i> (FOX News), 27 Jan 2015	✗
“...that climate change is a hoax. The report says global warming is transforming where and how we live and presents serious challenges to the health and ...” – <i>The Lead with Jake Tapper</i> (CNN), 23 Nov 2018	✗

Table 1: Examples of news snippets discussing climate change. Words indicating binary language are in bold.

Our expectation is that the Paris Agreement will be associated with more discourse that sharply distinguishes between sufficient (compliant) and insufficient (non-compliant) climate policies and platforms. We test this by regressing an indicator for binary language on an indicator for whether a snippet mentions “Paris.” We include show and month-year fixed effects to account for time-invariant differences between television programs in the dataset, as well as broader shifts in how “carbon tax.” See GDELT, 2020, bit.ly/3WexYCC.

²⁰Excluding BBC News, for which data are not available prior to 2017.

climate is discussed over time.

Table 2 reports the estimation results of this model. We find that Paris mentions are associated with greater usage of binary language. Across the full dataset, discussion of Paris is associated with a ten-point increase in the probability of binary language being used; substantively and statistically significant increases are apparent across news channels. Importantly, these results are not an artifact of the specific terms used to indicate binary language; they remain consistent across thousands of alternative dictionaries of binary climate terminology (Appendix 2).

	Pr(Binary Language Used = 1)				
	All	CNN	MSNBC	FOX News	BBC News
“Paris” mention	0.099*** (0.011)	0.100*** (0.018)	0.077*** (0.019)	0.043** (0.019)	0.146*** (0.011)
N	94,858	19,304	26,429	25,865	23,260
Adjusted R ²	0.032	0.026	0.022	0.018	0.021
Show FE	✓	✓	✓	✓	✓
Month-Year FE	✓	✓	✓	✓	✓
***p < .01; **p < .05; *p < .1					

Table 2: Regressions of an indicator for binary language on a dummy variable indicating a mention of “Paris” in the same transcript snippet. Models estimated by ordinary least squares with show and month-year fixed effects and robust standard errors clustered by show.

Complementing this dictionary-based approach, we perform structural topic modeling of these television news data to determine if an unsupervised model detects similar increases in binary language. We tune the model to six topics and find consistent evidence.²¹ The results, illustrated in Figure 1, show that the proportion of text involving binary language increases by around twenty percentage points when “Paris” is mentioned; for example, one snippet in this topic describes how the U.S. will “meet the goals of the Paris climate change accord even after President Trump withdrew from the pact.” Appendix 3 lists all topics and representative responses for each.

²¹Appendix 3 contains diagnostic plots and details about pre-processing.

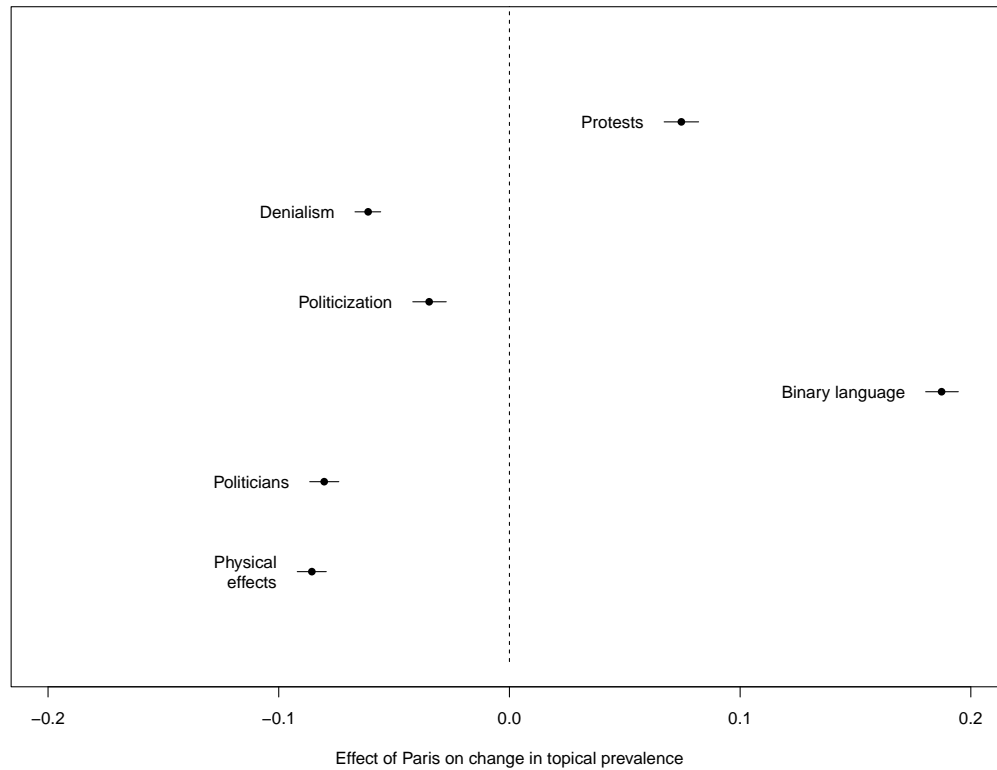


Figure 1: Substantively, the effect size corresponds to the change in the proportion of the text relevant to a given topic when “Paris” is mentioned. The plot depicts 90 percent confidence intervals.

Experiment 1: Vote Choice

We conducted a candidate choice conjoint experiment in November and December 2022. We embedded this experiment in an online survey implemented by Qualtrics, which recruited a diverse sample of 2,013 U.S. adults; our quotas were representative of the national population along the dimensions of age, gender, and region of residence (see Appendix 5 for descriptive statistics). Qualtrics is recognized as a high-quality source of public opinion samples for social science work (Boas, Christenson, and Glick 2020). Subjects read a brief description of a hypothetical scenario at the beginning of the experimental module, in which the U.S. pledged at an international conference in 2025 to reduce emissions by 65 percent by 2035 relative to 2005. Subjects were then told they would be evaluating hypothetical candidates for the U.S. presidency in 2028.

The survey subsequently presented subjects with ten conjoint tasks.²² Each task asked subjects to choose between two unnamed candidates who randomly varied along twelve political and demographic dimensions, which themselves were presented in random order.²³ The forced-choice question permits estimation of average marginal component effects (AMCEs): the marginal effect of adjusting one candidate attribute, relative to some baseline, on subject vote choice. The conjoint design is therefore appealing in that it permits estimates of how changes in a feature, such as a politician’s age or tax platform, affects vote choice when presented alongside a battery of other attributes (Hainmueller, Hopkins, and Yamamoto 2014; Bansak, Hainmueller, Hopkins et al. 2022). This approach appreciates the multidimensional nature of voter preferences — individuals may form beliefs about candidates on the basis on multiple characteristics — as well as the bundled character of candidate profiles and platforms.

The party affiliation of each candidate was randomized, which naturally generated general and primary election matchups (two candidates from different parties or two from the same party). Each candidate profile listed their position on the climate pledge. Recent work indicates that leaders can effectively reframe noncompliance with international law to avert disapproval (Morse and Pratt 2022); we accordingly paired these positions with a brief justification. Some candidates promised to “reduce emissions to meet U.S. pledge under Paris Agreement and avert the worst effects of climate change.” Others said they would “not meet U.S. emissions reduction pledge under Paris Agreement to keep costs of fossil fuel energy low.”²⁴ This wording matches the binary

²²Bansak, Hainmueller, Hopkins et al. 2018 find that subjects are comfortably able to perform ten conjoint tasks. However, as a robustness check, we re-estimate the model focusing only on the first task each subject faced (Appendix 6).

²³We opt for the year 2028 to avoid conflation of Democratic candidates with Joe Biden and Republican candidates with Donald Trump. This future scenario also matches the setting of the vignette experiment that follows.

²⁴While including the justification may introduce a compound treatment effect, this language is faithful to how politicians take and defend positions on climate policy in practice. Additionally,

framing through which information on climate performance vis-à-vis international agreements is often presented (see above media analysis). Like other candidate choice conjoint experiments, the profiles also listed each candidate's position on healthcare, taxation, and immigration, as well as their age, gender, ethnicity and race, sexual orientation, profession, political experience, and military service (Bansak, Hainmueller, Hopkins et al. 2021).²⁵

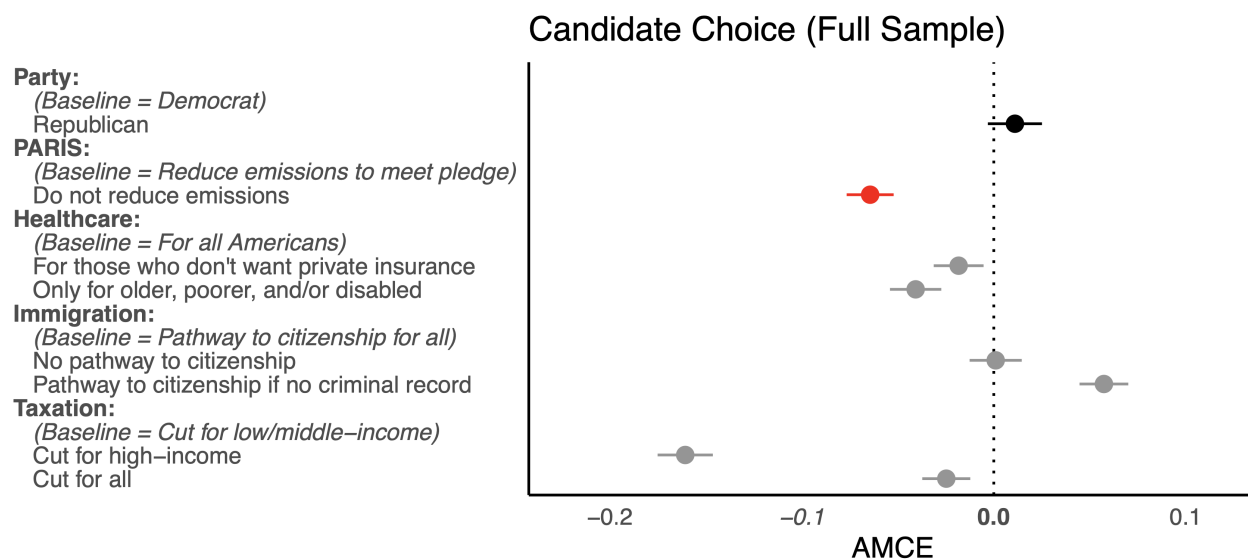


Figure 2: Average marginal component effects for all subjects across all candidate choice tasks. 95% confidence intervals plotted according to standard errors clustered by subject. Estimates based on 40,260 profiles seen by 2,013 subjects. Estimates for all attributes in Appendix 7.

Figure 2 displays top-line AMCEs. Consistent with our first hypothesis, intended deviation from Paris causes a six percentage point loss in expected vote share across the full sample, an effect exceeded in magnitude only by the loss of support resulting from a pledge to reduce taxes only for high-income Americans (−16 points, relative to cutting taxes for the low and middle income Americans).²⁶ We obtain very similar results in the vignette experiment (in terms of approval costs), where the treatment language does not include a justification.

²⁵We do not restrict any of the attributes in the conjoint. In line with best practices (Hainmueller, Hopkins, and Yamamoto 2014), we selected attributes and candidate positions that are plausible for candidates from either major party. We acknowledge that some candidate positions and attributes are more common in one party than the other.

classes).²⁶ This effect magnitude also exceeds that of candidate positions on healthcare and immigration. Overall, respondents voted for candidates who pledged to meet the U.S. Paris target 53 percent of the time and for those prioritizing lower fossil fuel prices 47 percent of the time. This finding is robust to correcting for the measurement error present in conjoint experiments (Clayton, Horiuchi, Kaufman et al. 2023).²⁷ These results are striking given prior conjoint studies that have not found environmental policy to be a major predictor of candidate choice (Hainmueller, Hopkins, and Yamamoto 2014; Bansak, Hainmueller, Hopkins et al. 2022). These other studies present climate policies without mention of international commitments; the strength of our findings suggest that adhering to climate pledges may carry some importance beyond general preferences for green policy, a possibility we evaluate in Experiment 3 below.

As an exploratory test, Figure 3 disaggregates results by subjects' party identification. Clear differences emerge between Democratic and Republican subjects. Among Democrats, the estimated vote share for candidates who rejected Paris was 13 percentage points lower than for those who embraced it. Democrats voted for candidates who prioritized lower fossil fuel prices over the Paris target in 43 percent of contests. In contrast, candidates who rejected Paris received a slight advantage among Republicans, winning their vote in 51 percent of cases. These results in-

²⁶AMCEs can be interpreted as the expected change in vote share for a given candidate (Bansak, Hainmueller, Hopkins et al. 2022), though they should not be taken as indicative of majority preferences (Abramson, Kocak, and Magazinnik 2022).

²⁷Clayton, Horiuchi, Kaufman et al. 2023 find that conjoint experiments can involve nontrivial measurement error due to unreliable subjects; correcting for this generally yields larger effect sizes. Following their recommendation, we assume that 25% of subjects in our study are unreliable (i.e., would respond to the same conjoint task differently within the course of the same survey). Accounting for this estimated unreliability rate, we recalculate the Paris AMCE ("Do not reduce emissions") as -0.129 with a 95% confidence intervals of $[-0.158, -0.099]$. We estimate the measurement error-corrected standard errors via the bootstrapping technique proposed by Clayton et al. (drawing 1,000 random samples of 1,000 subjects).

dicade that Democrats are especially sensitive to candidate positions on Paris targets; the average magnitude of changes in Republican voting behavior were smaller in comparison.²⁸

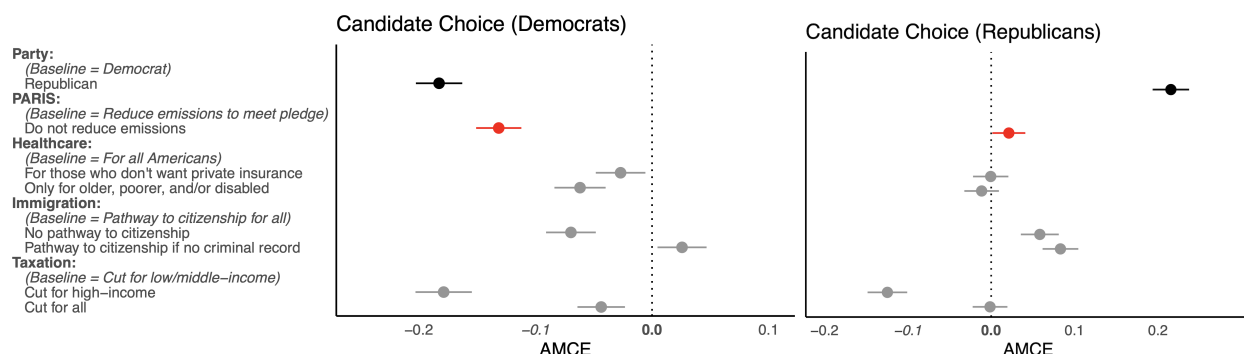


Figure 3: Average marginal component effects for self-identified Democrats (left) and Republicans (right) across all candidate choice tasks. 95% confidence intervals plotted according to standard errors clustered by subject. Estimates based on 14,060 profiles seen by 703 subjects (Democrats) and 13,460 profiles seen by 673 subjects (Republicans). Estimates for all attributes in Appendix 8.

We next examine how Democratic and Republican voting intentions vary between general and primary elections. Party primaries serve an important function in candidate selection in American politics (Hirano and Snyder 2014), particularly given “calcification” of voting behavior in general elections along partisan lines (Sides, Tausanovitch, and Vavreck 2022). Results presented in Appendix 9 indicate, as expected, that candidate party is the strongest determinant of vote choice in general elections: Democrats vote for fellow Democrats in 67 percent of cases and Republicans for fellow Republicans in 70 percent. Support among Democrats diminishes somewhat if the Democratic candidate rejects Paris, but Democrats nonetheless vote for their party’s candidate in 60 percent of cases. Among Republicans, support for the Republican candidate does not meaningfully vary with their position on the U.S. climate pledge.

Differences emerge in hypothetical primaries, particularly among Democrats (Appendix 9).²⁹ For Democrats, positions on climate pledges powerfully separate candidates. We estimate that

²⁸These results are robust to accounting for measurement error (Clayton, Horiuchi, Kaufman et al. 2023). We estimate the error-corrected Paris AMCE for Democrats as -0.263 with a 95% confidence interval of $[-0.284, -0.242]$. For Republicans, we estimate the error-corrected Paris AMCE for Republicans as $+0.042$ with a 95% confidence interval of $[+0.021, +0.063]$.

²⁹In these analyses, we assume that primaries are closed: only Democrats (Republicans) vote in

candidates in Democratic primaries who express opposition to Paris targets would see their vote shares decline by 14 percentage points compared to those who promise to abide by the agreement. For Republicans, by contrast, there is little evidence of vote switching according to candidates' positions on climate pledges (AMCE $p = 0.15$). These results align with scholarship finding that Democrats and Republicans respond asymmetrically to climate cues (Hazlett and Mildemberger 2020; Hai and Perlman 2022).

While Democrats typically favor climate action, there is significant heterogeneity in Democratic candidates' aggressiveness on this dimension. Democratic congressional candidates in more conservative or swing districts have strongly opposed initiatives like the Green New Deal. Joe Manchin, for example, fought against the Green New Deal and recently called for the landmark Inflation Reduction Act to be repealed because it has insufficiently safeguarded fossil fuel investments in West Virginia.³⁰ Decarbonization will further threaten jobs in regions like the Midwest and South, which could exacerbate within-party divisions on climate and increase the electoral weight of candidates' climate policies in Democratic primaries.

Experiment 2: Leader Approval and National Reputation

We conducted a vignette experiment in April 2022. We recruited 1,232 U.S. adults via the online platform Prolific, which supplies samples with better quality and similar diversity to Amazon's Mechanical Turk (Peer, Brandimarte, Samat et al. 2017; Palan and Schitter 2018). We collected a variety of pre-treatment demographic and attitudinal information about our subjects, including age, education, income, race, and partisanship. Table A5 lists descriptive statistics for this sample.³¹ The remaining sample is balanced along demographic and attitudinal lines.

Democratic (Republican) primaries.

³⁰*NBC News*, 25 April 2023, <https://bit.ly/3WqgRzB>

³¹We exclude subjects who failed two attention checks (19.8% of original sample). We asked subjects to name the correct color (after a prompt that told them which color to choose) and whether they agreed or disagreed with the statement, "I swim across the Atlantic Ocean to get to work."

The experiment follows a two-by-two factorial design with treatment assignment randomized by individual. Subjects were asked to evaluate a hypothetical future scenario, set in 2025, in which the U.S. pledged to reduce emissions by 65 percent over the next decade.³² Subjects then received two pieces of information, which comprise each treatment arm: first, whether “President Smith,” the hypothetical American leader elected after this pledge was made, had enacted policies to ensure that the U.S. would meet its target according to independent climate monitors; and second, whether other major emitters including China and Europe were on track to meet their own commitments, again according to independent climate monitors. Below is an example of a randomized vignette:

We are going to describe a situation the United States could face in the future. Some parts of the description may seem important to you; other parts may seem unimportant. This situation is hypothetical.

In 2025, the U.S. pledged at an international conference to reduce greenhouse gas emissions by 65% by 2035. President Smith, elected after this pledge was made, has since enacted policies that prevent the U.S. from meeting this target, according to independent monitors.

Other big emitters, like China and Europe, also committed to reduce emissions by 2035. Independent monitors say that these countries will meet their commitments.

Subjects then answered questions designed to assess reactions to the vignette. The primary outcome question asked respondents to indicate their approval of the way that President Smith handled the situation. To better understand the sources of public (dis)approval of the president, we also asked whether respondents saw President Smith’s actions as damaging to the international reputation of the U.S. Response options for these questions were structured as five-point scales ranging from strongly disapprove (disagree) to strongly approve (agree); we convert them to 0–1 scales here for ease of interpretation.

We first estimate the difference in mean approval between subjects who received information that the U.S. was versus was not on track to meet its commitments. The results offer strong support for our first hypothesis: approval is 0.45 points higher when the president is on track to meet U.S.

³²This design aligns with best practices for vignette-based surveys in its abstraction (Brutger, Kertzer, Renshon et al. 2022).

climate commitments ($p = 0.000$). We similarly find evidence that reputational concerns drive these changes in approval. The perception that the president hurt U.S. reputation is 0.48 points higher when the U.S. is not on track to meet its commitments ($p = 0.000$). Appendix 11 reports bootstrapped treatment effects for each hypothesis. Both sets of results suggest that audience costs may bind leaders when they issue or inherit climate pledges.

We next test whether approval varies with the behavior of other states. Per our second hypothesis, we anticipate that approval will be lowest when the leader backs down and other states remain on pace to meet their climate targets. Table 3 reports results that are in line with this intuition. Holding U.S. behavior constant at “Renegade,” approval is significantly lower when other countries comply than when they renege (-0.05 points, $p = 0.033$). Subjects are similarly more likely to believe that U.S. reputation has suffered when the president reneges and other states comply versus when other states also renege ($+0.12$ points, where higher values indicated greater perceived reputational damage; $p = 0.000$).

Furthermore, we find that approval is always highest, and perceived reputational damage is always lowest, when the U.S. meets its targets, *regardless* of peers’ behavior. Mean approval is 0.49 points higher when the U.S. abides by versus reneges on the pledge ($p = 0.000$) while others comply and 0.42 points higher when the U.S. abides by versus reneges on the pledge while others renege ($p = 0.000$). Yet approval of a compliant president does not meaningfully decline when other countries renege ($p = 0.439$). We observe a nearly identical pattern for reputation, wherein respondents perceive far more reputational damage when the U.S. backs away from versus adheres to its pledge while peers comply ($+0.54$ points, $p = 0.000$) and when the U.S. backs away from versus adheres to its pledge while peers renege ($+0.41$ points, $p = 0.000$). However, so long as the president sticks with the commitment, perceptions of reputational damage do not change substantially as a function of what peers do ($p = 0.465$).

We then model these tests in a regression framework, controlling for subject age, income, education, partisanship, and prior beliefs about climate change. We might expect Democrats, younger respondents, highly educated individuals, and those who believe that climate change is

United States	Peers	Outcome: Approval	Outcome: Reputation
Comply	Comply	0.741	0.193
Reneg	Comply	0.251	0.737
Comply	Reneg	0.724	0.208
Reneg	Reneg	0.305	0.621

Table 3: Mean responses by treatment condition. *Approval* indicates subject approval of the president (0–1, increasing in approval). *Reputation* indicates extent to which subjects see president’s actions as damaging the international reputation of the U.S. (0–1, increasing in perceived reputational damage).

caused by human activity to more harshly punish a president who fails to meet climate pledges. Accounting for respondent attitudes about climate change is especially important as we argue that adherence to climate pledges matters above and beyond individuals’ climate attentiveness. Regression results are in line with expectations. Across the models in Table 4, U.S. failures to keep up with the commitment undermine support for the sitting president by 0.42–0.45 points. Interaction results (models 3–4) suggest that this disapproval mounts by roughly 0.07 when peer countries remain on track to meet their own targets.

	Approval			
	Model 1	Model 2	Model 3	Model 4
U.S. reneges	−0.453*** (0.017)	−0.455*** (0.017)	−0.419*** (0.023)	−0.421*** (0.024)
Others comply			0.017 (0.023)	0.014 (0.023)
U.S. reneges × others comply			−0.071** (0.034)	−0.071** (0.034)
Constant	0.733*** (0.012)	0.673*** (0.045)	0.724*** (0.016)	0.664*** (0.046)
N	1232	1198	1232	1198
Adj. R-squared	0.371	0.387	0.373	0.388
Controls		✓		✓

*** $p < .01$; ** $p < .05$; * $p < .1$

Table 4: Regressions of approval of the president on U.S. compliance with its climate pledge, interacted in certain models with peers’ compliance with their own targets. Estimated by ordinary least squares. Robust standard errors parenthesized. Models 2 and 4 control for subject age, income, educational attainment, party identification, and belief that global warming is caused by human activity. Outcomes measured on 0–1 scales.

In parallel with the exploratory analysis presented for the conjoint experiment, we further examine whether the identified treatment effects in the vignette experiment vary by partisan identification. Table 5 reports these subgroup results. We find consistent evidence of approval costs

across subgroups, though the effect is largest among Democrats. These results are notable in their indication that even voters hesitant to embrace climate action, such as Republicans, appear sensitive to abandonment of pledges. We find little evidence that the behavior of peer countries affects disapproval for Democrats or Republicans; the interactive effect is only present for independents.

	Democrats		Republicans		Independents	
	Approval	Reputation	Approval	Reputation	Approval	Reputation
U.S. reneges	−0.563*** (0.030)	0.523*** (0.031)	−0.127** (0.062)	0.176*** (0.063)	−0.325*** (0.039)	0.349*** (0.036)
Others comply	0.048 (0.030)	−0.036 (0.030)	0.004 (0.060)	−0.015 (0.061)	0.003 (0.039)	−0.001 (0.036)
U.S. reneges × others comply	−0.051 (0.044)	0.112** (0.045)	−0.025 (0.087)	0.062 (0.087)	−0.144*** (0.055)	0.205*** (0.052)
Constant	0.800*** (0.021)	0.163*** (0.021)	0.523*** (0.045)	0.360*** (0.045)	0.688*** (0.027)	0.216*** (0.025)
N	609	609	188	188	435	435
Adj. R-squared	0.538	0.523	0.038	0.097	0.332	0.436

***p < .01; **p < .05; *p < .1

Table 5: Regressions of the approval and reputation outcomes on treatment conditions, by subjects' party identification. Robust standard errors parenthesized. Outcomes measured on 0–1 scales.

Tests of reputation costs also support our argument. Democrats, Republican, and independents on average see a failure to abide by climate commitments as damaging to the reputation of the U.S., a key indicator that audience costs are operative (Tomz 2007a; Brutger and Kertzer 2018). These results offer support for the audience costs mechanism independent of alternative drivers of support for climate pledges, such as respondents' general concern about climate change. We do not find, however, that other countries' behavior consistently magnifies reputational costs; only independents see reputational damage as mounting when peers abide by their own targets. This may be because independents hold less polarized beliefs than partisans about climate issues, with weaker priors due to the receipt of fewer partisan cues (Chaudoin 2014; Casler and Groves 2023).

Experiment 3: Preference for Compliance vs. Preference for Climate Action

We fielded a third experiment on a diverse sample of about 2,000 Americans in April 2024 via Qualtrics.³³ The purpose of this third experiment is to identify whether there is something unique about meeting international climate commitments when compared to a leader’s other positions on climate — in other words, whether subjects reward compliance with climate pledges when holding constant the general strength of a leader’s climate policies.

The experiment provides respondents with a news-style vignette. Subjects receive either a control vignette that describes a hypothetical president’s policies as generally pro-climate, or a treatment vignette that describes a hypothetical president’s policies as generally pro-climate *and* likely to help the U.S. achieve its climate goals. The control condition reads, “In 2025, the U.S. promised to cut its greenhouse gas emissions in half by 2030 compared to 2005 levels at an international conference. President Smith, elected after this pledge was made, has since enacted policies which gave more support and tax benefits for electric vehicles, wind turbines, solar panels, and other renewable energy sources.” The treatment condition includes this same text, but adds the following information on pledge compliance: “Independent monitors suggest that these policies make it much more likely that the U.S. will achieve its emissions reduction goal.”

	Approval	Reputation	Confidence President is Doing Enough
ATE	0.037*** (0.012)	−0.027** (0.012)	0.046*** (0.012)
Control mean	0.546*** (0.009)	0.436*** (0.009)	0.504*** (0.008)
N	2010	2010	2010
Adj. R-squared	0.004	0.002	0.007
***p < .01; **p < .05; *p < .1			

Table 6: Average treatment effects estimated by OLS with robust standard errors. Outcomes measured on 0–1 scales.

Table 6 presents the experimental results, which are consistent with the theory. Holding constant the strength of a hypothetical president’s climate policies, we find that information indicating

³³As in experiment 1, the sample meets census benchmarks for age, gender, and region.

compliance with an international pledge boosts public approval of the president, reduces perceptions that the president has damaged the reputation of the U.S., and increases confidence that the president is doing enough to meet the emissions reduction pledge. We additionally find that the treatment increases subjects' beliefs that they have "enough information to determine whether the U.S. will meet its emissions reduction goal."³⁴

That we identify these treatment effects conditional on providing information on pro-climate policies is notable, underscoring the independent importance of climate pledges. This serves as reassurance that the results found in Experiment 1 and Experiment 2 do not conflate the effects of pledge (non)compliance with the effects of general climate (in)action. Even for a politician advocating for ambitious climate policies, information that those policies are consistent with international climate pledges appears to meaningfully augment public support.

Conclusion

The global climate regime rests on pledges made by states in the absence of formal enforcement mechanisms. Canonical theories of international cooperation illustrate states' incentives to defect from such commitments, as well as limits to the power of naming and shaming to induce compliance. We explore one mechanism by which states may nonetheless face pressure to adhere to their pledges: audience costs levied by domestic electorates. Through a series of survey experiments, we find that many Americans sanction politicians for backing down from climate targets, even when holding constant the general strength of a leader's climate policies, preferring those who prioritize meeting these pledges over those who sacrifice them in pursuit of lower energy prices. Whether a candidate intends to uphold U.S. climate pledges appears to be a powerful predictor of vote choice among Americans, particularly for Democrats. Results indicate that disapproval of policies inconsistent with pledges and concern for the global reputation of the U.S. underlie

³⁴ATE = 0.071*** (robust s.e. = 0.016), control mean = 0.320*** (robust s.e. = 0.011); estimated by OLS.

these voting behaviors. We also find some evidence that other countries' behavior conditions how the public views their own government: some voters are more likely to punish defection when other countries abide by their own climate targets. Analyses of news media support our contention that Paris pledges have simplified popular climate discourse, allowing voters to better distinguish between climate platforms and sanction non-compliant politicians.

These findings suggest several avenues for future work. First, we encourage scholars to examine whether audience costs shape the prospects for climate action in autocracies, including in major emitters such as China. We expect our findings generalize to other developed democracies. While there is some evidence of audience costs in autocracies, particularly among elites (Weeks 2008; Weiss 2013), they may not emerge for climate (Bättig and Bernauer 2009; though see Alkon and Wang 2018). Second, we encourage scholars of audience costs and public opinion of international agreements to incorporate analyses of candidate choice to better understand when attitudinal shifts translate into meaningful behavioral changes. While the audience costs framework appears increasingly applicable outside of its original international security context, we still have a limited sense about whether unfulfilled foreign policy threats and promises cost leaders outside of short-term drops in approval. More nuanced survey experiments are needed to further probe the mechanisms at work. Third, scholars might investigate what these attitudinal findings portend for elite political strategy. Do candidates for elected office, particularly those on the left, adjust their climate platforms in response to voters' support for abiding by climate pledges?

The effects identified in this paper are promising for the future of climate cooperation and the longevity of the Paris framework. Voters appear willing to punish leaders who fail to meet climate pledges, irrespective of whether politicians are named and shamed for this behavior. These results suggest that voters may care about foreign policy to an extent that existing literature overlooks (Guisinger 2009; Guisinger and Saunders 2017; Rho and Tomz 2017). They also highlight the importance of the work being done by NGOs and advocacy groups to frame climate policy outcomes as on track or not;³⁵ such frames can be effective in mobilizing public support.

³⁵See e.g., the Centre for Biological Diversity's messaging on the insufficiency of climate action

On the one hand, Democrats are evidently willing to vote on climate issues, which may induce more action from Democratic politicians. On the other hand, framing appears to shape how Republicans evaluate candidates' climate policies. In the conjoint experiment (Experiment 1), when given the choice between a candidate who would meet the U.S. emissions target to avert the worst effects of climate change versus one who would prioritize keeping energy prices low, Republicans narrowly favored the latter. In the vignette experiment (Experiment 2), when adherence to Paris was instead framed as a public commitment that the president could meet or back down from, Republicans punished anti-Paris politicians and saw significant reputational costs to reneging. As low-carbon energy becomes more competitive, the tradeoff between energy prices and climate action may become less severe; this may render relatively more salient the reputational implications of climate inaction, providing Republican candidates with some space to offer Paris-aligned policies. While collective action problems and interest group lobbying have hamstrung climate action to date (Aklin and Mildenberger 2020; Kennard and Schnakenberg 2023), our findings suggest some electoral reason for optimism about the self-enforcing nature of Paris commitments.

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Supplemental Appendix for Do Pledges Bind? The Mass Politics of International Climate Targets

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*Casler is an Assistant Professor of Political Science, University of Illinois Urbana-Champaign (dcasler@illinois.edu). Clark is an Assistant Professor of Political Science, University of Notre Dame (richard.clark@nd.edu). Zucker is an Assistant Professor of International Relations, London School of Economics (n.zucker@lse.ac.uk). We thank Sabrina Arias, Stephen Chaudoin, Jeff Colgan, Christina Davis, and Julia Morse for helpful comments and the Columbia Experimental Laboratory for Social Sciences, Columbia Center for Science and Society, and Cornell Atkinson Center for Sustainability for financial support. We also thank Duy Trinh for technical assistance. This paper received valuable feedback at the 2022 American Political Science Association Annual Meeting and 2023 Political Economy of International Organization Annual Conference. It was approved by the institutional review boards of Brown (#2022003456), Columbia (#AAAU1367), Cornell (#0147008), and LSE (#330077).

Contents

1	Paris Discussions in 2020 Democratic Primary Debates	1
2	Alternative Dictionaries for Media Discourse Test	4
3	Structural Topic Models	5
4	Experiments 1–3: Survey Instruments	7
4.1	Demographic and Attitudinal Questions	7
4.2	Experiment 1: Vote Choice	9
4.3	Experiment 2: Leader Approval and National Reputation	11
4.4	Experiment 3: Preference for Compliance vs. Preference for Climate Action	13
5	Experiment 1: Descriptive Statistics	15
6	Experiment 1: Conjoint Results Limited to First Tasks	16
7	Experiment 1: Full Conjoint Results	17
8	Experiment 1: Full Conjoint Results by Party ID	18
9	Experiment 1: Conjoint Results by Primary vs. General Election	19
10	Experiment 2: Descriptive Statistics	20
11	Experiment 2: Bootstrapped Results	21
12	Experiment 3: Descriptive Statistics	22
13	Preregistration	23

1 Paris Discussions in 2020 Democratic Primary Debates

Candidate	Date	Quote
Julian Castro	26 Jun 2019	“And if I’m elected president, the first thing that I would do, like Senator Klobuchar also has said, is sign an executive order recommitting us to the Paris Climate Accord so that we lead again...”
Kamala Harris	27 Jun 2019	“And on this issue it is a—it is a critical issue that is about what we must do to confront what is immediate and before us right now. That is why I support a Green New Deal. It is why I believe on day one and as President will re-enter us in the Paris agreement because we have to take these issues seriously...”
Joe Biden	27 Jun 2019	“And new science and technology to be the exporter not only of the green economy, but economy that can create millions of jobs. But, I would immediately rejoin the Paris Climate Accord. I would up the ante in that accord, which it calls for because we make up 15 percent of the problem; 85 percent of the world makes up the rest. And so, we have to have someone who knows how to corral the rest of the world, bring them together, and get something done like we did in our administrator [sic].”
Joe Biden	31 Jul 2019	“There is no middle ground about my plan. The fact of the matter is I call for the immediate action to be taken. First of all, one of the things that - we’re responsible for 15 percent of all the pollution in the country. He’s right about how it affects people and it affects neighborhoods, particularly poor neighborhoods. But here’s the deal; in area, there’s also another piece. Eighty-five percent of it is something I helped negotiate; and that is the Paris Climate Accord. I would immediately rejoin that Paris Accord. I would make sure that we up the ante which it calls for. I would be able to bring those leaders together who I know I - I convene (ph) them in the White House, like we did in nuclear summit, and I would raise the standard.”
Kamala Harris	31 Jul 2019	“...I would re-enter us in the Paris agreement”
Kirsten Gillibrand	31 Jul 2019	“The second thing I’m going to do is I will reengage on global climate change. And I will not only sign the Paris global climate accords, but I will lead a worldwide conversation about the urgency of this crisis.”
Corey Booker	31 Jul 2019	“Science didn’t become a reality yesterday. This has been going on for years. There was another president that would not join an international accord. Then it was the Kyoto accords. I was mayor then. And I stood up in national leadership joining with other mayors to say climate change is not a separate issue. It must be the issue and the lens with which we view every issue. Nobody should get applause for rejoining the Paris climate accords. That is kindergarten. We have to go to far advances and make sure that everything from our trade deals, everything from the billions of dollars we spend to foreign aid, everything must be sublimated to the challenge and the crisis that is existential, which is dealing with the climate threat.”
Corey Booker	12 Sep 19	“From trade to battling China to the global crisis of climate change, the challenges in the Middle East, he [Trump] is pulling us away from our allies, out of the Iran deal, out of the Paris climate accords.”

Table A1: Mentions of Paris Agreement in 2020 Democratic presidential debates, part I.

Candidate	Date	Quote
Kamala Harris	20 Nov 19	“And to do it in a way that understands that part of the strength of who we are as a nation – and therefore, an extension of our ability to be secure – is not only that we have a vibrant military, but that when we walk in any room around the globe, we are respected because we keep to our word, we are consistent, we speak truth, and we are loyal. What Donald Trump has done from pulling out of the Paris agreement to pulling out of the Iran nuclear deal to consistently turning a back on people who have stood with us in difficult times...”
Bernie Sanders	19 Dec 2019	“The issue, as you should know, what the scientists are telling us is they have underestimated the threat and severity of climate change. You’re talking about the Paris agreement, that’s fine. Ain’t enough. We have got to – and I’ve introduced legislation to do this – declare a national emergency. The United States has got to lead the world. And maybe, just maybe, instead of spending \$1.8 trillion a year globally on weapons of destruction, maybe an American president, i.e. Bernie Sanders, can lead the world, instead of spending money to kill each other, maybe we pool our resources and fight our common enemy, which is climate change.”
Pete Buttigieg	14 Jan 2020	“The question is, how are we going to make sure any of this actually gets done? Because people have been saying the right things in these debates for literally decades. The other day in Winterset, there was a kid at one of my events, raised his hand and he pointed out that he expects to be here in his 90s in the year 2100. He will sit in judgment over what we do, not just what we on this stage do, anyone old enough to vote right now, whether we actually put together the national project it will require to meet our climate goals, to act aggressively, not just re-joining the Paris Climate Accord, that’s table stakes, but to actually move on from the fossil-dependent economy we live in today.”
Joe Biden	7 Feb 2020	“I was also part of the deal putting together the Paris Climate Accord. I brought in the Chinese. I was part of that. I’ve been part of every major initiative we’ve had relative to diplomacy. I have not argued for the placement of major numbers of US combat troops. I have said, along with the President of the United States, Barack Obama as his partner, I have said, we have to strengthen NATO to make it clear that we keep our commitments when we make them. Like we don’t keep our commitments to the Kurds. We must keep our commitments when we make them. Otherwise, we have no power whatsoever.”
Michael Bloomberg	19 Feb 2020	“But let’s just start at the beginning. If you’re president, the first thing you do the first day is you rejoin the Paris Agreement. This is just ridiculous for us to drop out. Two, America’s responsibility is to be the leader in the world. And if we don’t, we’re the ones that are going to get hurt just as much as anybody else.”
Joe Biden	19 Feb 2020	“Here’s the last point I want to make to you. On day one, when I’m elected president, I’m going to invite all of the members of the Paris Accord to Washington, D.C. They make up 85 percent of the problem. They know me. I’m used to dealing with international relations. I will get them to up the ante in a big way.”

Table A2: Mentions of Paris Agreement in 2020 Democratic presidential debates, part II.

Candidate	Date	Quote
Joe Biden	25 Feb 2020	“And I spent more time with Xi Jinping than any world leader had by the time we left office. This is a guy who is – doesn’t have a democratic, with a small D, bone in his body. This is a guy who is a thug, who in fact has a million Uighurs in “reconstruction camps,” meaning concentration camps. This is a guy who you see what’s happening right now in – in Hong Kong, and this is a guy who I was able to convince should join the international agreement at the Paris agreement because, guess what, they need to be involved. You can cooperate and you can also dictate exactly what they are, when in fact they said “We’re going to set up a no-fly zone, that you can’t fly through our zone. He said, “What do you expect me to do,” when I was over there. I said, “We’re going to fly right through it. We flew B-1 bombers through it. We’ve got to make it clear. They must play by the rules...”
Joe Biden	15 Mar 2020	“In addition to that, we also have to – I would immediately rejoin the Paris Climate Accord, which I helped put together. I would call the 100 nations – over 100 nations, but the 100 major polluters to the United States in the first 100 days to up the ante and make it clear that, in fact, we would – in fact, if they didn’t, there would be a price to pay.”
Bernie Sanders	15 Mar 2020	“We have to act dramatically, boldly, if we’re going to save lives in this country and around the world. I look at climate change in exactly the same way. It’s not a question of re-entering the Paris Accord. That’s fine. Who cares. Not a big deal. The deal right now is do we have the courage? And this gets back to the point I’m trying to make all night long.”
Joe Biden	15 Mar 2020	“Number two, we’re in a situation, as well, where we cannot – we – we are able to move rapidly to change the dynamic in terms of what we can do to set in motion – the fact that he says climate change, Paris Accord doesn’t mean much – we can get everything exactly right. We’re 15 percent of the problem. Eight-five percent of the problem is over there. We need someone who can deal internationally. We need someone who can bring the world together again. We need someone who can move in a direction that, in fact, if you violate the commitment you make, you will pay an economic price for it, like what’s happening in China. They’re exporting coal, significant coal.”
Bernie Sanders	15 Mar 2020	“OK, look, obviously, the Paris Accord is – is useful. But it doesn’t go anywhere – if you’re laughing, Joe, then you’re missing the point. This is an existential crisis.”

Table A3: Mentions of Paris Agreement in 2020 Democratic presidential debates, part III.

2 Alternative Dictionaries for Media Discourse Test

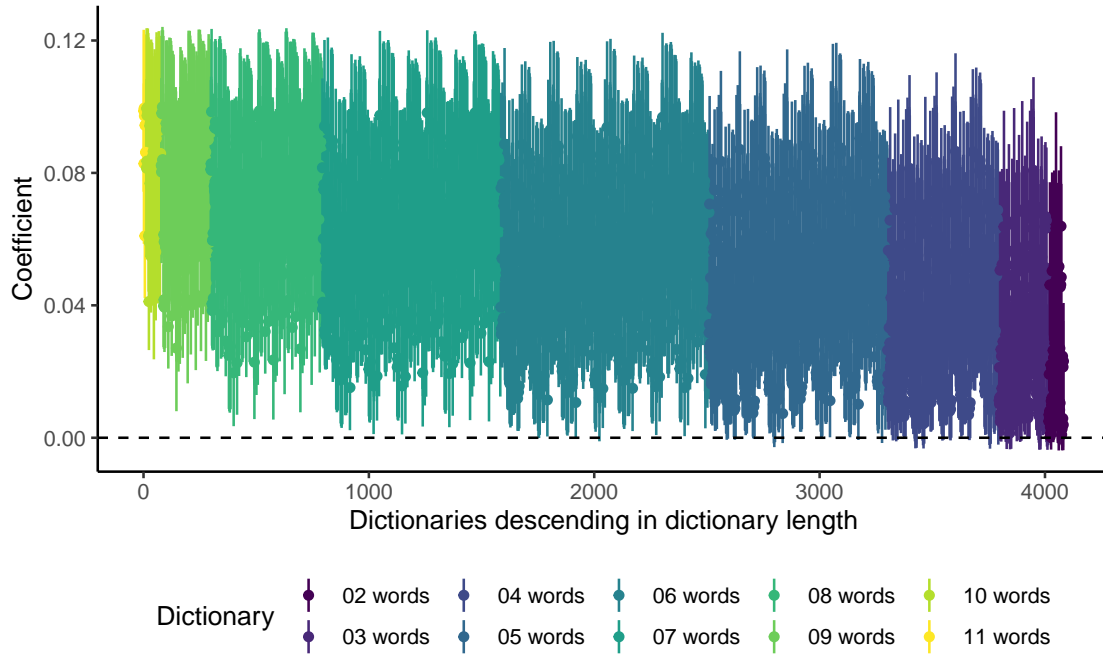


Figure A1: Replications of media discourse regressions with alternative dictionaries. Each replication uses a unique subset, ranging from two to eleven words, of the original 12-word dictionary indicating binary language. Other regression specifications remain the same. Coefficients on the "Paris" mention indicator are plotted with 95% confidence intervals.

3 Structural Topic Models

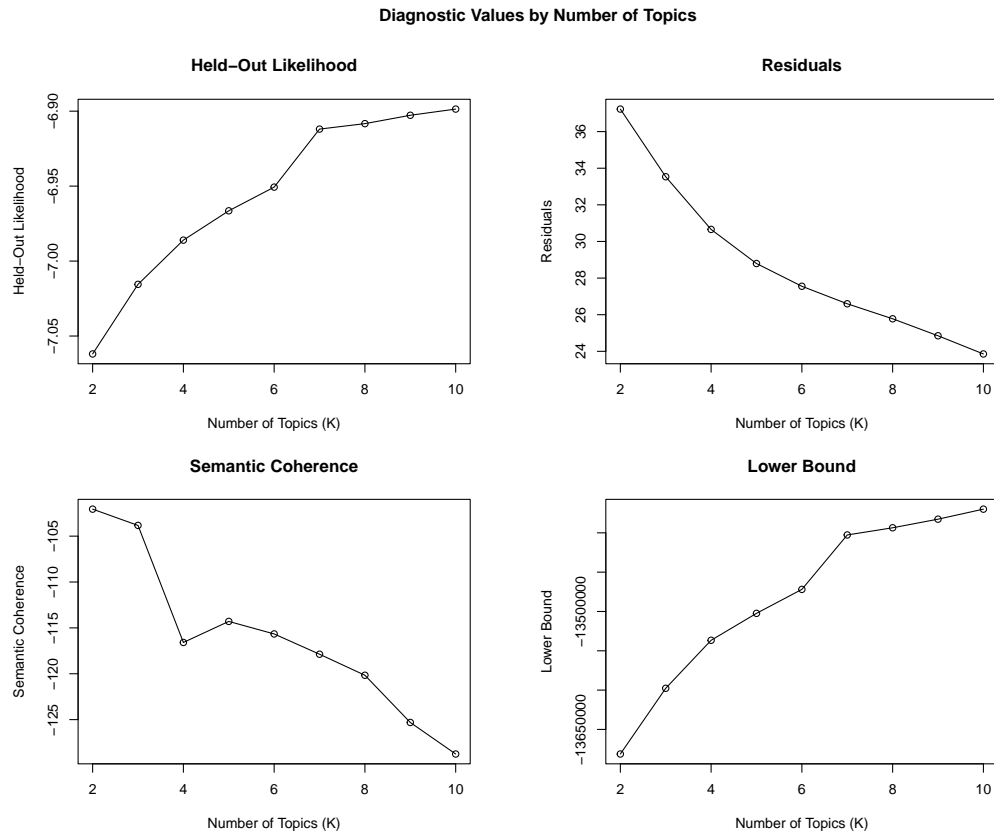


Figure A2: Diagnostic plots for the structural topic modeling. We pre-process all text by eliminating common English stopwords, numbers, and punctuation. We also lowercase all text.

Topic 1: Protests

1. Hundreds of police have begun removing climate change protesters who have been blocking London's main [...]
2. For a third day in a row, climate change activists from extinction rebellion have been protesting in central London. A group gathered outside Jeremy Corbyn's home while others glued themselves to a carriage on the docklands light railway.

Topic 2: Denialism

1. This is like dumb talking to dumber. Dumb and dumber. Global warming? We have proven now that the globe goes through warming and cooling cycles. His 15 minutes are up.
2. Whatever the evidence they will shake it up and say it is global warming. Everything is caused by global warming. The reality is the last five years the Earth's temperatures are cooling.

Topic 3: Politicization

1. A fifty-ton train makes barely a mark on the environment. And a country facing climate change finds climate solutions. Somewhere in America, we've already answered some of the nation's toughest questions.
2. He's a bit of a different kind of a Pope. No question about it. He's taken on big political subjects like climate change and it's very interesting but he's got a certain way about him that's very unique and very nice.

Topic 4: Binary language

1. Countries met in Paris and entered into an agreement of which over 185 of the countries committed to reducing the greenhouse gas emissions significantly and agreed to a long-term goal of zero net.
2. Meet the goals of the Paris climate change accord even after President Trump withdrew from the pact. Opponents say the package of bills represented a regressive tax that would not affect climate change. Good day for the markets [...]
3. Will it help save the planet or kill business competition and raise energy costs for everyone?
4. Significantly propping up the economic prosperity of American manufacturers, creating millions of jobs and advancing environmental goals.
5. That has meant a dismantling of multinational agreements, the pulling out of the Paris climate change accords and the destabilisation of the Iran nuclear deal."

Topic 5: Politicians

1. That was a web video that hit Nancy Pelosi and Al Gore. Newt Gingrich was in a video supporting them on climate change themselves backed that message up with a tough Iowa attack mailing.
2. [...] withhold support from climate change legislation if the Senate pushes ahead with an immigration bill first. Graham had been working on a bipartisan bill with Senator John Kerry that was supposed to be unveiled tomorrow but that is on hold.

Topic 6: Physical effects

1. Rising sea levels are forecast to flood more land near our coasts, but wetlands suck in and store the atmospheric carbon.
2. [...] caused by climate change off the coast of Texas. That meant that the storm surge was worse and there was more coastal flooding. The ocean temperatures were warmer which means more moisture in the atmosphere.

Table A4: Representative responses in each topic from STM. Responses were selected from among the most representative responses for each topic (i.e., those with the highest proportion of content assigned to that topic). Responses are adjusted for typos and brevity. Our main topic of theoretical interest is denoted in red.

4 Experiments 1–3: Survey Instruments

4.1 Demographic and Attitudinal Questions

In what ZIP code do you currently reside?

- Numeric entry

What is your gender?

- Male
- Female
- Other

What is your age?

- Numeric entry

What is your race?

- White/Caucasian
- Black or African American
- Non-White Hispanic or Latino
- Asian
- Native American
- Native Hawaiian or Pacific Islander
- Other, please list

What is your annual household income?

- Less than \$50,000
- \$50,000-\$100,000
- \$100,000

What is the highest level of education you have completed?

- Less than a complete high school education
- Complete high school education
- Some university-level or vocational education
- Complete university-level or vocational education

- Some post-graduate education
- Complete post-graduate education

Do you think of yourself as a Democrat, Republican, Independent or what?

- Democrat
- Republican
- Independent
- Other
- Don't know

[Branching from previous question] Would you call yourself a:

- Strong [Democrat/Republican]
- Democrat/Republican
- Lean [Democrat/Republican]

What is your industry of employment?

- Agriculture, Forestry, and Fisheries
- Mining
- Construction
- Manufacturing (Non-durable)
- Manufacturing (Durable)
- Transportation, Communications, and Other Public Utilities
- Wholesale Trade
- Retail Trade
- Finance, Insurance, and Real Estate
- Business and Repair Services / Personal Services
- Entertainment and Recreation Services
- Professional and Related Services
- Public Administration

Assuming global warming is happening, do you think it is ... ?

- Caused mostly by human activities
- Caused mostly by natural changes in the environment
- None of the above because global warming isn't happening
- Other
- Don't know

Which of the following two statements comes closest to your own values?

- Protecting the environment should be given priority, even if it causes some loss of jobs or economic growth
- Creating jobs should be the top priority, even if the environment suffers to some extent

Please indicate your agreement with the following statement: I swim across the Atlantic Ocean to get to work every day.

- Strongly disagree
- Disagree
- Agree
- Strongly agree

4.2 Experiment 1: Vote Choice

We are going to describe a situation the United States could face in the future. Some parts of the description may seem important to you; other parts may seem unimportant. This situation is hypothetical.

In 2025, the United States pledged at an international conference to greenhouse gas emissions by 65% by 2035, relative to 2005 levels. Other big emitters, like China and Europe, also committed to reduce emissions by 2035.

The 2028 general election for President of the United States offers voters a choice between Candidate A and Candidate B. The candidates possess the attributes listed below and have staked out the following positions on key policy issues:

Conjoint Attributes

1. Military service

- Previously served in military
- Has not served in military

2. Immigration policy

- Pathway to citizenship for all undocumented immigrants
- Pathway to citizenship for undocumented immigrants with no criminal record
- No pathway to citizenship for undocumented immigrants

3. Previous occupation

- Lawyer
- Doctor
- Business executive
- College professor
- Activist
- Age

4. Age

- 37, 45, 53, 61, 77

5. Gender

- Man
- Woman

6. Race/ethnicity

- White
- Black
- Hispanic/Latino
- Asian

7. Sexual orientation

- Straight
- Gay

8. Climate policy

- Reduce emissions to meet U.S. pledge under Paris Agreement and avert the worst effects of climate change
- Do not meet U.S. emissions reduction pledge under Paris Agreement to keep costs of fossil fuel energy low

9. Offer government healthcare to:

- All Americans
- Only older, poorer, and/or disabled Americans
- Americans who do not want private health insurance

10. Lower taxes for:

- All Americans
- High-income Americans
- Low- and middle-income Americans

11. Previous political experience

- U.S. Senator
- Mayor of a U.S. city
- State representative
- No prior political experience

13. Party

- Democratic Party
- Republican Party

4.3 Experiment 2: Leader Approval and National Reputation

We are going to describe a situation the U.S. could face in the future. Some parts of the description may seem important to you; other parts may seem unimportant. This situation is hypothetical.

In 2025, the U.S. pledged at an international conference to reduce greenhouse gas emissions by 65% by 2035. President Smith, elected after this pledge was made, has since enacted policies that [ensure that the U.S. will meet / prevent the U.S. from meeting] this target, according to independent monitors.

Other big emitters, like China and Europe, also committed to reduce emissions by 2035. Independent monitors say that these countries [will meet / will not meet] their commitments.

Outcomes

Do you approve or disapprove of the way that President Smith handled this situation?

- Strongly approve
- Somewhat approve

- Neither approve nor disapprove
- Somewhat disapprove
- Strongly disapprove

Do you agree or disagree with the following statement: President Smith's handling of the situation hurt the reputation of the United States in the world.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Do you approve or disapprove of the U.S. commitment to reduce emissions by 65% by 2035?

- Strongly approve
- Somewhat approve
- Neither approve nor disapprove
- Somewhat disapprove
- Strongly disapprove

Suppose your household had to pay a higher monthly electric bill to help the U.S. meet its commitment to reduce emissions by 65%. How much more money a month would you be willing to spend?

- Sliding scale from 0% to 100%

Do you think there will be any economic consequences imposed by other countries from the President's actions?

- Strong negative consequences
- Weak negative consequences
- No consequences
- Weak positive consequences
- Strong positive consequences

What considerations were most important in your assessment of President Smith's behavior? Please explain.

- Short answer box

4.4 Experiment 3: Preference for Compliance vs. Preference for Climate Action

We are going to describe a situation the U.S. could face in the future. Some parts of the description may seem important to you; other parts may seem unimportant. This situation is hypothetical.

In 2025, the U.S. promised to cut its greenhouse gas emissions in half by 2030 compared to 2005 levels at an international conference. President Smith, elected after this pledge was made, has since enacted policies which gave more support and tax benefits for electric vehicles, wind turbines, solar panels, and other renewable energy sources.

Independent monitors suggest that these policies make it much more likely that the U.S. will achieve its emissions reduction goal.

Outcomes

How confident are you that President Smith is doing enough to meet the emissions reduction goal?

- Very confident
- Somewhat confident
- Not very confident
- Not confident at all

Do you feel that you had enough information to determine whether the U.S. will meet its emissions reduction goal?

- Yes
- Maybe
- No

Do you approve or disapprove of the way that President Smith handled this situation?

- Strongly disapprove
- Somewhat disapprove
- Neither approve nor disapprove
- Somewhat approve
- Strongly approve

Do you agree or disagree with the following statement: President Smith's handling of the situation hurt the reputation of the United States in the world.

- Strongly disagree
- Somewhat disagree

- Neither agree nor disagree
- Somewhat agree
- Strongly agree

5 Experiment 1: Descriptive Statistics

Sample characteristics for conjoint experiment:

- **Age:** 14% 18–24 years old; 15% 25–34; 20% 35–44; 12% 45–54; 12% 55–64; 26% 65+.
- **Income:** 18% less than \$25,000; 27% \$25,000–49,999; 22% \$50,000–74,999; 14% \$75,000–99,999; 12% \$100,000–149,999; 6% \$150,000+.
- **Education:** 3% less than a complete high school education; 23% complete HS education; 27% some university/vocational education; 28% complete university/vocational education; 5% some post-graduate education; 14% complete post-graduate education.
- **Party:** 35% Democrat; 31% independent; 33% Republican.
- **Global warming caused by human activities:** 62% yes; 28% caused mostly by natural changes in the environment; 7% global warming isn't happening; 2% other.

6 Experiment 1: Conjoint Results Limited to First Tasks

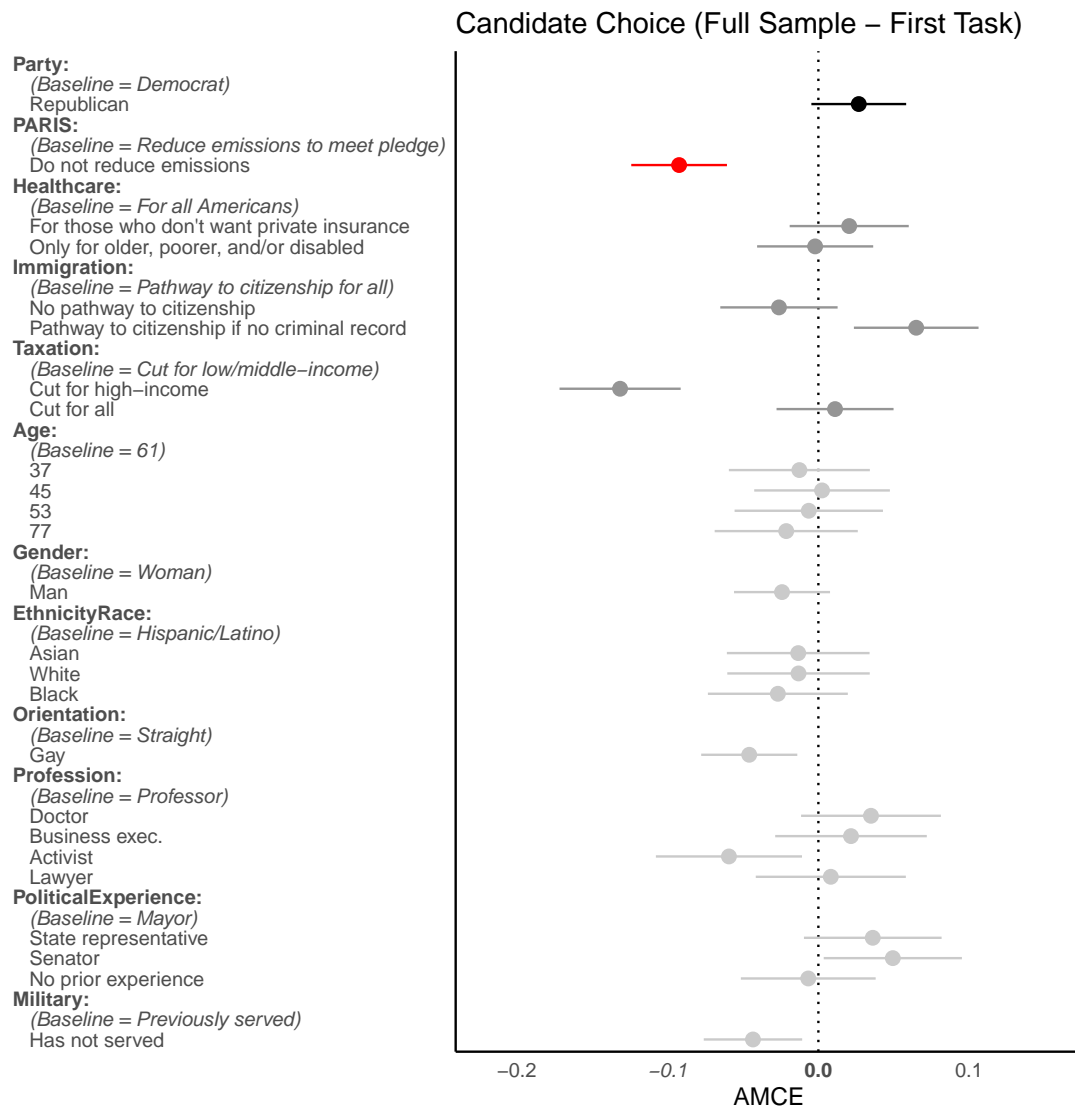


Figure A3: Replication of primary conjoint test, limiting data to the first candidate choice task seen by subjects.

7 Experiment 1: Full Conjoint Results

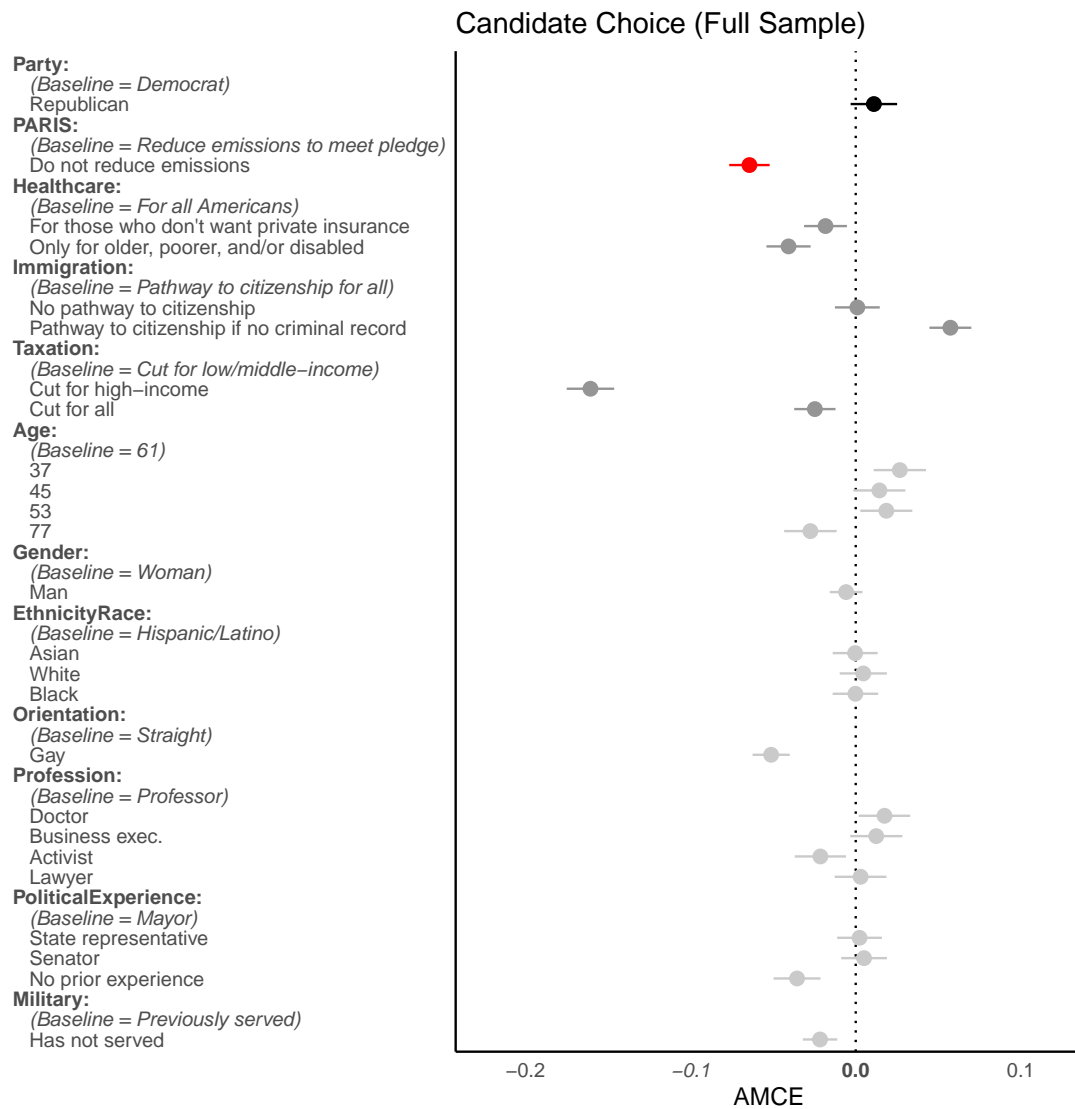


Figure A4: Average marginal component effects for all subjects across all candidate choice tasks. 95% confidence intervals plotted according to standard errors clustered by subject. Estimates based on 40,260 profiles seen by 2,013 subjects.

8 Experiment 1: Full Conjoint Results by Party ID

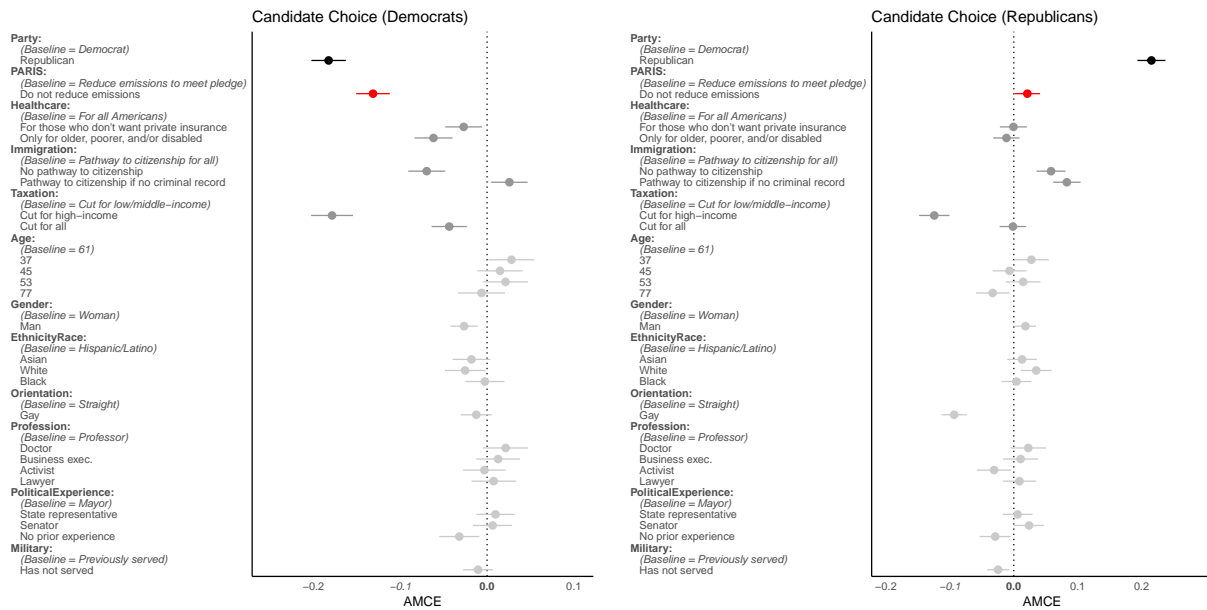


Figure A5: Average marginal component effects for self-identified Democrats (left) and Republicans (right) across all candidate choice tasks. 95% confidence intervals plotted according to standard errors clustered by subject. Estimates based on 14,060 profiles seen by 703 subjects (Democrats) and 13,460 profiles seen by 673 subjects (Republicans).

9 Experiment 1: Conjoint Results by Primary vs. General Election

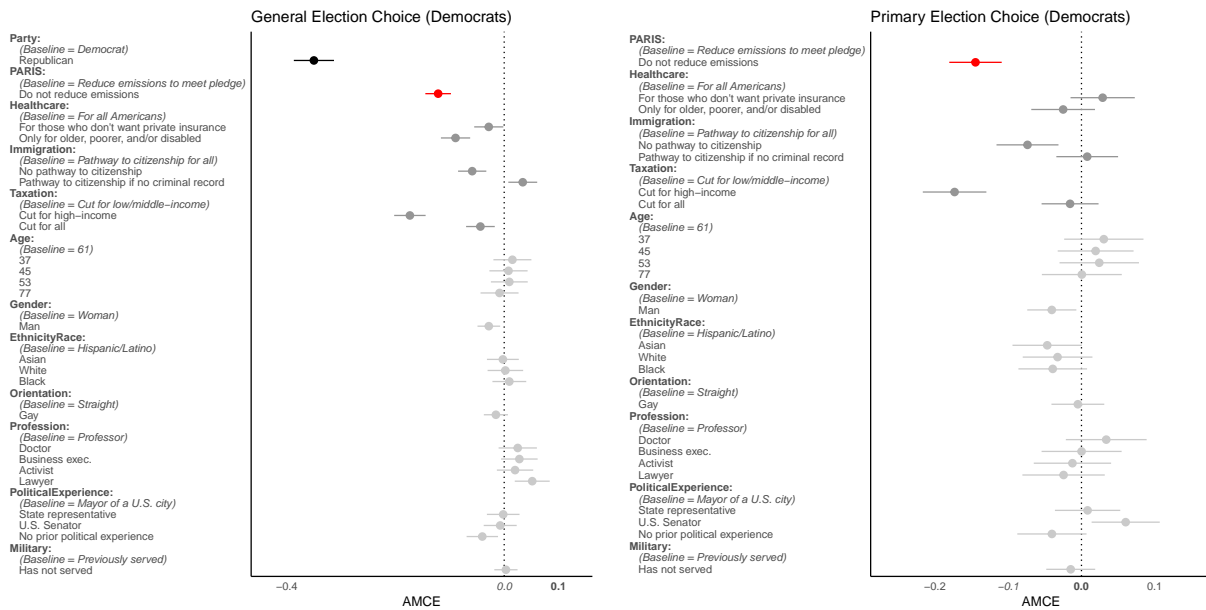


Figure A6: Average marginal component effects for self-identified Democrats in general election (left) and primary election (right) tasks. 95% confidence intervals plotted according to standard errors clustered by subject. Estimates based on 7,376 profiles (general) and 3,342 profiles (primary) seen by 703 subjects.

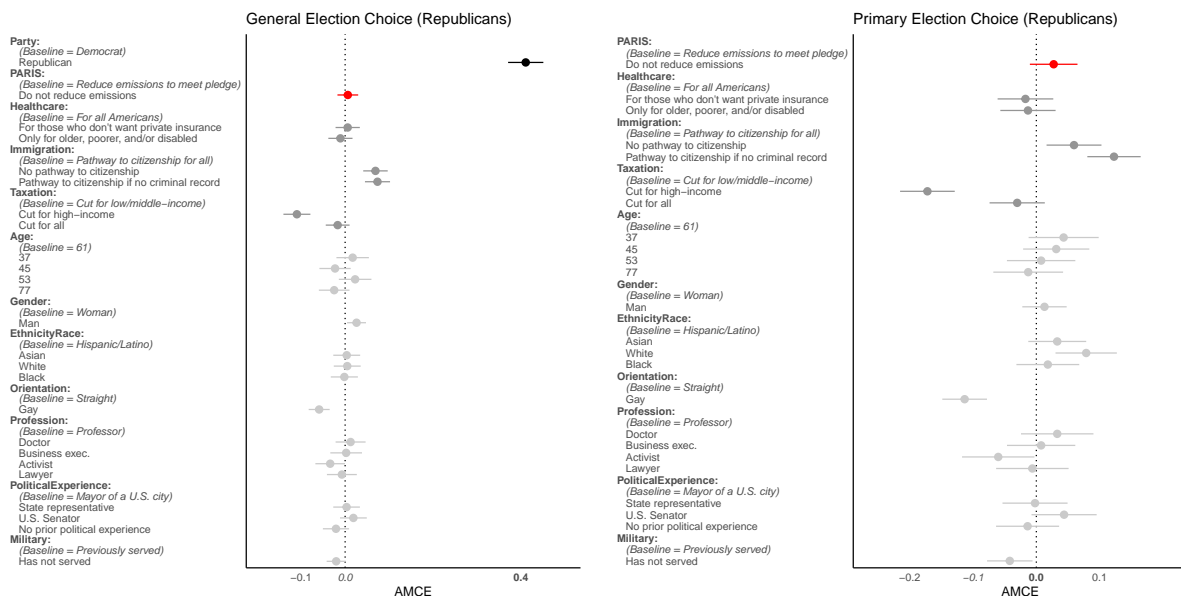


Figure A7: Average marginal component effects for self-identified Republicans in general election (left) and primary election (right) tasks. 95% confidence intervals plotted according to standard errors clustered by subject. Estimates based on 7,032 profiles (general) and 3,214 profiles (primary) seen by 673 subjects.

10 Experiment 2: Descriptive Statistics

Variable	N	Mean	St. Dev.	Min	Max
Age	1228	38.51	13.74	18	92
Income	1232	1.86	0.77	1	3
Education	1232	3.89	1.21	1	6
Democrat	1232	0.49	0.50	0	1
Republican	1232	0.15	0.36	0	1
Global warming caused by human activities	1202	1.20	0.55	1.00	4.00
Approval	1232	3.08	1.49	1	5
Reputation	1232	2.70	1.49	1	5

Table A5: Descriptive statistics for sample in vignette experiment. All covariates are balanced by treatment condition; no covariate mean significantly differs across treatment arms (p values greater than 0.1).

11 Experiment 2: Bootstrapped Results

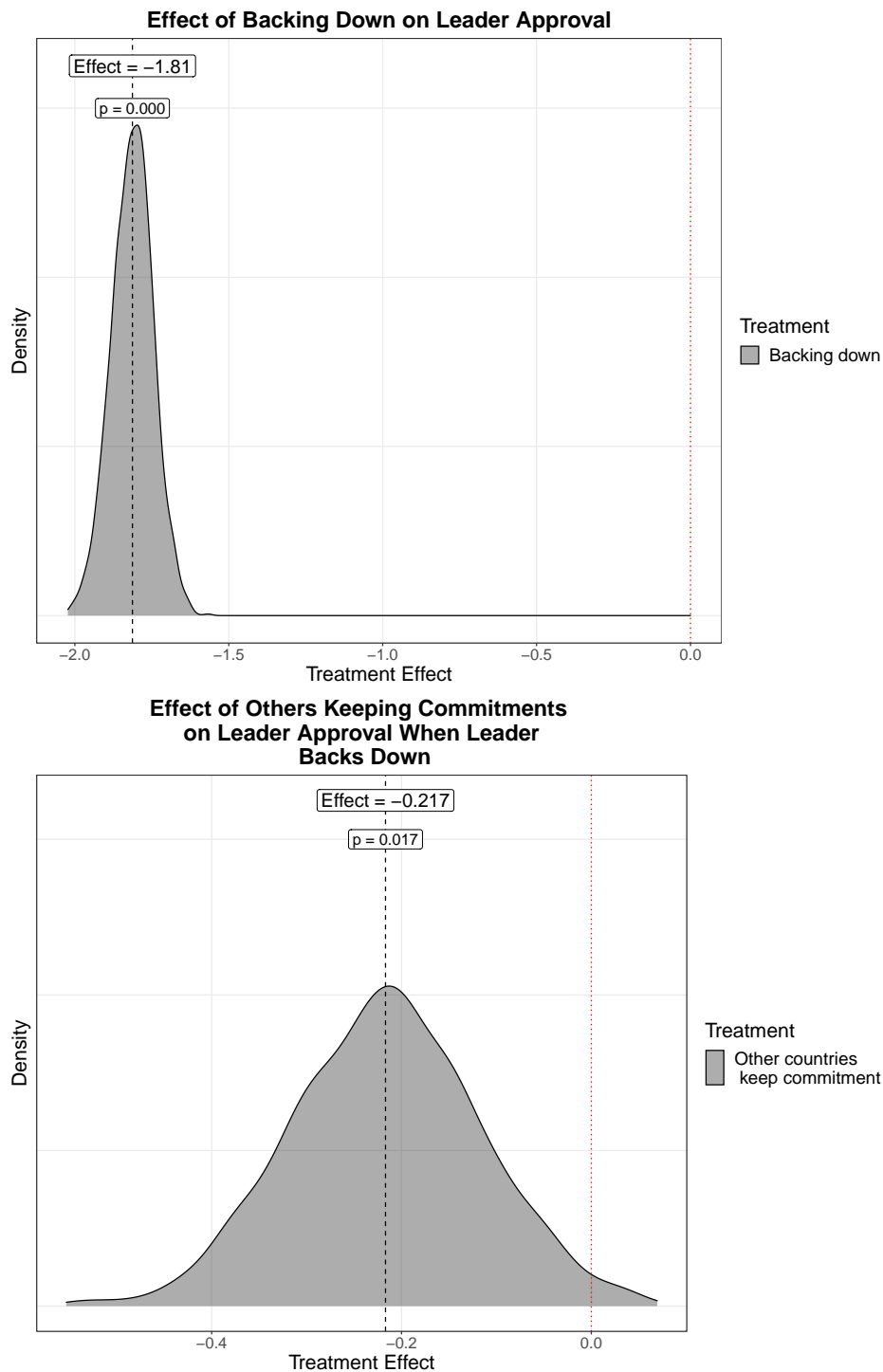


Figure A8: Bootstrapped treatment effects for each hypothesis, based on 1,500 draws. The top plot shows results testing the effect of a leader renegeing on a pledge. The bottom plot shows results testing whether this effect varies with the performance of other countries. Note: outcomes here measured on 1–5 scale.

12 Experiment 3: Descriptive Statistics

Sample characteristics:

- **Age:** 13.1% 18-24 years old; 14.1% 25-34 years old; 16.1% 35-44 years old; 16.8% 45-54 years old; 19.8% 55-64 years old; 20.1% 65+ years old
- **Income:** 21.2% less than \$25,000; 28.1% \$25,000-49,999; 20.2% \$50,000-74,999; 13.3% \$75,000-99,000; 11.2% \$100,000-149,999; 6.02% \$150,000 or more
- **Education:** 2.49% less than a complete high school education; 25.7% complete high school education; 26.2% some university-level or vocational education; 29.7% complete university-level or vocational education; 4.33% some post-graduate education; 11.6% complete post-graduate education
- **Party:** 35.8% Democratic; 33.6% Independent; 30.6% Republican
- **Global warming caused by human activities:** 57.6% yes; 27.6% caused mostly by natural changes in the environment; 5.87% global warming isn't happening; 2.98% other
- **Confident that President Smith will meet warming goal:** 9.05% not confident at all; 33.8% not very confident; 47% somewhat confident; 10.1% very confident
- **Had enough information:** 44.4% no; 40.1% maybe; 15.5% yes
- **Approval of President Smith's handling of situation:** 7.91% strongly disapprove; 11.8% somewhat disapprove; 40.8% neither approve nor disapprove; 25.8% somewhat approve; 13.7% strongly approve
- **President Smith's handling of situation harms U.S. reputation in world:** 19.1% strongly disagree; 18.8% somewhat disagree; 42.5% neither agree nor disagree; 13.6% somewhat agree; 6.02% strongly agree

13 Preregistration



CONFIDENTIAL - FOR PEER-REVIEW ONLY Climate Conjoint (#112445)

Created: 11/09/2022 01:45 PM (PT)

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1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

The Paris Agreement marked a sea change in the international community's approach to climate governance. Rather than relying on the top-down mandates that anchored the Kyoto Protocol, the Paris negotiators opted for a bottom-up "review-and-ratchet" approach whereby states voluntarily pledged to reduce greenhouse gas emissions by self-determined amounts (Busby 2016). Yet traditional theories of international organization emphasize the importance of material rewards and sanctions in facilitating cooperative behavior by states (Krasner 1976; Keohane 1984; Barrett 2005; Hafner-Burton 2008; Bagwell and Staiger 2009; Clark 2021). Absent such carrots and sticks, what weight do these voluntary, non-binding climate commitments carry?

Hypothesis: Citizens should be more likely to vote for a leader who has pledged to meet rather than not meet U.S. emissions reduction targets under the Paris Agreement.

3) Describe the key dependent variable(s) specifying how they will be measured.

- Warm versus cold feeling toward candidate (A/B)
- Vote choice for hypothetical candidate (A/B)

4) How many and which conditions will participants be assigned to?

The experiment is a conjoint design that varies 12 attributes of two hypothetical candidates for President of the United States. These attributes include military service, immigration policy, previous occupation, age, gender, race/ethnicity, sexual orientation, climate policy, healthcare policy, tax policy, previous political experience, and political party. Subjects will be told to evaluate them in the context of a future general or primary election for president taking place in 2028. We randomize whether each candidate's climate policy is to meet versus not meet the U.S.'s Paris emissions targets.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will use OLS to regress respondents' feeling thermometer ratings and vote choice on each of the individual conjoint conditions. We will use covariates including respondents' gender, age, income, education, party identification, and industry of employment.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

Qualtrics will screen out low-quality respondents through the use of speeding and attention checks. Our attention check asks respondents to state that they are "extremely interested" and "very interested" after reading the following statement: "People are very busy these days and many do not have time to follow what goes on in the government. We are testing whether people read questions. To show that you've read this much, answer both "extremely interested" and "very interested"."

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

We will collect 2,000 responses. Our power analysis suggests that we only need 250 responses for the conjoint to provide precise estimates.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

The survey will also collect pre-treatment information on respondents' ZIP code, attitudes toward climate change, and tendencies toward nationalism and cooperative internationalism.

Note: another component of this study (not concerning the conjoint/hypothesis described above) was previously preregistered here:
https://aspredicted.org/blind.php?x=4DD_RMW

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Climate Commitments (#94210)

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1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

The Paris Agreement marked a sea change in the international community's approach to climate governance. Rather than relying on the top-down mandates that anchored the Kyoto Protocol, the Paris negotiators opted for a bottom-up "review-and-ratchet" approach whereby states voluntarily pledged to reduce greenhouse gas emissions by self-determined amounts (Busby 2016). Yet traditional theories of international organization emphasize the importance of material rewards and sanctions in facilitating cooperative behavior by states (Krasner 1976; Keohane 1984; Barrett 2005; Hafner-Burton 2008; Bagwell and Staiger 2009; Clark 2021). Absent such carrots and sticks, what weight do these voluntary, non-binding climate commitments carry?

We advance four hypotheses:

H1 -- Citizens should disapprove more of a leader who backs down from a climate commitment.

H2 -- Citizens should disapprove more of a leader who backs down from climate commitments specifically when other countries have met their own commitments.

H3 -- Citizens proximate to climate-vulnerable industries should exhibit greater disapproval of a leader who backs down from a climate commitment.

Citizens proximate to carbon-emitting industries should exhibit less disapproval of a leader who backs down from a climate commitment.

H4 -- Citizens who live in regions vulnerable to physical climate damages should exhibit greater disapproval of a leader who backs down from a climate commitment.

3) Describe the key dependent variable(s) specifying how they will be measured.

Support for president who kept or reneged on U.S. commitment; assessment of president's reputation; sensitivity to higher energy bills

4) How many and which conditions will participants be assigned to?

Four conditions:

1) US meets commitment / other big emitters meet commitment

2) US meets commitment / other big emitters do not meet commitment

3) US does not meet commitment / other big emitters meet commitment

4) US does not meet commitment / other big emitters do not meet commitment

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will use OLS to regress respondents' support for the president, assessment of the president's reputation, and sensitivity to higher energy bills on their treatment condition. We will conduct one-tailed tests in line with our hypotheses that expect backing down will typically generate disapproval (rather than approval) of the president and a hit to the president's reputation, except among citizens who are proximate to carbon-emitting industries (but for whom we also expect the effects to run in only one direction). We will also use covariates including respondents' gender, age, income, education, party affiliation, and industry of employment.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will exclude participants who fail our attention checks asking them to name the correct color (after we tell them what color to choose) and state whether they agree or disagree with the statement, "I swim across the Atlantic Ocean to get to work."

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

1000

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

The survey will also collect pre-treatment information on respondents' ZIP code and attitudes toward climate change.

CONFIDENTIAL - FOR PEER-REVIEW ONLY
Climate Commitments Follow-Up (#162518)

Created: 02/17/2024 09:27 AM (PT)

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1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

The Paris Agreement marked a sea change in the international community's approach to climate governance. Rather than relying on the top-down mandates that anchored the Kyoto Protocol, the Paris negotiators opted for a bottom-up "review-and-ratchet" approach whereby states voluntarily pledged to reduce greenhouse gas emissions by self-determined amounts (Busby 2016). Yet traditional theories of international organization emphasize the importance of material rewards and sanctions in facilitating cooperative behavior by states (Krasner 1976; Keohane 1984; Barrett 2005; Hafner-Burton 2008; Bagwell and Staiger 2009; Clark 2021). Absent such carrots and sticks, what weight do these voluntary, non-binding climate commitments carry?

We test a series of hypotheses using two separate but related vignette-style experiments. For the "news" vignettes, we expect:

H1 (Approval) – Citizens should be more likely to approve of a leader when that leader's policies are described as putting the United States on track to meet its emissions reductions goals compared with when that leader's policies are described as generically pro-climate.

H2 (Reputation) – Citizens should be more likely to disagree that a leader has hurt the reputation of the United States when that leader's policies are described as putting the United States on track to meet its emissions reductions goals compared with when that leader's policies are described as generically pro-climate.

H3 (Confidence) – Citizens should express higher confidence that a leader is doing enough to meet the United States' emissions reductions goals when that leader's policies are described as putting the United States on track to meet its emissions reductions goals compared with when that leader's policies are described as generically pro-climate.

H4 (Information) – Citizens should be more likely to say that they had enough information to determine whether the United States will meet its emissions reductions goals when that leader's policies are described as putting the United States on track to meet its emissions reductions goals compared with when that leader's policies are described as generically pro-climate.

For the "debate" vignettes, we expect:

H1 – Citizens should be more likely to approve of President Biden when his policies are described as upholding the United States' Paris Agreement commitments compared with when his policies are described as generically pro-climate.

3) Describe the key dependent variable(s) specifying how they will be measured.

For news vignette:

- Approval (5-point Likert from "strongly disapprove" to "strongly approve")
- Reputation (5-point Likert from "strongly disagree" to "strongly agree")
- Confidence (4-point scale from "not confident at all" to "very confident")
- Information (3-point scale including "yes", "maybe", and "no")

For debate vignette:

- Trump support (5-point Likert from "strongly disapprove" to "strongly approve")
- Biden support (5-point Likert from "strongly disapprove" to "strongly approve")
- 2024 vote choice (Biden/Trump)

4) How many and which conditions will participants be assigned to?

Each experiment has two conditions. In the news experiment, subjects will receive either a control condition which describes a hypothetical president's policies as generally pro-climate or a treatment vignette which describes a hypothetical president's policies as generally pro-climate AND likely to help the U.S. achieve its emissions reductions goals. In the debate experiment, both control and treatment subjects will hypothetical debate statements from Joe Biden and Donald Trump. For control subjects, Biden's climate policies will be described as reducing emissions. For treatment subjects, Biden's climate policies will be described as upholding the U.S.'s Paris Agreement commitments and reducing emissions.

NB: This third pre-registration discusses a second "debate" vignette experiment, which will be used in a separate paper.