

# The narrative of policy change: Fiction builds political efficacy and climate action

Lucy Page, Hannah Ruebeck, and James Walsh \*

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## Abstract

Can fictional narratives contribute to building political momentum? In an online experiment ( $N \approx 6,000$ ), learning about the Inflation Reduction Act (IRA) strengthens beliefs about government responsiveness to citizen action by only 0.07sd. Watching a short, fictional story about political climate advocacy as a loose backstory to the IRA yields much larger effects on beliefs (0.5sd). While IRA information alone does not affect climate advocacy, the story increases information-gathering about climate marches by 54 percent and donations to lobbying organizations by 19 percent. We show evidence that beliefs and emotions may drive this effect.

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\*Page: PhD candidate, MIT Economics, lucypage@mit.edu (corresponding author). Ruebeck: PhD candidate, MIT Economics, hruebeck@mit.edu. Walsh: Postdoctoral Researcher, University of Oxford Blavatnik School of Government, james.walsh@bsg.ox.ac.uk. We are grateful to Abhijit Banerjee, Esther Duflo, Karla Hoff, Rohini Pande, and Frank Schilbach for their advice and helpful comments. Page and Ruebeck are supported by the National Science Foundation Graduate Research Fellowship under Grant No. 1745302. This project is also supported by the George and Obie Shultz Fund at MIT and the Strengthening American Democracy Program at Beyond Conflict. The pre-registration for this experiment can be found here: <https://www.socialscienceregistry.org/trials/10351>. IRB approval for the project was obtained from the Massachusetts Institute of Technology Committee on the Use of Humans as Experimental Subjects (Protocol #2208000715).

# 1 Introduction

Concern about climate change is widespread in the US: about two-thirds of Americans report that they are at least somewhat worried about global warming, and over 60% support a range of policies to reduce greenhouse gas emissions. Moreover, 28% of registered voters say they would be willing to contact government officials about climate change. However, few Americans follow through on doing so: only 8% of registered voters say they contacted government officials about global warming in the last year (Leiserowitz et al., 2021).

Longstanding research in psychology and political science suggests that weak political efficacy—the belief that government responds to citizen demands—is a key barrier to political engagement on climate change and other issues.<sup>1</sup> In a survey of 500 young adults fielded on Prolific in June 2022, the most common reason cited for why respondents had not previously pushed for policy change was that it would make no difference (Appendix Figure A1, Panel A). In this study’s baseline survey, collected in November 2022 through March 2023, only 18% of participants at least somewhat agreed that when groups of citizens push for policy on issues like climate change, the US government responds to their demands (Appendix Figure A1, Panel B).<sup>2</sup>

This randomized experiment examines how two interventions aimed at building political efficacy affect subsequent climate action. The first intervention informs participants about the real-world policy progress of the Inflation Reduction Act (IRA), passed in August 2022 as the largest climate bill in US history (Bistline et al., 2023). Our second intervention pairs this information with an explicitly fictional, animated story linking this policy change to citizen advocacy. In this 5-minute video, a young woman—devastated by her dog’s death from heatstroke—mobilizes a climate march that attracts national media attention and contributes to policy change.

We conducted our study via three surveys fielded on Prolific, a paid online survey platform, in the six months following the IRA’s passage. From an initial screening survey, we recruited about 6,000 Americans—all of whom believe that climate change is human-caused and were unaware of the IRA’s recent advances—to complete a main survey in which we implemented our treatments and measured political efficacy and costly climate action. Finally, 85% of the sample took an obfuscated follow-up survey with additional outcome measures 1-4 days later, allowing us to estimate treatment effects with little or no experimenter demand and with a moderate delay (Haaland and Roth, 2020, 2023; Settele, 2022).

Learning about the IRA’s real-world policy advance yields small increases in political efficacy (0.07sd) and no

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<sup>1</sup>Political scientists distinguish between *external* political efficacy—beliefs about how government responds to citizen demands—and *internal* political efficacy—beliefs about one’s own ability to engage with political processes (e.g. Campbell et al., 1954; Balch, 1974; Niemi et al., 1991; Craig et al., 1990; Scotto et al., 2021). We focus throughout the paper on external political efficacy; for brevity, we refer to it as “political efficacy.” A lengthy literature documents correlations between political efficacy and engagement (e.g. Shaffer, 1981; Abramson and Aldrich, 1982; Finkel, 1985). Political-efficacy beliefs are also related to the social-cognitive concept of collective efficacy: beliefs in a group’s ability to accomplish shared goals (Bandura, 2000).

<sup>2</sup>While our focus is not the impacts of citizen advocacy on government action, experimental work in subnational contexts finds that both citizen contacts (Bergan, 2009; Bergan and Cole, 2015) and providing information on constituents’ opinions (Butler and Nickerson, 2011) can shift legislators’ votes.

effects on climate action. The fictional story, in contrast, has striking effects: it increases political efficacy by an additional 0.5sd, increases donations to climate-lobbying groups by 19%, and makes participants 54% more likely to seek information on nearby climate marches, though it has no detectable effects on efforts to email Congress. The story's effects persist strongly in the obfuscated follow-up survey.

The story's impacts on climate action appear to arise both through its effects on efficacy beliefs and its emotional resonance. The story had a range of emotional effects, strongly increasing feelings of hope or strength (0.52sd) and motivation (0.60sd) as well as making participants feel less anxious, sadder, more connected to others, angrier, and less anxious. In suggestive mediation analysis, the story's treatment effects fall substantially when we control for either efficacy beliefs or motivation-related emotions, with the largest drops when we control for both of these possible mediators. The story does not seem to affect action by changing participants' beliefs about Americans' support for or engagement in climate action or by improving recall of the IRA information.

This paper contributes to several literatures in economics, political science, and psychology. First, we add to the large literature on the effect of narratives on social and economic outcomes (Jensen and Oster, 2009; Paluck, 2009; La Ferrara et al., 2012; Kearney and Levine, 2015; Shiller, 2017; Banerjee et al., 2019b,a; Kearney and Levine, 2019; Hoff et al., 2021; Riley, 2022; Walsh et al., 2022). We add to this research in three respects.

Most importantly, we show that a fictional story can increase contributions to a public good and collective action, whereas the existing literature on stories targets behavior with direct private benefits, such as personal health and educational investment. Thus, narratives may be a useful tool to drive efficient mobilization towards common goals. Stories may in fact be particularly useful in promoting behavior with primarily public benefit, like political engagement (Riker and Ordeshook, 1968; Feddersen, 2004; Feddersen and Sandroni, 2006; Fowler, 2006), in which the emotional or self-image returns of doing one's part are primary drivers of action (Bryan et al., 2011). Second, we show that even low-budget, simple stories can have meaningful effects on political beliefs and behavior. Namely, the effects of fictional narratives embedded in commercial entertainment—"edutainment"—may be explained by other features like celebrities, popular songs, or mass distribution. In contrast, our story is watched in isolation during a survey experiment, is five minutes long, was produced for \$11,000, and was written by this paper's authors, all of which mitigate these possible confounds. Finally, we find that the climate-action story has large effects both on participants' causal narratives of policy change and on their emotions, both of which seem to contribute to the story's effects on climate action. This finding builds on recent theoretical work focusing on how narratives compliment pure information as persuasive tools (Eliaz and Spiegler, 2020; Schwartzstein and Sunderam, 2021; Kendall and Charles, 2022) and the effects of emotions on preferences and decision-making (Elster, 1998; Loewenstein, 2000; Lerner et al., 2015).

Next, we contribute to large political science and environmental psychology literatures on political efficacy. We show for the first time that seeing real-world policy change builds political efficacy, and our short, fictional story about a young climate advocate has effects more than four times as large. These impacts contrast sharply with prior

work testing a range of light-touch interventions aiming to build political efficacy around climate change, with limited success (Feldman and Hart, 2016; Hart and Feldman, 2016; Hornsey and Fielding, 2016; Jugert et al., 2016; Xue et al., 2016; Hamann and Reese, 2020; Angill-Williams and Davis, 2021; Ettinger et al., 2021; Hornsey et al., 2021)

Finally, we add to the growing literature on the drivers of support for climate policy and climate action (e.g. Drews and van den Bergh, 2016; Andre et al., 2022; Dechezlepretre et al., 2022; Bernard et al., 2023). To our knowledge, this project is the first experimental work testing ways to build political climate advocacy. Prior work on climate action focuses on donation outcomes (e.g. Andre et al., 2022) and consumer choices (e.g. Allcott, 2011; Ho and Page, 2023).

The paper proceeds as follows: Section 2 describes our experimental design, Section 3 presents our results, and Section 4 concludes.

## 2 Research design

Appendix Figure A2 depicts the study procedure. The study unfolds over three surveys: a screening survey (Section 2.1), the main survey in which we implement randomized treatments (Section 2.2), and an obfuscated follow-up survey (Section 2.3).

### 2.1 Sample selection

We recruited a sample of American adults via a 1-minute screening survey on Prolific<sup>3</sup> and used two questions to screen participants for the experimental survey. First, participants were only eligible if they answered “No” or “I don’t know” when asked whether, to their knowledge, the US government had made substantial progress on climate change so far during 2022. Second, participants were only eligible if they answered that climate change is mostly human-caused when asked if it is mostly human-caused, caused mostly by natural changes in the environment, not happening, or other. Together, these restrictions allows us to identify participants who likely support the goals of climate policy but are unaware of the IRA and its implications.<sup>4</sup>

Of 13,361 participants who completed the screening survey, 8,591 (64%) met these restrictions. We recontacted all qualifying participants, of whom 6,329 participants consented to the main survey and 6,015 completed it. We then exclude 122 participants who failed at least one of two attention checks embedded in the main survey; the first asked participants to select a certain multiple choice answer, while the second asked them to move a 100-point slider to within a 10-point range.

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<sup>3</sup>Participants were recruited to the study in two “waves,” first in November 2022 and again in January 2023. We paused the study due to concerns that proximity to the 2022 midterm elections could affect our results. Our main specifications control for the wave in which a participant completed the survey, and Appendix B disaggregates results by wave.

<sup>4</sup>Our goal was not to isolate those who had never heard of the IRA, a high-profile bill with extensive media coverage, but rather to identify those who are unaware of the bill’s importance in US climate policy. Indeed, 49% of our final sample selected that they had heard of the IRA among a list of four recent bills.

Appendix Table A1 presents summary statistics for our final sample of 5,879 participants. We stratify recruitment on gender and whether participants are above or below 35 years old; our final sample is 53% female, with an average age of 37. Our sample is predominantly white (74%) and liberal: about 59% identify as Democrats, 28% as Independents, and 9% as Republicans. The sample’s baseline political activity broadly matches nationally representative surveys: 25% say that they’ve contacted elected representatives in the last two years, while 23% of a Pew Research Center (2018) Pew Research sample reported having done so in the last year. Participants are also highly concerned about climate change (Appendix Figure A3): 85% place themselves at 5 or higher on a 7-point scale of climate worry, and when asked how much they want the federal government to do on climate change, 78% place themselves at 6 or 7 on a scale from 1 (Much less than currently) to 7 (Much more than currently).

## 2.2 Experimental survey

We recontacted all qualifying participants via Prolific to take the main, experimental survey, during which we administered our treatments and measured key outcomes.

### 2.2.1 IRA information randomization

All participants begin the experimental survey by watching a baseline video (available [here](#)) with visual information on global temperature rise, the Paris Agreement’s goal of limiting warming to 1.5° C, and the speed of global emissions reductions required to meet that goal.

**IRA information treatment:** Two-thirds of participants are then randomized to watch the IRA information treatment video (available [here](#)). This video highlights the US 2030 Paris commitment and visually plots projected emissions under policies as of February 2022, which would fall only halfway to the 2030 goal. The video then introduces the IRA as a major legislative advance after years of advocacy, explains the magnitude of the bill’s spending, and summarizes its climate provisions. The video plots projected emissions cuts under the IRA—then estimated to achieve 65% of the remaining cuts required to reach the 2030 target (Jenkins et al., 2022)—and ends with the following: “That means that the IRA takes a big step towards US emission commitments, but we still need to make major additional emissions cuts by 2030 to meet our Paris goal and limit catastrophic warming.”

**Basic control video:** We randomize half of the remaining participants to watch a “basic-control” video (available [here](#)) that exactly reproduces all information and visuals in the IRA treatment *other than information about the IRA itself*. Thus, we control for any effect that essential context on US climate goals and business-as-usual emissions could have on climate action. After presenting projected emissions under February-2022 policies, this video ends with an adaptation of the IRA treatment video’s final sentence: “From this baseline, we would still need to make major emissions cuts by 2030 to meet our Paris goal and limit catastrophic warming.”

**Extended control video:** While the basic-control video exactly reproduces the beginning of the IRA treatment video, it is 60 seconds shorter. To eliminate concerns that treatment effects arise just from this additional content, we randomized half of the remaining participants to an “extended-control” video (available [here](#)) that adds 60 seconds of filler detail<sup>5</sup> to the basic-control video. This video closes with the same statement as the basic-control video.

### 2.2.2 Fictional climate-advocacy story

Half of those who watched the IRA information video were randomly assigned to subsequently watch a 5-minute fictional, animated story about citizen climate advocacy (available [here](#)). The script was written by the authors of this paper, narrated by professional voice actors, and illustrated, animated, and set to music by a UK-based animation company for a total budget of about \$11,000. See Appendix D for details.

The story centers on a young woman named Annie whose dog, Gilbert, dies in a heatwave. Following Gilbert’s death, Annie is angry and hopeless about government progress on climate change. She encounters an elderly man organizing a climate march, and he convinces her that living in a democracy means that citizens can demand change, and that historical movements (e.g. for women’s suffrage and civil rights) advanced through collective citizen advocacy. Annie decides to fight for change and begins recruiting people for the march. Thousands show up to march for Gilbert. Annie speaks to a newsperson at the march, and her interview is broadcast across the country. The story ties the climate march to passage of a climate bill, saying that it was part of a movement all over the country that finally forced government action. While the story never explicitly mentions the IRA, it operates as a loose, fictional backstory to policy progress. The story concludes by saying that if we and others around the country don’t give up, the government may keep hearing our demands.

**Story-duration control:** To ensure that the story’s effects do not derive just from a longer survey, we cross-randomized half of all participants not assigned to watch the climate-advocacy story to answer filler questions paced by timers to also take five minutes. All results control for whether participants answered these extra questions.<sup>6</sup>

## 2.3 Experimental fidelity

**Attention.** In addition to screening the sample with two attention checks (Section 2.1), we incentivized attention to our treatments: ahead of each video, participants were told that 10 randomly-selected participants would earn \$5 for correct answers on each of 3 to 7 subsequent comprehension questions (described in Appendix F). Overall, participants

<sup>5</sup>This information describes countries’ nationally-determined contributions under the Paris Agreement, the units in which greenhouse gases are measured, when the US issued its most recent Paris commitments, example policies that could help achieve US commitments (the same components attributed to the IRA in the treatment video), and a precise numeric statement about how much emissions are expected to fall under February-2022 policies (matching the numeric precision of the IRA treatment).

<sup>6</sup>We used two different sets of filler questions; details are in Appendix E. The first wave used open-ended questions that intentionally primed some of the story’s themes; in the second, participants took a general science-knowledge quiz. We changed the design of these questions between the two waves—and updated our pre-analysis plan accordingly—to more cleanly control just for duration. The filler version that cleanly controls for duration has no impacts on our main outcomes of interest (Appendix Tables A10 and A11).

answered 86% of comprehension questions correctly. Finally, receiving the IRA information substantially increased participants' knowledge of the IRA elicited at the end of the experimental survey (Appendix Table A2).

**Balance.** Our sample is largely balanced across treatment conditions (Appendix Table A1). The exception is that those assigned to receive IRA information, with or without the story, have higher baseline political engagement. Our main specifications control for dummies for each past political behavior, and our results are robust to controlling for a political-engagement index.

**Attrition.** In total, 95% of those randomized to a treatment status finished the experimental survey and are included in our sample. Those assigned to watch the fictional story are 2pp less likely to finish the experimental survey (Appendix Table A3), but our main results are robust to Lee (2009) bounding (Appendix Tables A4 and A5).

**Demand effects.** To ensure that our results do not arise from experimenter demand effects, we elicited additional measures of our main outcomes in an “obfuscated” follow-up survey that participants did not know was connected with the previous surveys. Thus, any treatment effects we observe on follow-up outcomes are free of experimenter demand effects (Haaland and Roth 2020, 2023; Settele, 2022). The follow-up survey was advertised under a different researcher's account and described as being about political activity in general rather than climate change, and no participants indicated that they connected the obfuscated follow-up survey with the earlier surveys (see Appendix C for details). 85% of those who finished the experimental survey complete the obfuscated follow-up survey, with no differential completion by treatment conditional on finishing the main survey (Appendix Table A3).

## 2.4 Main outcomes

### 2.4.1 Political efficacy

We elicit both qualitative and quantitative measures of political efficacy in the experimental survey; we detail these and all other outcomes in Appendix G. The qualitative measures elicit participants' agreement from 1 (Strongly disagree) to 7 (Strongly agree) with three statements about the role of citizens in climate policy, adapted from Craig et al. (1990). Next, we develop a quantitative measure of political efficacy by asking participants to estimate the probability that a hypothetical climate bill would pass if it was introduced to Congress in the next few months, separately if 2% or 10% of Americans contacted their national representatives to support it. The difference between participants' guesses in each of these cases provides a numeric measure of external collective efficacy: the impact of additional citizen pressure on government action.

In the obfuscated follow-up survey, we measure political efficacy by asking participants to rate their agreement from 0 (Disagree completely) to 7 (Agree extremely strongly) with the statement that “Citizen movements on issues like gun control and climate can make real change.” We also ask participants to rate how effective they think (1)

marches or rallies and (2) contacting politicians by phone or email are in affecting government policy, from 1 (Not effective at all) to 6 (Extremely effective).<sup>7</sup>

## 2.4.2 Climate action

**Donations to climate advocacy organizations.** We observe real-stakes donations to climate-advocacy organizations during both the experimental and follow-up surveys. During the experimental survey, we tell participants that we will randomly choose one participant to win an \$80 bonus and allow them to earmark any portion of that bonus to one of three policy-oriented climate advocacy organizations in the case that they are chosen. We observe whether and how much participants choose to donate.

In the obfuscated follow-up, participants similarly distribute a \$100 bonus—which one participant will win—between take-home money and donations to advocacy organizations lobbying for environmental policy, abortion access, gun control, and free-market policy. We frame these donation choices as opportunities to advocate for policy change by supporting effective lobbying groups.

**Direct citizen advocacy.** We also observe participants’ engagement with direct citizen advocacy. During the experimental survey, we offer participants an opportunity to email Congress about climate change via a portal hosted by an NGO. We observe whether participants opt in to the process of writing a letter, whether they compose a custom email to Congress,<sup>8</sup> and whether they click a link to the portal from which to send the email.

Halfway through data collection, we added an additional outcome to the experimental survey to capture interest in participating in a climate march, since the story centers so heavily on this type of action.<sup>9</sup> We observe whether participants click a link to a map of upcoming climate marches published by Fridays for Future, a decentralized group that organizes climate marches around the world.

Finally, we observe in the follow-up survey whether participants download “Call the Halls,” a guide to contacting legislators that we suggest they read and share with others.

# 3 Results

## 3.1 Specifications

We estimate the impacts of the IRA information and fictional story in the following specification:

<sup>7</sup>Note that we added these questions to the follow-up survey shortly after beginning data collection (added as secondary outcomes in an amendment to our pre-analysis plan), so we observe them for only 78% of those who took the obfuscated follow-up survey and 66% of the total sample.

<sup>8</sup>The portal includes a form letter, so participants do not need to write out a personalized message in order to later send an email. Note that we use these indirect measures of whether participants email Congress, rather than having them send emails directly from our survey, to protect Prolific participants’ anonymity.

<sup>9</sup>We introduced this secondary outcome in an amendment to our pre-registration posted on January 11, 2023 before starting our second round of data collection (see Footnote 3 and Appendix B). We elicit this outcome after the other main outcomes to avoid contaminating their interpretation.



$$Y_i = \alpha_0 + \beta_1 IRAInfo_i + \beta_2 Story_i + A^T X_i + \varepsilon_i \quad (1)$$

where  $Y_i$  is our outcome of interest,  $IRAInfo_i$  indicates watching the IRA information video (i.e. being in either the T1 or T2 treatment groups in Appendix Figure A2), and  $Story_i$  indicates also watching the fictional story video (i.e. being in the T2 treatment group).  $X_i$  is a vector of controls and  $\varepsilon_i$  is an individual-specific error term. This specification pools the basic and extended control arms, which are rarely statistically or economically distinguishable, as the omitted group. Appendix Figures A4 through A15 show that our results are robust to estimating treatment effects relative to either control.

Our main specifications control for demographics, climate worry, desire for additional government climate policy, baseline political efficacy, baseline political engagement, and indicators for whether participants were assigned to the 5-minute filler questions and participated in the first or second wave of data collection. Demographics include sex, 5-year age bins, ethnicity, indicators for having a 4-year college degree interacted with indicators for being over age 25, and political affiliation. Appendix G describes these controls in detail, and Appendix Figures A4 through A15 show that our results do not change with any choice of controls.

### 3.2 Political efficacy

While learning about the actual policy progress of the IRA somewhat increases political efficacy, also watching the fictional climate-advocacy story yields much larger effects (Table 1). Learning about the IRA increases participants' agreement that the US government responds to citizen demands for policy change by 0.11sd and the index of overall external political efficacy by 0.07sd. In contrast, the story affects all three political efficacy statements by between 0.36 and 0.42sd and increases the overall political efficacy index by 0.51sd. Note that the dependent variables in columns 1 and 2 are agreement with *negative* efficacy statements, which are flipped when added to the index. The story also increases the quantitative measure of political efficacy (column 5): watching the climate story increases participants' beliefs about the effect of an additional 8pp (from 2 to 10%) of Americans calling to support a climate bill on the likelihood that Congress would pass it by 0.9pp, a 10 percent increase over the control mean. Learning about the IRA does not affect this measure.<sup>10</sup>

The IRA information's relatively small effects on political efficacy do not persist in the obfuscated follow-up, but the large impacts of the story remain (columns 6-9). The story increases agreement that citizen movements can make real change, beliefs that marches or rallies and contacting Congress are effective in changing government policy, and an index of these measures by 0.23sd, 0.16sd, 0.11sd, and 0.2sd, respectively. In addition to eliminating any demand effects, these results show that the story persistently changes beliefs at least in the short term and that participants

<sup>10</sup>Appendix Table A12 separates this result into treatment effects on the likelihood of passing a climate bill if 2% or 10% of Americans contacted Congress to support it, alongside effects on participants' beliefs about the probability that we will meet key national and global climate goals.

substantially extrapolate the story’s emphasis on marches to other forms of advocacy – contacting Congress by phone or email – that it did not highlight.

### 3.3 Climate action

Learning about the IRA has no impact on climate action, but the fictional story substantially increases participants’ interest in climate marches and climate-advocacy donations in both the main and follow-up surveys (Table 2).

**Donations to climate advocacy organizations.** Learning about the IRA has no effect on climate donations in either the main (columns 1 and 2) or follow-up survey (columns 3 and 4). In contrast, participants who watched the climate-advocacy story are 5pp more likely to donate to a climate organization in the experimental survey, a 10% increase relative to the control group, and donate \$2.88 more overall, a 19% increase over the average control donation of \$14.94 of a possible \$80. The story had similar effects on donations during the obfuscated follow-up. Those who watch the story are 6pp more likely to donate to climate advocacy, a 13% increase, and donate on average \$1.41 more, a 16% increase over the average control donation of \$8.55 of a possible \$100. Notably, these higher climate donations do not crowd out donations to other causes in the follow-up. The story increases total donations by \$3.02, an effect that is twice as large as that on donations to climate advocacy alone (Appendix Table A6).<sup>11</sup>

**Citizen advocacy.** In contrast, the climate-advocacy story has only narrow effects on interest and engagement in *personal* climate advocacy (Table 2, columns 5-9). Neither the IRA information nor the story affect whether participants opt into the letter-writing process, write a custom letter, or click to the portal to send the letter. With 95% certainty, we can rule out that the story made participants more than 2.3pp more or less likely to click to the portal, though this range is fairly wide relative to the control mean of 15%. On the other hand, the story does have large effects on participants’ revealed interest in climate marches, the form of advocacy it portrays. Participants who watch the story are 4.3pp more likely to click the link to Fridays for Future, a 54% increase relative to the control group.

Neither the IRA information nor the story has a detectable effect on whether participants download the “Call the Halls” guide in the follow-up survey (column 9). With 95% confidence, we can rule out that the story made participants more than 4.9pp more likely or 1.3pp less likely to download the guide (relative to a control mean of 21%).

### 3.4 Mechanisms

While the climate-advocacy story’s effects on political efficacy could underlie its impacts on action, other mechanisms could also explain these effects. This section explores additional secondary outcomes collected in the main and follow-

<sup>11</sup>Point estimates suggest that the fictional story comparably increased donations across all of the other causes, though only its impacts on donations to the free-market lobbying group are statistically significant. The story’s impacts on donations to the climate organization are twice as large as on donations to any other cause (Appendix Table A6).

up surveys to understand the processes through which the story drives action.

### 3.4.1 Emotions

First, the story may drive action through its impacts on emotion. We elicited participants' emotions immediately after the treatment videos in the experimental survey, providing them with three blanks and asking them to list at least one emotion they were currently feeling. Participants then rated how strongly they felt each emotion they listed. Two authors hand-coded these free-response emotions into categories from a treatment-blind list, generating the classification scheme detailed in Appendix G. Figure 1 plots the impacts of each treatment on standardized measures of how strongly participants felt each emotional category. Note that because we elicited emotions before participants are offered the chance to take action, any impacts on emotion are not due to action itself.

Both learning about the IRA and the climate-advocacy story had sizable effects on participants' emotions, with especially stark effects from the story. Panel A explores the emotional spectrum of motivation versus apathy. While both the IRA information and story substantially increase participants' reports of feelings of hope or strength and reduce expressions of pessimism, the story also increases feelings of motivation (0.6sd) and reduces apathy or fatigue (0.2sd). Turning to other positive and negative emotions in Panels B and C, we find that learning about the IRA increases happiness, peacefulness and connectedness, while reducing sadness, anger, and anxiety. While the story also increases feelings of connectedness, its other emotional effects diverge starkly from those of the IRA: participants feel *less* peaceful, much sadder, and angrier. At the same time, the story sharply reduces feelings of anxiety and doubt.

The disparate emotional effects of the story and IRA information are largely consistent with the story's much larger effects on climate action. Unlike the IRA information, the story pushes participants towards feelings like anger and motivation that have been shown to increase political interest and engagement (Brader, 2005; Valentino et al., 2011), and which are correlated with action in our experimental control group (Appendix Table A7). On the other hand, IRA information pushes participants towards "complacent" emotions, like peacefulness and happiness, which show no or negative associations with action in our control group.

### 3.4.2 Desire for climate policy

The story and IRA treatments' impact and lack of impact, respectively, on climate action could also arise from their effects on concern about climate change and desire for continuing government action. During the experimental survey, we elicit participants' worry about climate change from 1 (Not at all worried) to 7 (Extremely worried), how much they want the federal government to do about climate change, from much less (1) to much more (7) than it's currently doing, and their rankings of how highly Congress should prioritize climate change in a list of policy issues. We elicit a similar measure in the obfuscated follow-up by asking participants how much they want the newly-elected Congress

to focus on gun control, climate change, reducing inflation, and reproductive rights, each on a scale from 1 (Not at all) to 6 (Very much so).

Learning about the IRA reduces participants' desire for government climate action by 0.11sd (Appendix Table A8).<sup>12</sup> In contrast, the story significantly *increases* all three measures of policy demand: worry about climate change by 0.09sd, desire for more government climate action by 0.16sd, and legislative priority on climate change by 0.07sd. The impacts of the treatments on desire for climate policy are similar in the obfuscated follow-up survey, where the story increases hope that the new Congress will focus on climate change by 0.07sd. The impact of the IRA information treatment on climate priority in the follow-up is statistically insignificant ( $p = 0.17$ ), but the negative point estimate is consistent with results in the experimental survey.

These results are notably consistent with the climate-action patterns we observe, and they suggest that the story could drive action by evoking the urgency of climate change—through Gilbert's death in the heatwave or depictions of fires and floods—rather than by building political efficacy. That said, Section 3.4.5 discusses suggestive evidence that the story's effects on desire for climate policy are not the main drivers of its effects on action.

### 3.4.3 Beliefs about others

Learning about the IRA could signal that many Americans support climate policy or are engaged in the climate movement. Moreover, the story shows a large a climate march and states that “millions of people” across the US could advocate for climate policy. While the story is explicitly fictional, this image and rhetoric could shift participants' beliefs about other Americans' climate beliefs or action. Growing research in economics finds that shifting up beliefs about anonymous others' political participation tends to reduce engagement in collective political action (Cantoni et al., 2019; Hager et al., 2022, 2023). On the other hand, Americans underestimate support for climate policy on average, and correcting these beliefs could increase action if participants conform to the norms of policy support that they perceive (Sparkman et al., 2022).

Learning about the IRA does not change beliefs about support for or engagement in the climate movement (Appendix Table A9). While the story does not change participants' belief about the share of Americans who support climate policy, it does increase their beliefs about the share of those Americans who would contact Congress to support a climate bill by 2.5pp (8% of the control mean). Existing work suggests that this increase may *reduce* the story's impacts on action, rather than driving them.

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<sup>12</sup>The IRA information should only affect desire for government action by changing participants' beliefs about current climate policy, not beliefs about the urgency of climate change. The IRA information treatment matches the control videos in stating truthfully that the US is not on track to meet its climate goals, and all three videos end in parallel statements emphasizing the need for continuing emissions cuts.

### 3.4.4 Memory

While recent work suggests that the story could affect action by helping participants encode the IRA information (Graeber et al., 2022), this explanation is unlikely given that information about the IRA has no effect itself on action. Moreover, Appendix Table A2 shows that the story had no differential effect on whether participants reported having heard of the IRA at the end of the experimental survey.

### 3.4.5 Combining mechanisms

In Figure 2, we explore suggestive evidence on the role of each possible mechanism in the story’s effects on action. Here, we plot the story-treatment coefficients in a series of regressions that separately control for each possible mediator—efficacy beliefs, indices of emotion strength, policy desire, and beliefs about others’ political engagement—and then gradually add these controls to a single regression. Across all action outcomes, controlling for political efficacy and the index of motivation-related emotions each substantially reduce the story-treatment coefficient, with the largest drops when controlling for both together. Controlling for policy desire or beliefs about others’ action reduce the story-treatment by a lesser degree and not at all, respectively. These patterns suggest that the story’s effects on action can be explained in large part by its effects on both political-efficacy beliefs and feelings of motivation and strength.<sup>13</sup>

## 4 Conclusion

In a large online experiment, we find that people update their beliefs and behavior substantially more in response to a fictional narrative about citizen climate advocacy than to learning about recent, major legislative progress. These results are all the more striking because of the comparative strength of each treatment: the IRA is the most significant climate legislation ever passed in the United States; the story was produced on a small budget (and written by economists). Suggestive evidence implies that the story’s substantial effects on climate action can be attributed to both its “cold” effects on beliefs about government responsiveness to citizen action and its “hot” effects on emotions of motivation and hope.

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<sup>13</sup>A related, but conceptually distinct, question is what aspect of the story treatment drives its impacts on political efficacy and emotions. For example, these effects could arise from the story’s musical soundtrack, its animated imagery, the fictional storyline itself, informational signals about real-world facts, or, most likely, a combination of these elements. While our treatment variation does not allow us to separate these components, we argue that the story’s informational content is unlikely to play a large role. The only direct quasi-factual statement included in the story is that citizen activism contributed to the success of movements for women’s right to vote, labor laws, and civil rights. While these historical examples could add to the story’s effects on political efficacy, they only take up about 8 seconds near the midpoint of a 5-minute video and are unlikely to play a substantive role relative to the much more salient fictional storyline.

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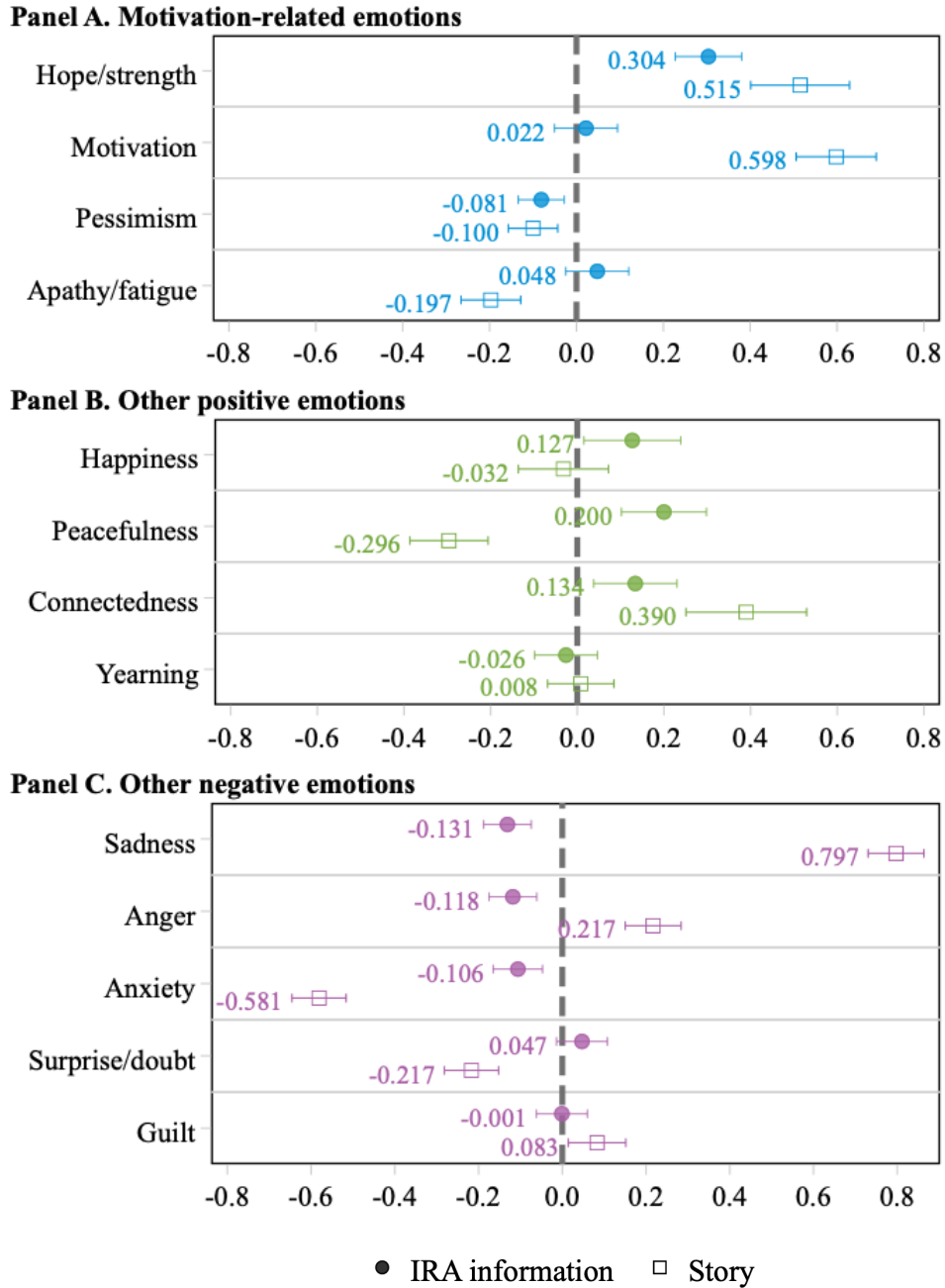
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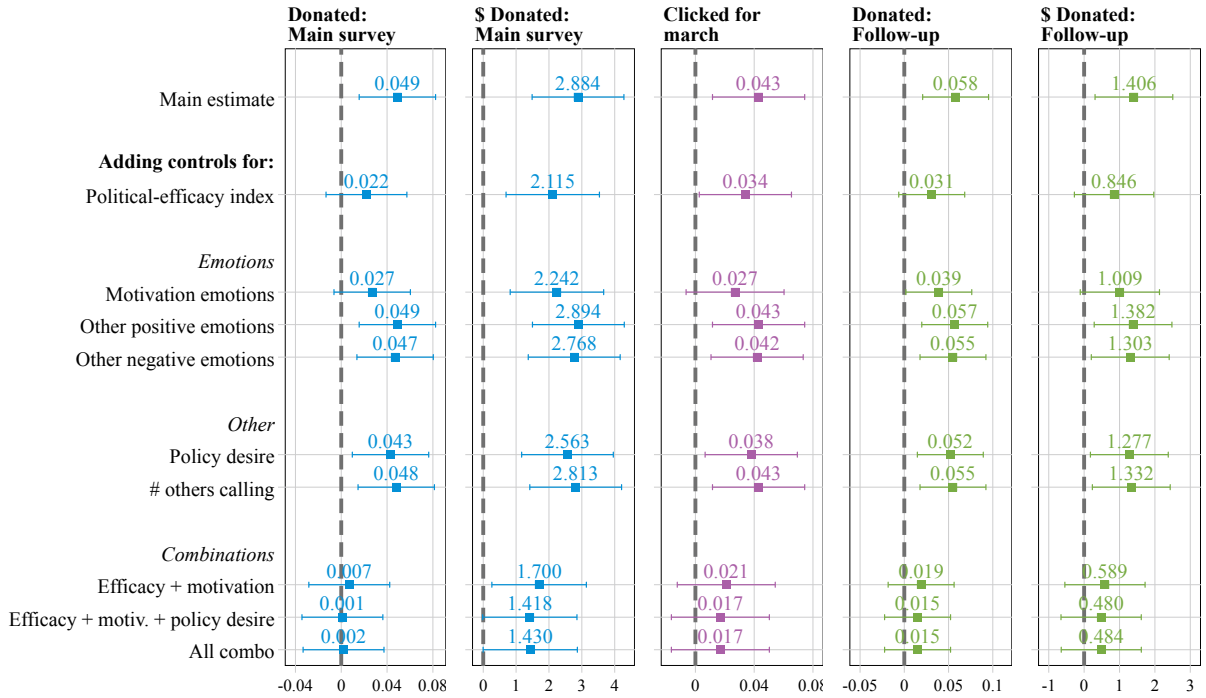
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Figure 1: Impacts on emotions



**Note:** This figure plots the impacts of the IRA information treatment and the fictional climate-action story on emotions expressed during the main experimental survey. Panel A presents impacts on motivation-related emotions: Hope or strength, motivation, pessimism, and apathy or fatigue. Panel B presents impacts on other positive emotions: Happiness, peacefulness, connectedness, and yearning. Finally, Panel C presents impacts on other negative emotions: Sadness, anger, anxiety, surprise or doubt, and guilt. We define each emotion outcome as the standardized strength at which participants said they felt that emotion, unprompted. Appendix Section G describes in detail how we constructed these measures of emotions. We estimate treatment impacts by regressing each emotion outcome on an indicator for receiving IRA information and an indicator for additionally watching the climate story. These regressions include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. Points in the figure marked with solid circles and open squares denote coefficients on the IRA information treatment and story treatment, respectively; the error bars denote 95% confidence intervals.

Figure 2: Impacts of the story on climate action: Controlling for mediating emotions and beliefs



**Note:** This figure plots our main estimates for the impacts of the fictional story on key climate-action outcomes and how these estimates change when we control for possibly-mediating beliefs and emotions. In particular, we sequentially add controls for the standardized index of political-efficacy beliefs, for standardized indices of motivation-related emotions, other positive emotions, and other negative emotions, and finally for both the standardized indices of political efficacy and motivation-related emotions. We construct the indices of motivation-related emotions, other positive emotions, and other negative emotions by standardizing the sum of standardized variables for the strength with which each participant reported feeling an emotion in that category, as grouped in Appendix Section G. Note that in constructing an index of motivation-related beliefs, we flip the signs of the strength with which participants feel pessimism and apathy or fatigue. The point estimates plotted are the coefficients on the story treatment in regressions of each action outcome on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. In addition to the controls for potentially mediating intermediate outcomes, these regressions including the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. Sample sizes for the regressions involving each outcome are given in the corresponding columns of Table 2. The error bars plot 95% confidence intervals.

Table 1: Impacts of treatments on political efficacy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<b>Main survey:</b>					<b>Follow-up survey:</b>			
	Agreement that:					Agreement:			
	People like me have no say	Lobbyists have more power	Gov't responds citizens	Index (all +)	$\Delta$ P(Pass bill) if 2% to 10% call	Citizen movements make change	How effective on govt policy? Marches    Contacts		Index
IRA info	-0.029 (0.027)	-0.035 (0.027)	0.105 (0.028)	0.073 (0.024)	-0.431 (0.333)	0.007 (0.035)	-0.003 (0.036)	-0.009 (0.036)	-0.002 (0.034)
+ Story	-0.363 (0.033)	-0.382 (0.030)	0.416 (0.032)	0.505 (0.029)	0.948 (0.383)	0.231 (0.039)	0.161 (0.040)	0.112 (0.041)	0.198 (0.038)
N	5879	5879	5879	5879	5879	3899	3899	3899	3899
Control mean	0.000	0.000	0.000	-0.000	9.029	0.000	-0.000	-0.000	-0.000

**Note:** This table estimates the impact of IRA information and the fictional story on political efficacy. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We also control for survey wave, whether participants completed the extra filler questions, demographics (sex, age bins, ethnicity categories, college-by-age groups, and political affiliation), climate attitudes (climate worry and desire for additional government action), political efficacy, and political engagement. Appendix Section G.2 defines these control variables in detail. The outcomes presented in columns 1 through 5 are measured during the main experimental survey, while those in columns 6 through 9 are measured during the obfuscated follow-up survey. Columns 1 through 3 present impacts on standardized agreement with three qualitative political-efficacy statements, where negative coefficients in columns 1 and 2 and a positive coefficient in column 3 denote increasing political efficacy. Column 4 presents impacts on a standardized index combining agreement with these qualitative statements, where components are rescaled so that increasing values denote higher political efficacy. Column 5 presents impacts on a numeric measure of political efficacy, defined as participants' estimates for how much more likely Congress would be to pass a climate bill if 10% versus 2% of Americans contacted them to support it. Appendix Table A12 presents treatment effects on participants' estimates of the likelihood that the bill would pass if 10% or 2% contacted Congress in support. Column 6 presents impacts on standardized agreement that citizen movements can make real change, and columns 7 and 8 present standardized beliefs for how effective marches and contacting Congress are in affecting government policy. Finally, column 9 presents impacts on a standardized index combining the outcomes in columns 6 through 8. Appendix Section G defines all of these outcome variables in detail. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table 2: Impacts of treatments on climate donations and citizen advocacy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<b>Climate donation outcomes:</b>				<b>Direct-action outcomes:</b>				
	<i>Main survey:</i>		<i>Follow-up:</i>		<i>Main survey:</i>				<i>Follow-up:</i>
	Y/N	Amount	Y/N	Amount	Sending letter to Congress:			Clicked for march	Downloaded guide
					Said interested	Wrote letter	Clicked to send		
IRA info	0.006 (0.015)	0.006 (0.623)	-0.015 (0.016)	-0.540 (0.481)	-0.001 (0.015)	0.000 (0.011)	-0.010 (0.011)	-0.008 (0.013)	-0.008 (0.014)
+ Story	0.049 (0.017)	2.884 (0.712)	0.058 (0.019)	1.406 (0.560)	0.016 (0.017)	-0.014 (0.012)	0.009 (0.012)	0.043 (0.016)	0.018 (0.016)
N	5879	5879	5021	5021	5879	5879	5869	2595	5021
Control mean	0.511	14.944	0.438	8.552	0.426	0.126	0.145	0.079	0.210

**Note:** This table estimates the impact of IRA information and the fictional story on climate action. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. The outcomes presented in columns 1 through 5 are measures of direct citizen action, while those in columns 6 through 9 are measures of donations to climate-lobbying organizations. Columns 1 through 4 estimate impacts on direct-action outcomes measured during the main experimental survey: whether participants said they were interested in emailing Congress (column 1), whether they wrote out text for a custom letter to Congress (column 2), whether they clicked to the portal to send their letter (column 3), and whether they clicked on a link for information about nearby climate marches (column 4). Note that we only observe whether participants click for climate-march information among those in the second survey wave. Column 5 presents whether participants downloaded the guide for contacting legislators offered in the follow-up survey. Columns 6 and 7 present impacts on whether and how much participants donated to a climate organization in the main experimental survey, while columns 8 and 9 present impacts on whether and how much they donated to the climate organization in the follow-up survey. Appendix Table A6 presents impacts on whether and how much participants donated to non-climate organizations in the follow-up survey. All donation amounts are given in USD. Appendix Section G defines all of these outcome variables in detail. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

# *Online Appendix: Policy change and the stories behind it: Effects on political efficacy and advocacy*

Lucy Page, Hannah Ruebeck, and James Walsh

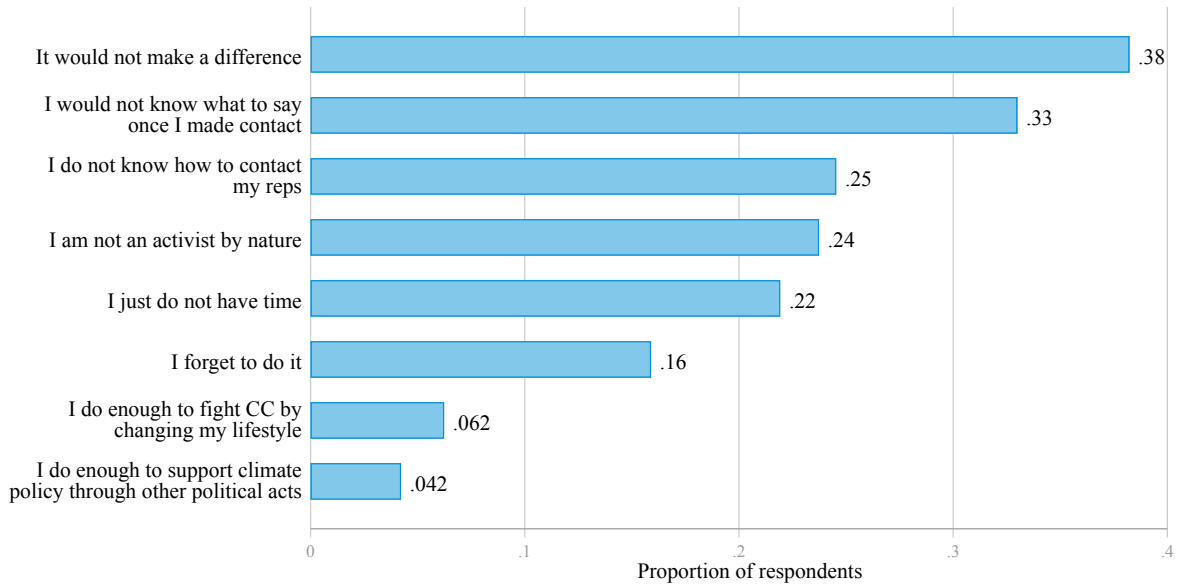
August 2023

Appendix **A** contains supplementary tables and figures. Appendix **B** discusses additional details of study recruitment. Appendix **C** describes the obfuscation process for the follow-up survey. Appendix **D** describes the production of the story. Appendix **E** describes the 5 minutes of filler questions that half of all participants who did not watch the climate-advocacy story were randomly assigned to complete. Appendix **F** describes the comprehension questions used to assess attention to all videos. Finally, Appendix **G** describes additional details on how the variables used in our main analysis were measured and defined.

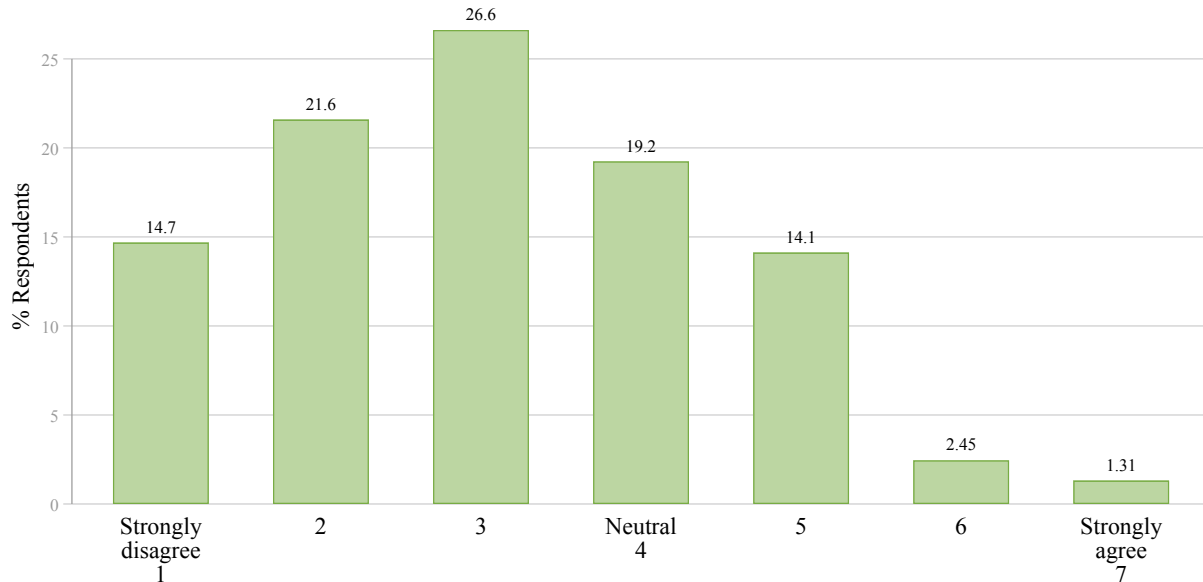
## A Supplementary tables and figures

Figure A1: Political efficacy among those who want more climate policy

Panel A. June 2022 Prolific survey: Share citing each option as top-2 reason for not previously contacting Congress about climate change



Panel B. Screening sample for main study: Agreement that “When groups of citizens push for policy on issues like climate change, the US government responds to their demands.”



**Note:** Panel A plots responses from a sample of 445 Prolific participants recruited in June 2022. These participants were split evenly by gender, live in the 48 contiguous United States, and were between the ages of 18 and 25. All of these participants reported that they had not phoned, emailed, or called Congress about climate change in the previous 12 months. We asked participants to rank each of the 8 reasons in Panel A from most important (1) to least important (8) in preventing them from contacting Congress; participants could leave any reason that was not at all relevant out of their ranking. Panel A plots the share of participants who ranked each reason among their top-2 most important reasons for not contacting Congress. Panel B plots the distribution of responses to one of the qualitative political-efficacy questions elicited in the screening survey for this experiment, among our experimental sample (N = 5,879). In particular, it plots participants’ agreement from 1 (Strongly disagree) to 7 (Strongly agree) with the following statement: “When groups of citizens push for policy on issues like climate change, the US government responds to their demands.”



Figure A2: Research Design

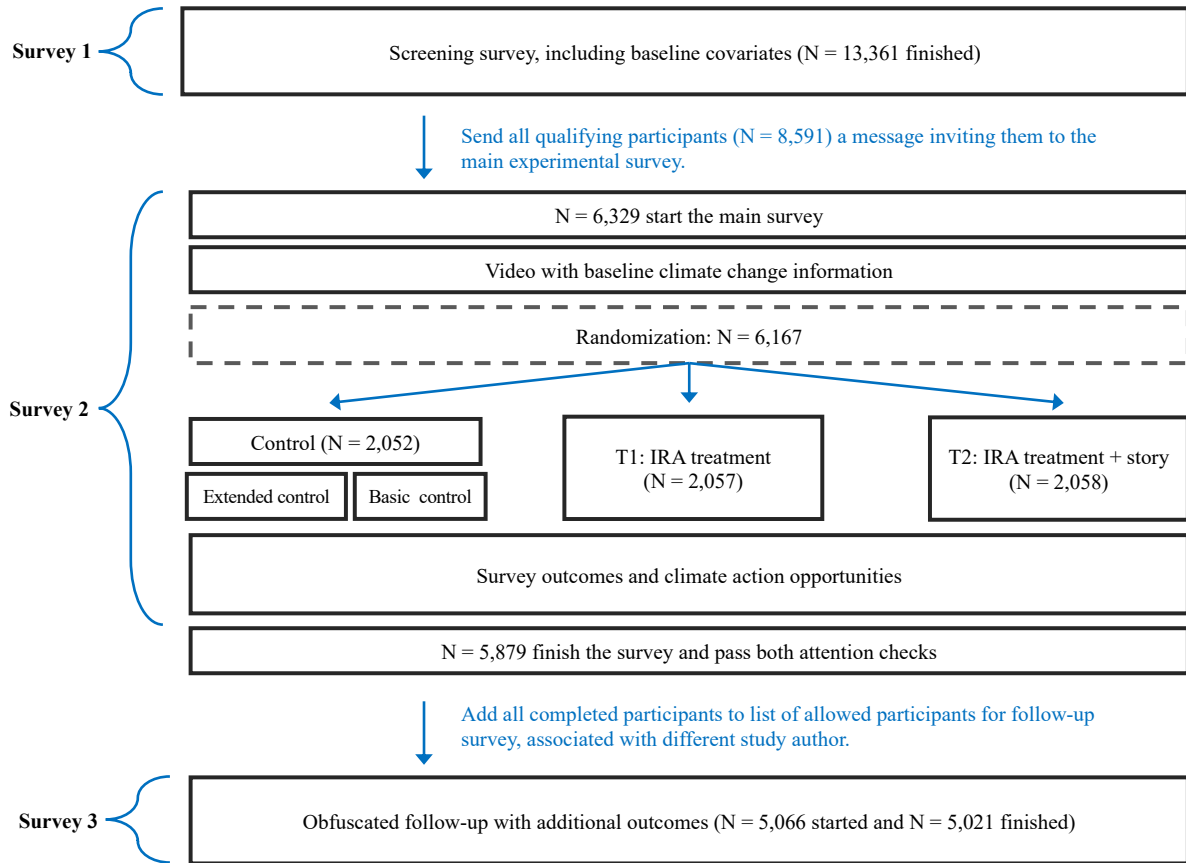


Figure A3: Baseline desire for government climate action

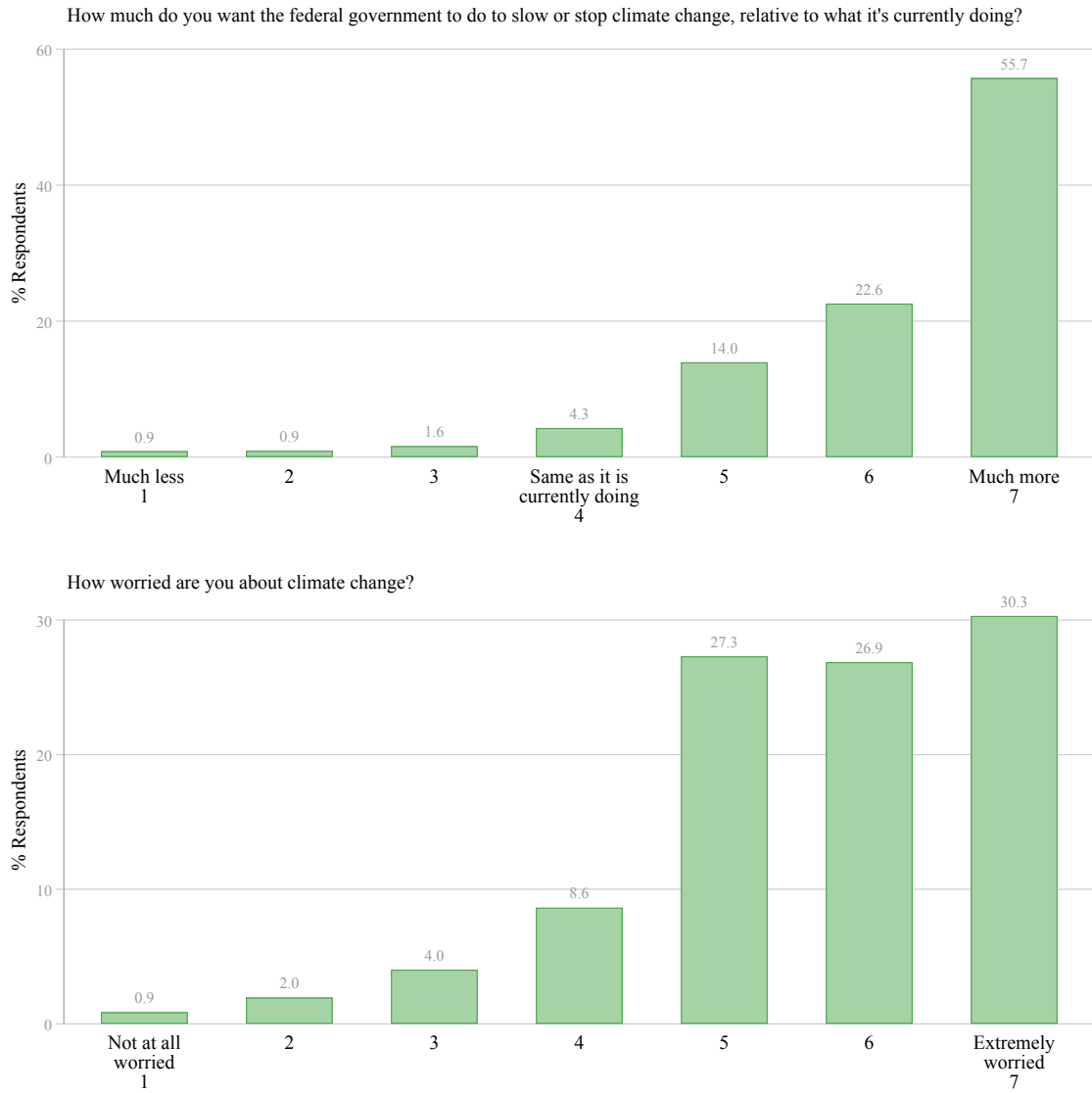
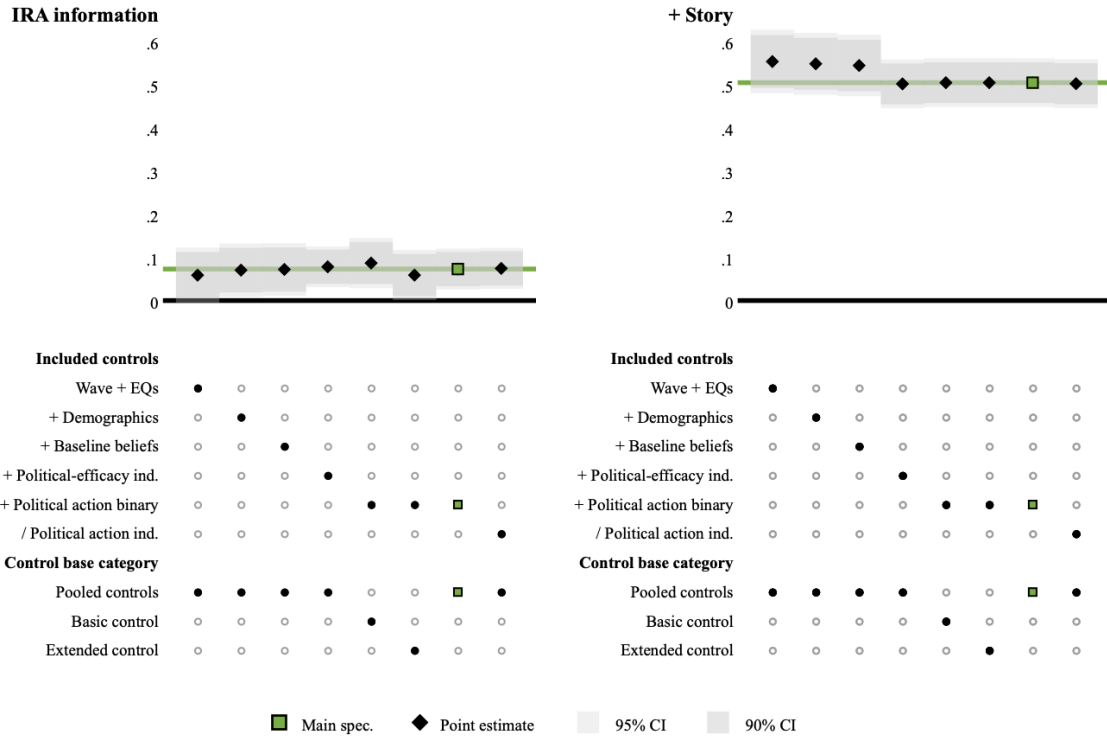
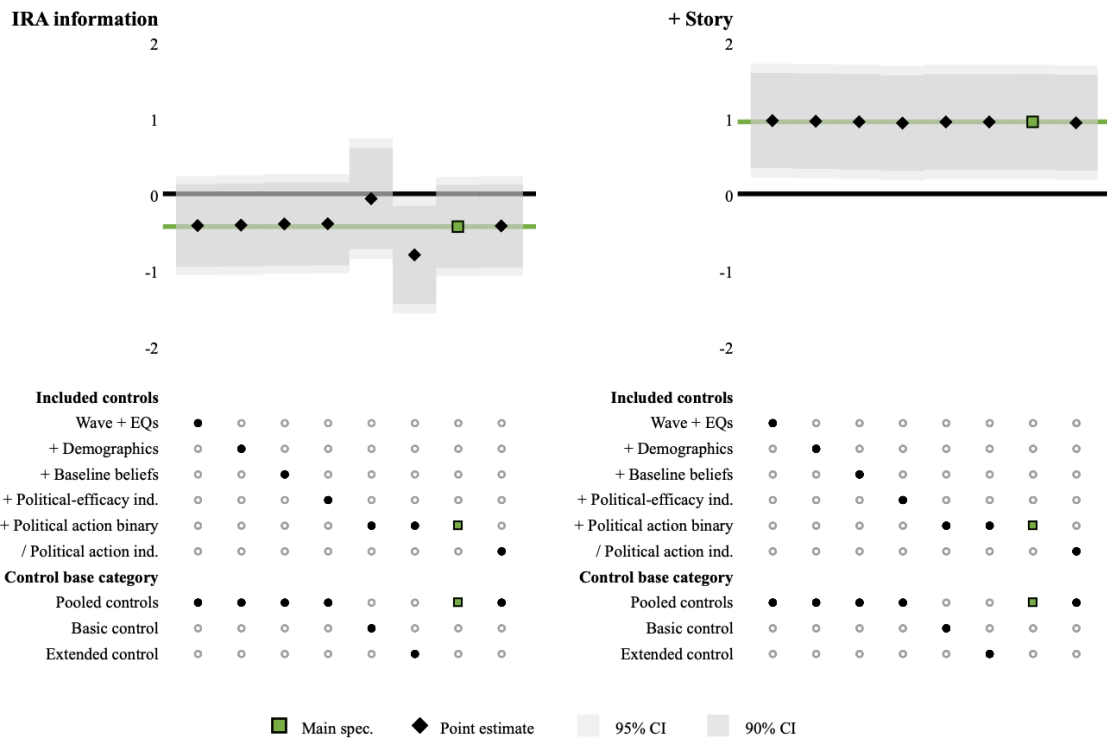


Figure A4: Specification chart: Standardized political-efficacy index, main survey



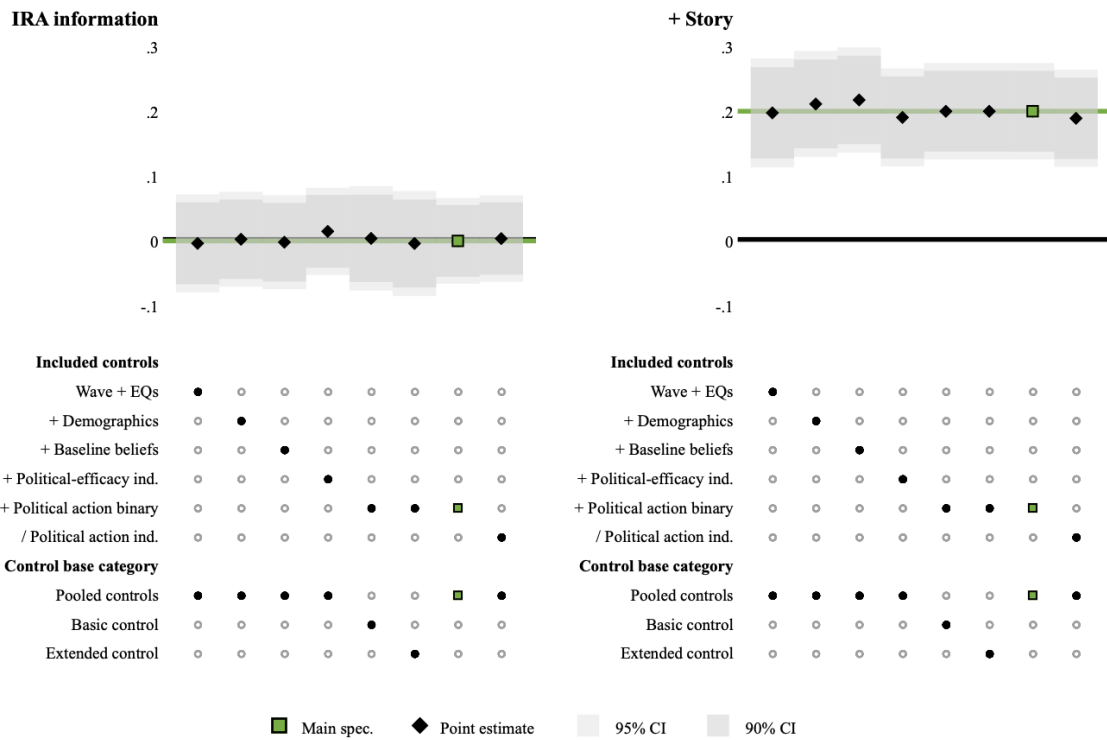
**Note:** This figure plots the impacts of the IRA information and story treatment on the main-survey political-efficacy index under a range of regression specifications. Appendix Section G describes this outcome variable in detail. Each regression follows the same basic structure as that presented in Table 1, column 4, and the colored line and colored squares reproduce the estimates from that main specification. The other specifications presented in this chart test the robustness of these estimates to (a) restricting the sample to those who pass both attention-check questions, (b) iteratively add control variables, and (c) define the omitted category for the IRA information regression coefficient to be the basic control arm, the extended control arm, or a pooled control arm.

Figure A5: Specification chart: Gradient of bill passage with respect to citizen calls



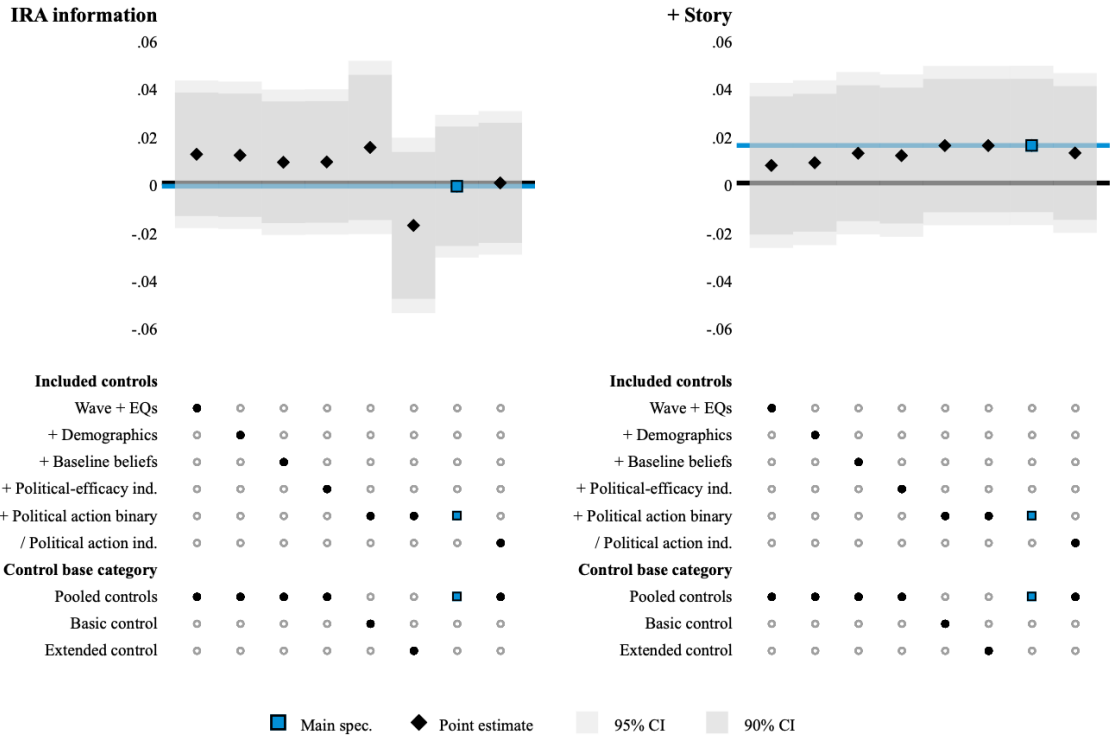
**Note:** This figure is analogous to A4, but the outcome here is the gradient in the likelihood that a climate bill would be passed if 10% of Americans called to support it rather than 2%. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 5 of Table 1. Appendix Section G describes this outcome variable in detail.

Figure A6: Specification chart: Standardized political-efficacy index, follow-up survey



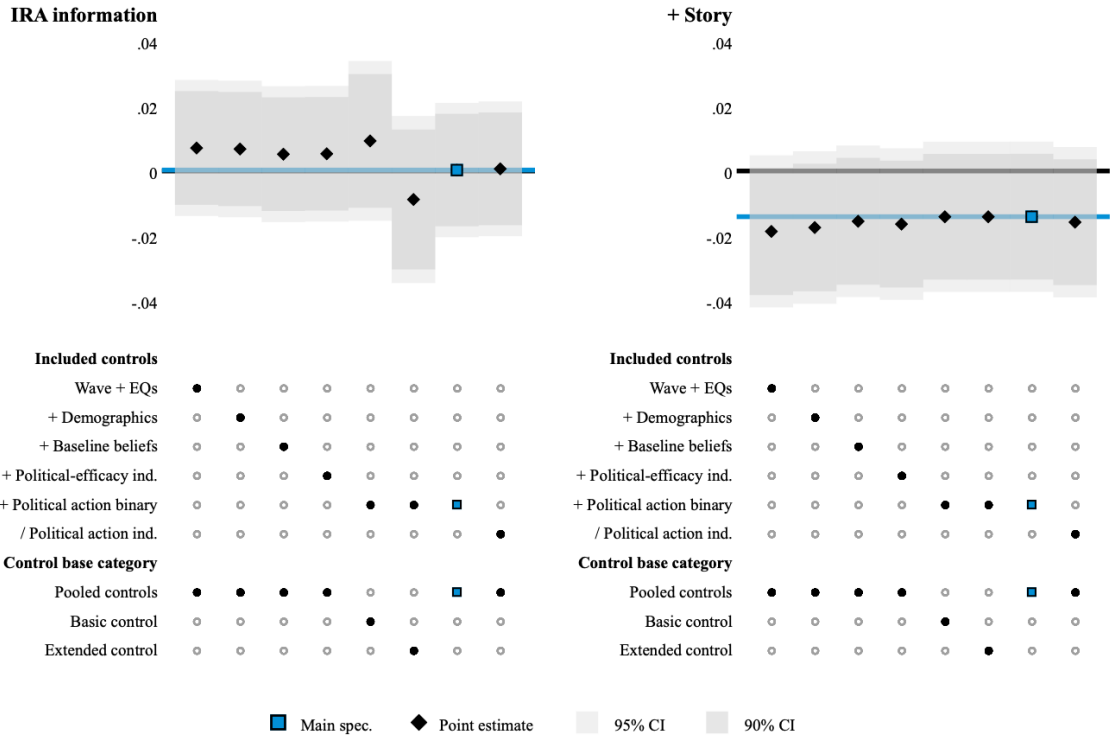
**Note:** This figure is analogous to A4, but the outcome here is the standardized index of political efficacy measured in the obfuscated follow-up survey. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 9 of Table 1. Appendix Section G describes this outcome variable in detail.

Figure A7: Specification chart: Started process of writing to Congress



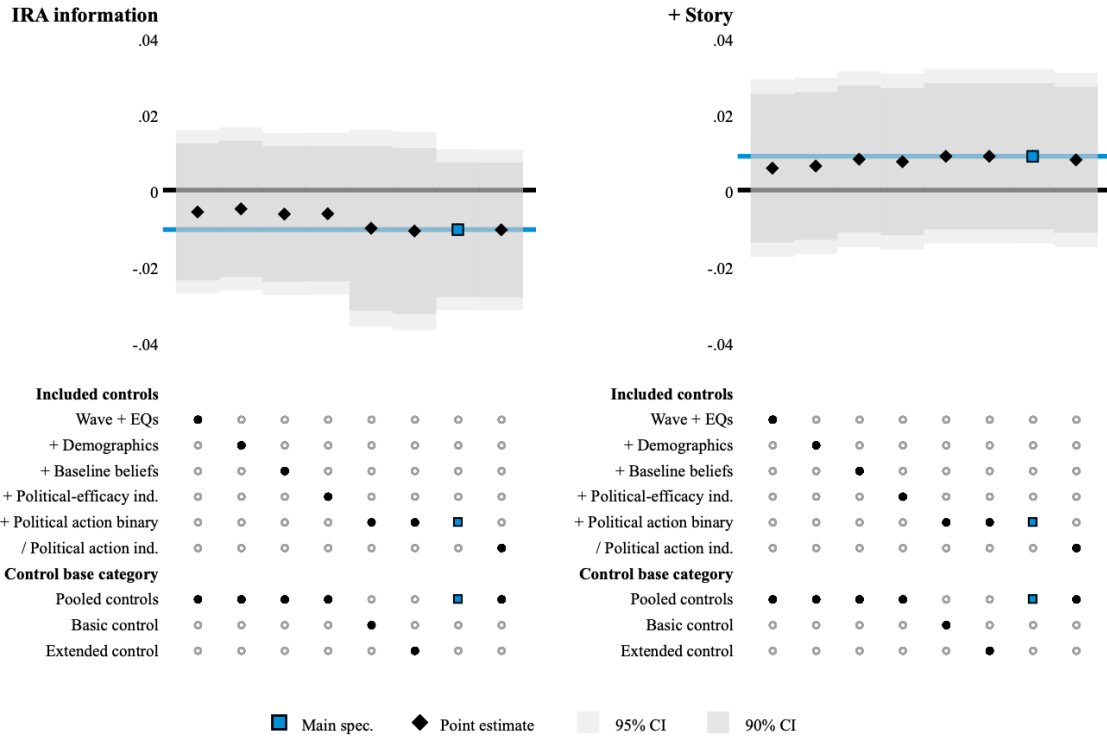
**Note:** This figure is analogous to A4, but the outcome here is whether participants opted into the process of emailing Congress. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 1 of Table 2. Appendix Section G describes this outcome variable in detail.

Figure A8: Specification chart: Wrote custom text for letter to Congress



**Note:** This figure is analogous to A4, but the outcome here is whether participants wrote out custom text to send to Congress. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 2 of Table 2. Appendix Section G describes this outcome variable in detail.

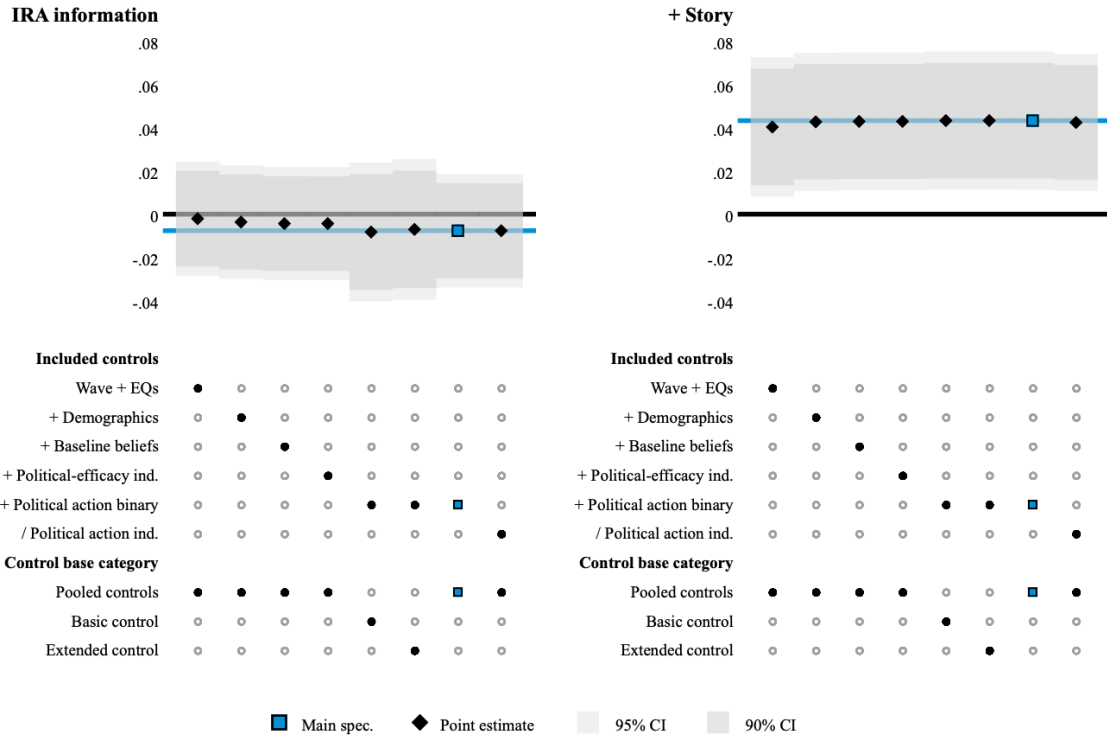
Figure A9: Specification chart: Clicked to send letter to Congress



**Note:** This figure is analogous to A4, but the outcome here is whether participants clicked a link to a portal from which to email Congress. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 3 of Table 2. Appendix Section G describes this outcome variable in detail.

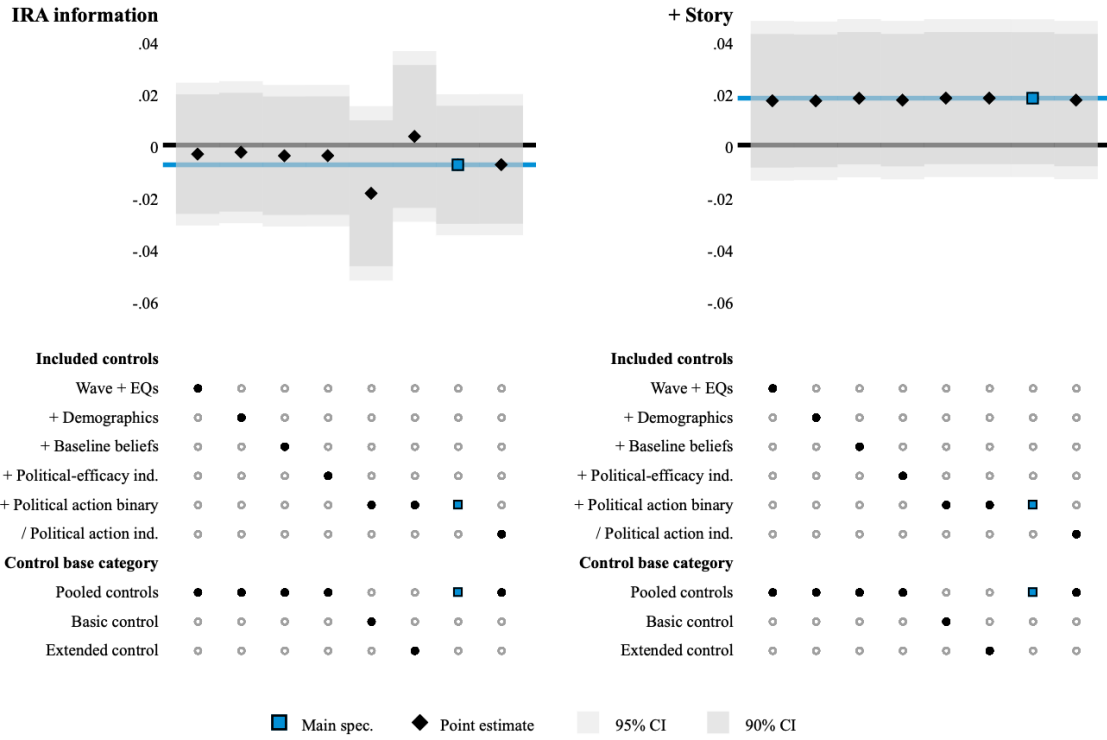


Figure A10: Specification chart: Clicked link for climate marches



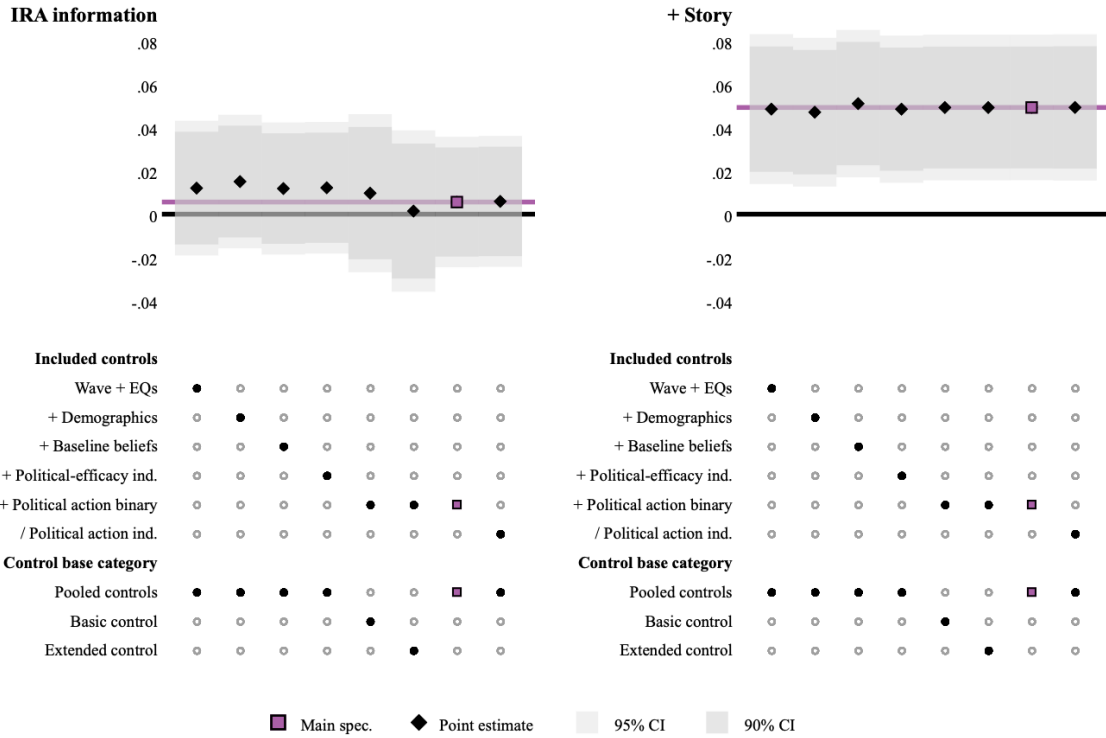
**Note:** This figure is analogous to A4, but the outcome here is whether participants clicked a link for information about nearby climate marches. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 4 of Table 2. Appendix Section G describes this outcome variable in detail.

Figure A11: Specification chart: Downloaded guide for contacting Congress



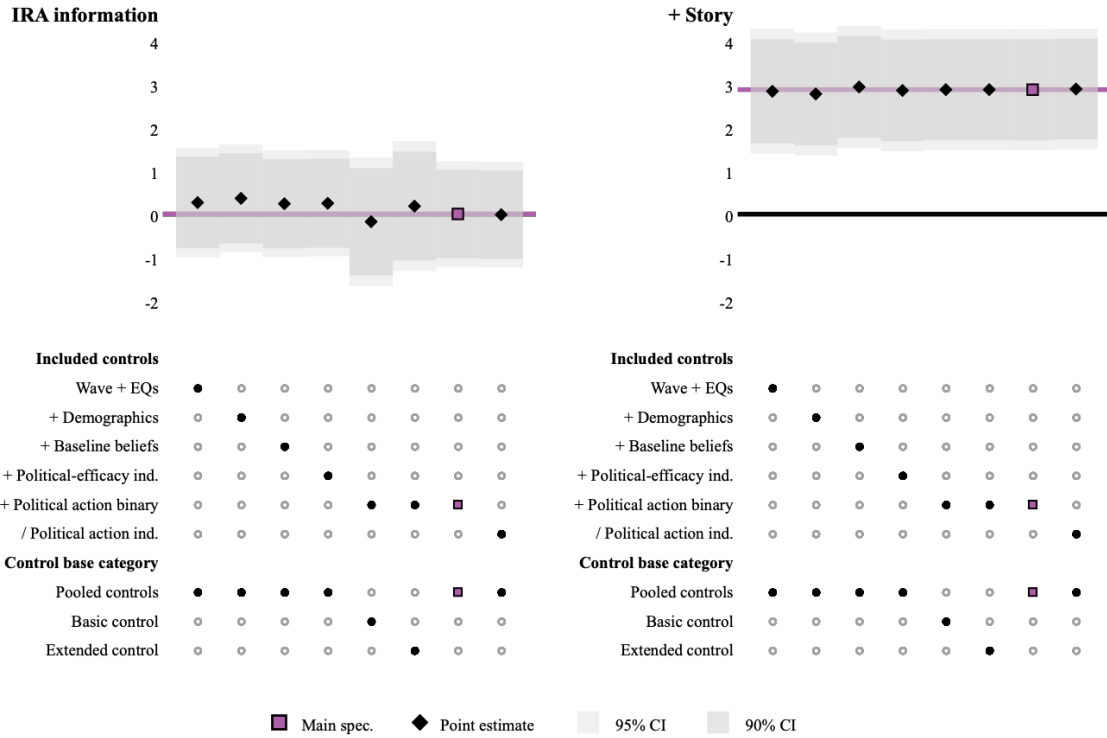
**Note:** This figure is analogous to A4, but the outcome here is whether participants downloaded the guide for contacting Congress in the follow-up survey. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 5 of Table 2. Appendix Section G describes this outcome variable in detail.

Figure A12: Specification chart: Whether donated to climate organization in main survey



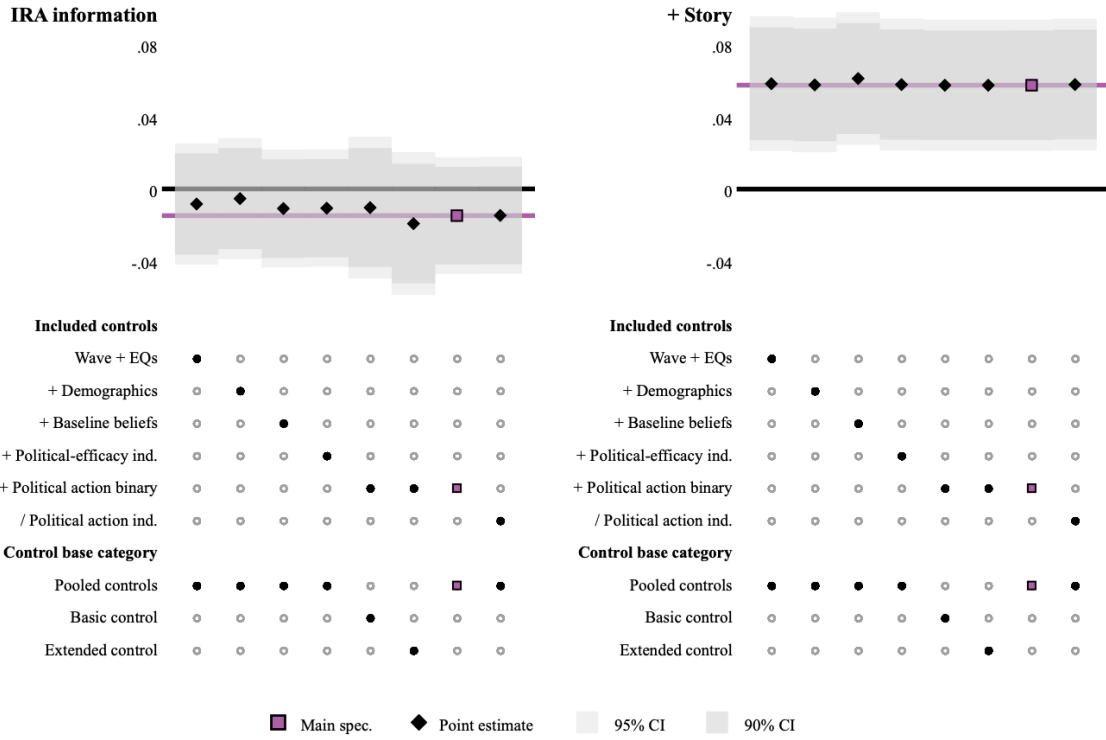
**Note:** This figure is analogous to A4, but the outcome here is whether participants donated to a climate organization during the main experimental survey. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 6 of Table 2. Appendix Section G describes this outcome variable in detail.

Figure A13: Specification chart: Amount donated to climate organization in main survey



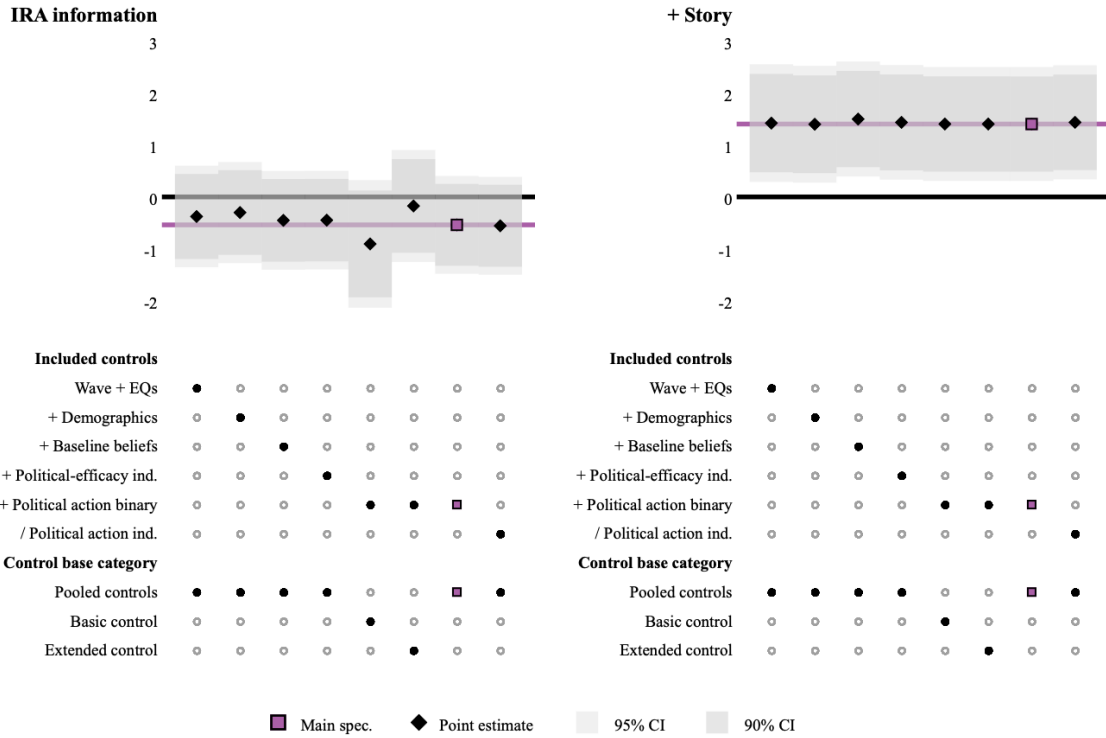
**Note:** This figure is analogous to A4, but the outcome here is the amount that participants donated to a climate organization during the main experimental survey. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 7 of Table 2. Appendix Section G describes this outcome variable in detail.

Figure A14: Specification chart: Whether donated to climate organization in follow-up survey



**Note:** This figure is analogous to A4, but the outcome here is whether participants donated to the climate organization during the obfuscated follow-up survey. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 8 of Table 2. Appendix Section G describes this outcome variable in detail.

Figure A15: Specification chart: Amount donated to climate organization in follow-up survey



**Note:** This figure is analogous to A4, but the outcome here is the amount that participants donated to a climate organization during the obfuscated follow-up survey. Our main specification for this outcome (highlighted here in the colored markers) is also presented in column 9 of Table 2. Appendix Section G describes this outcome variable in detail.

Table A1: Descriptive statistics and sample balance

	Mean: Full sample (1)	$\Delta$ Extended control (2)	$\Delta$ IRA (3)	$\Delta$ IRA + story (4)	$\Delta$ Extra questions (5)
Surveyed Wave 2	0.442	0.004 (0.022)	0.002 (0.019)	-0.001 (0.021)	0.007 (0.016)
Female	0.526	-0.009 (0.023)	0.002 (0.019)	0.001 (0.021)	-0.007 (0.016)
Age	37.184	-0.106 (0.606)	-0.456 (0.517)	-0.385 (0.555)	-0.382 (0.424)
Ethnic groups:					
Asian	0.076	0.006 (0.012)	-0.009 (0.010)	0.001 (0.011)	0.009 (0.008)
Black	0.066	0.018 (0.011)	0.015* (0.009)	0.002 (0.010)	0.003 (0.008)
White	0.738	-0.037* (0.020)	-0.016 (0.017)	-0.017 (0.018)	-0.016 (0.014)
Other	0.009	0.007 (0.005)	-0.002 (0.003)	0.002 (0.004)	0.003 (0.003)
Missing	0.112	0.006 (0.014)	0.013 (0.012)	0.011 (0.013)	0.001 (0.010)
Whether has 4 year college degree	0.555	-0.027 (0.022)	-0.009 (0.019)	0.001 (0.021)	0.003 (0.016)
Political affiliation:					
Democrat	0.587	0.013 (0.022)	-0.013 (0.019)	-0.008 (0.021)	-0.024 (0.016)
Republican	0.088	0.010 (0.013)	-0.003 (0.011)	0.008 (0.012)	-0.008 (0.009)
Independent	0.277	-0.035* (0.020)	0.007 (0.018)	-0.012 (0.019)	0.018 (0.014)
Other	0.047	0.012 (0.009)	0.009 (0.008)	0.012 (0.009)	0.014** (0.007)
Political engagement index (std)	0.040	0.035 (0.044)	0.136*** (0.039)	0.112** (0.044)	0.004 (0.033)
Prev. contacted elected reps	0.246	-0.011 (0.019)	0.024 (0.017)	0.002 (0.018)	0.005 (0.014)
Prev. donated	0.390	0.028 (0.022)	0.038** (0.019)	0.050** (0.020)	-0.002 (0.015)
Prev. canvassed	0.016	0.004 (0.005)	0.006 (0.004)	0.012** (0.005)	0.002 (0.004)
Prev. signed petition	0.591	0.012 (0.022)	0.057*** (0.019)	0.024 (0.021)	0.001 (0.016)
Prev. phonebanked	0.028	0.000 (0.007)	0.012** (0.006)	0.007 (0.007)	-0.003 (0.005)
Climate worry (std)	0.005	-0.016 (0.045)	0.032 (0.038)	-0.017 (0.041)	-0.036 (0.031)
Desire for climate action (std)	-0.017	-0.024 (0.046)	0.004 (0.040)	-0.037 (0.042)	-0.039 (0.033)
External efficacy index (std)	0.026	-0.051 (0.044)	-0.048 (0.039)	0.031 (0.042)	0.047 (0.032)

Column 1 of this table presents summary statistics of baseline characteristics for the full experiment sample, with  $N = 6,001$ . Age data are missing for 29 participants. Columns 2 through 5 then present the results of regressions testing each characteristic for balance across the randomized treatment arms. In particular, we regress each characteristic on indicators for participants' assignment to the Extended Control group, the IRA Information group, or the IRA Information + Story group, as well as an indicator for being assigned to answer the extra filler questions. (Recall that these extra questions are cross-randomized within the control groups and IRA Information group.) Robust standard errors are given below in parentheses each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively. Appendix section G.2 defines these baseline traits.

Table A2: Impacts of treatments on policy knowledge

	(1)	(2)	(3)	(4)
	Have heard of the IRA	Did govt make substantial progress on climate change in 2022?		
		Yes	Don't know	No
IRA info	0.259*** (0.013)	0.245*** (0.014)	-0.037*** (0.013)	-0.208*** (0.015)
+ Story	0.008 (0.012)	0.008 (0.017)	0.002 (0.015)	-0.010 (0.017)
N	5879	5879	5879	5879
Control mean	0.634	0.216	0.248	0.536

**Note:** This table estimates the impact of IRA information and the fictional story on participants' climate-policy knowledge. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. Columns 1 estimates impacts on whether participants check off that they've heard of the IRA on a list of four recent bills, elicited at the end of the experimental survey. Columns 2 through 4 present impacts on whether participants answer "Yes," "I don't know," or "No," respectively, when asked at the end of the experimental survey whether the US government made substantial progress on climate change during 2022. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.



Table A3: Attrition by treatment groups

	(1)	(2)	(3)	(4)	(5)	(6)
	Finished main experimental survey		Finished follow-up survey:			
			<i>Unconditional</i>		<i>If finished main</i>	
IRA info	-0.004 (0.006)	-0.004 (0.006)	0.009 (0.012)	0.011 (0.011)	0.006 (0.011)	0.008 (0.011)
+ Story	-0.019*** (0.007)	-0.019*** (0.007)	-0.023* (0.013)	-0.024* (0.013)	-0.006 (0.012)	-0.006 (0.012)
<i>Control variables:</i>						
Wave and EQ	✓	✓	✓	✓	✓	✓
Full controls		✓		✓		✓
Control mean	0.967	0.967	0.835	0.835	0.848	0.848
N	6167	6167	6167	6167	6001	6001

**Note:** This table documents differential attrition across treatment arms. In each column, we regress the attrition outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. In columns 1 and 2, we test whether participants differentially finished the main experimental survey and passed at least one attention check—thus qualifying for our main sample—by treatment arm. In columns 3 through 6, we test whether participants differentially showed up to and completed the obfuscated follow-up survey by treatment arm. Columns 3 and 4 test for differential attrition through the obfuscated follow-up survey without conditioning on completing the main experimental survey, while columns 5 and 6 test whether participants who finished the main experimental survey differentially completed the follow-up survey. Columns 1, 3, and 5 only control for wave number and whether participants were assigned to complete the extra questions, while columns 2, 4, and 6 also control for demographics, climate attitudes, political efficacy, and political engagement. The only difference between this set of “full” controls and those listed in the note for Table 1 is that here we exclude controls for college attainment and political affiliation. We elicited these variables at the end of the main experimental survey, so they are missing for those who did not complete that survey. We detail all control variables in Appendix Section G.2. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table A4: Impacts of treatments on political efficacy: Lower Lee (2009) bounds

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<b>Main survey:</b>					<b>Follow-up survey:</b>			
	Agreement that:					Agreement:	How effective on		
	People like me have no say	Lobbyists have more power	Gov't responds citizens	Index (all +)	$\Delta$ P(Pass bill) if 2% -10% call	Citizen movements make change	govt policy? Marches    Contacts		Index
IRA info	-0.065** (0.027)	-0.070*** (0.026)	0.143*** (0.028)	0.109*** (0.024)	0.381 (0.305)	0.107*** (0.034)	0.096*** (0.034)	0.087** (0.035)	0.094*** (0.033)
+ Story	-0.327*** (0.032)	-0.343*** (0.029)	0.377*** (0.031)	0.465*** (0.028)	0.162 (0.359)	0.136*** (0.038)	0.050 (0.038)	0.006 (0.040)	0.102*** (0.037)
N	5840	5840	5840	5840	5840	3829	3829	3829	3829
Control mean	0.000	0.000	0.000	-0.000	9.029	0.000	-0.000	-0.000	-0.000

**Note:** This table presents lower bounds for the regression coefficients presented in Table 1, accounting for differential attrition between those who were or were not assigned to watch the fictional climate-action story. As described in Lee (2009), we estimate lower-bound treatment effects of the climate story for each outcome by selectively dropping “control” participants—who received IRA information but did not watch the climate story—to equalize attrition across the IRA-Info and IRA-Info-plus-Story groups. For each outcome, we drop control participants with the lowest or highest residualized outcomes when our main story-treatment estimate for that outcome is positive or negative, respectively. We estimate differential attrition for each outcome, residuals from our main treatment regressions, and these attrition-adjusted regressions including the full set of controls included in columns 2, 4, and 6 of Table A3. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table A5: Impacts of treatments on climate donations and citizen advocacy: Lower Lee (2009) bounds

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<b>Climate donation outcomes:</b>				<b>Direct-action outcomes:</b>				
	<i>Main survey:</i>		<i>Follow-up:</i>		<i>Main survey:</i>				<i>Follow-up:</i>
	Y/N	Amount	Y/N	Amount	Sending letter to Congress:			Clicked for march	Downloaded guide
					Said interested	Wrote letter	Clicked to send		
IRA info	0.022 (0.015)	0.586 (0.624)	0.004 (0.016)	-0.088 (0.483)	0.011 (0.015)	-0.019* (0.010)	-0.004 (0.011)	0.001 (0.014)	0.004 (0.014)
+ Story	0.035** (0.017)	2.348*** (0.712)	0.040** (0.019)	0.991* (0.563)	0.002 (0.017)	0.004 (0.011)	0.002 (0.012)	0.035** (0.016)	0.006 (0.016)
N	5840	5840	4976	4976	5840	5840	5828	2573	4976
Control mean	0.511	14.944	0.438	8.552	0.426	0.126	0.145	0.079	0.210

**Note:** This table presents lower bounds for the regression coefficients presented in Table 2, accounting for differential attrition between those who were or were not assigned to watch the fictional climate-action story. Our approach in these regressions is analogous to that in Appendix Table A4. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table A6: Effects on donations to each cause in the follow-up survey

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	<i>Any cause</i>		<i>Reproductive</i>		<i>Gun control</i>		<i>Free-market</i>		Y/N	Amount	Y/N	Amount	Y/N	Amount	Y/N	Amount
IRA info	0.011	0.920	0.031*	1.394***	-0.002	0.292	-0.008	-0.226	(0.016)	(0.995)	(0.016)	(0.476)	(0.016)	(0.335)	(0.014)	(0.251)
+ Story	0.047***	3.015***	0.024	0.904	0.028	0.091	0.033**	0.615**	(0.018)	(1.120)	(0.018)	(0.573)	(0.018)	(0.364)	(0.016)	(0.272)
N	5021	5021	5021	5021	5021	5021	5021	5021								
Control mean	0.558	23.341	0.402	7.239	0.325	4.647	0.226	2.903								

**Note:** This table estimates the impact of IRA information and the fictional story on participants' total donations and donations to non-climate causes in the obfuscated follow-up survey. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. Columns 1 and 2 present whether participants donated to any cause and how much they donated in total (including to the climate organization). Columns 3 through 8 then estimate impacts on whether and how much participants donated to advocacy groups focusing on productive rights, gun control, and free market policy. Appendix Section G defines all of these outcome variables in detail. We stratify these regressions by whether participants took the follow-up survey 0-1 days (Panel A), 2-4 days (Panel B), or 5+ days (Panel C) after the main experimental survey. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively. The last two rows of the table present p-values testing whether we can reject that the treatment effects of the IRA information and fictional story are equal across panels.

Table A7: Correlations between action index and emotions in the control group

	(1)	(2)	(3)
<b>Motivation-related</b>		<b>Other positive</b>	<b>Other negative</b>
Hope / strength	0.023 (0.021)	Happiness -0.018 (0.011)	Sadness 0.025 (0.024)
Motivation	0.067*** (0.021)	Peacefulness -0.030** (0.014)	Anger 0.073*** (0.024)
Pessimism	0.072*** (0.027)	Connectedness 0.034* (0.018)	Anxiety 0.093*** (0.023)
Apathy / fatigue	-0.086*** (0.018)	Yearning -0.003 (0.023)	Surprise / doubt 0.039 (0.024)
			Guilt -0.000 (0.023)
Sample size:	1968		

**Note:** This table presents bivariate correlations between an index of climate action and each emotion outcome, estimated in the pooled Basic and Extended Control groups. We construct an index of climate action as the standardized sum of standardized variables for each climate-action outcome included in Table 2. We then separately regress this index on standardized measures of how strongly participants reported each of the emotion categories described in Appendix Section G. This table presents the estimated coefficients for motivation-related outcomes in column 1, for other positive emotions in column 2, and for other negative emotions in column 3. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table A8: Impacts of treatments on climate worry and desire for action

	(1)	(2)	(3)	(4)	(5)
	<b>Main survey:</b>				<b>Follow-up:</b>
	Worry about climate	Desire for govt action	Priority on climate in Congress	Summary index	Hope that Congress focuses on climate
IRA info	-0.009 (0.020)	-0.105*** (0.024)	0.001 (0.028)	-0.046** (0.020)	-0.041 (0.030)
+ Story	0.086*** (0.021)	0.156*** (0.028)	0.073** (0.030)	0.129*** (0.022)	0.074** (0.032)
N	6001	6001	6001	6001	5125
Control mean	-0.000	0.000	-0.000	-0.000	-0.000

**Note:** This table estimates the impact of IRA information and the fictional story on participants' climate worry and desire for government action. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. Columns 1 through 4 present impacts on outcomes collected during the main experimental survey: worry about climate change, desire for additional government climate action, desire for Congress to prioritize climate change relative to other issues, and an index combining these measures. Column 5 presents impacts on how much participants in the obfuscated follow-up survey state that they want the current Congress to focus on climate change. All of these outcomes are standardized, and Appendix Section G defines them in detail. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table A9: Effects on beliefs about support and advocacy for climate policy

	(1)	(2)	(3)
	# of Americans that would say climate change is a prob for govt	Of those, # that would call to support bill	Share concerned that would call
IRA info	0.608 (0.542)	0.046 (0.459)	-0.002 (0.009)
+ Story	-0.041 (0.600)	1.206** (0.528)	0.025** (0.010)
N	5879	5879	5879
Control mean	55.923	16.497	0.302

**Note:** This table estimates the impact of IRA information and the fictional story on participants' beliefs about other Americans' support and action on climate policy. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. Column 1 presents impacts on participants' beliefs about the number of Americans that would say climate change is a problem that the US government should take action to solve. Column 2 presents impacts on participants' beliefs about the number of Americans who would call or email their national representatives to support a climate bill if it were proposed in the next few months. Column 3 then combines Columns 1 and 2 by presenting impacts on participants' implied beliefs for the share of Americans who would contact Congress among those who support government action on climate change. Appendix Section G defines all of these outcome variables in detail. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table A10: Effects of on political efficacy by wave

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<b>Main survey:</b>					<b>Follow-up survey:</b>			
	Agreement that:					Agreement:	How effective on		
	People like	Lobbyists	Gov't	Index	$\Delta$ P(Pass	Citizen	govt policy?		Index
	me have	have more	responds	(all +)	bill) if 2%	movements	Marches	Contacts	
	no say	power	citizens		to 10% call	make change			
<i>Panel A: Wave 1</i>									
IRA info	-0.001 (0.036)	-0.040 (0.037)	0.104*** (0.038)	0.063* (0.033)	-0.534 (0.444)	-0.016 (0.055)	-0.066 (0.054)	-0.071 (0.055)	-0.060 (0.053)
+ Story	-0.410*** (0.044)	-0.391*** (0.039)	0.423*** (0.042)	0.532*** (0.038)	1.133** (0.519)	0.252*** (0.060)	0.229*** (0.060)	0.095 (0.062)	0.227*** (0.058)
Extra Qs	-0.066* (0.037)	-0.132*** (0.037)	0.015 (0.038)	0.092*** (0.033)	0.418 (0.444)	0.002 (0.056)	-0.006 (0.054)	-0.133** (0.056)	-0.054 (0.053)
N	3280	3280	3280	3280	3280	1731	1731	1731	1731
Control mean	0.035	0.064	-0.038	-0.059	8.165	-0.005	-0.001	0.046	0.016
<i>Panel B: Wave 2</i>									
IRA info	-0.058 (0.042)	-0.017 (0.039)	0.097** (0.042)	0.075** (0.036)	-0.287 (0.510)	0.021 (0.045)	0.050 (0.047)	0.030 (0.048)	0.040 (0.044)
+ Story	-0.302*** (0.049)	-0.376*** (0.045)	0.406*** (0.048)	0.471*** (0.044)	0.688 (0.581)	0.213*** (0.052)	0.107** (0.054)	0.116** (0.055)	0.172*** (0.050)
Extra Qs	-0.047 (0.042)	0.039 (0.039)	0.044 (0.042)	0.023 (0.036)	-0.467 (0.508)	0.082* (0.045)	0.032 (0.047)	0.035 (0.047)	0.059 (0.044)
N	2599	2599	2599	2599	2599	2168	2168	2168	2168
Control mean	-0.045	-0.081	0.048	0.076	10.128	0.003	0.001	-0.036	-0.012
<i>p-val: IRA info</i>	0.294	0.665	0.903	0.802	0.713	0.605	0.104	0.162	0.143
<i>p-val: + Story</i>	0.102	0.796	0.792	0.293	0.565	0.620	0.126	0.799	0.471

**Note:** This table estimates impacts of the IRA information and fictional story on the political-efficacy outcomes, stratified by wave of participant recruitment. Wave-1 participants were recruited to the main experimental survey from November 2 through November 9, 2022, and Wave-2 participants were recruited from January 13 through February 8, 2023. Appendix Section B details these recruitment waves. All outcomes match those reported in Table 1. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. In addition to reporting the coefficients on the IRA-information and climate-story treatment indicators, we also report coefficients on an indicator that participants were assigned to the extra filler questions in each wave. Appendix Section E describes these filler questions, which differed across recruitment waves 1 and 2. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively. The last two rows of the table present p-values testing whether we can reject that the treatment effects of the IRA information and fictional story are equal across recruitment waves.

Table A11: Effects of on climate action by wave

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<b>Climate donation outcomes:</b>				<b>Direct-action outcomes:</b>				
	<i>Main survey:</i>		<i>Follow-up:</i>		<i>Main survey:</i>				<i>Follow-up:</i>
	Y/N	Amount	Y/N	Amount	Sending letter to Congress:			Clicked for march	Downloaded guide
					Said interested	Wrote letter	Clicked to send		
<i>Panel A: Wave 1</i>									
IRA info	0.012 (0.020)	0.438 (0.825)	-0.025 (0.022)	0.176 (0.643)	0.005 (0.020)	0.014 (0.014)	-0.026* (0.014)		-0.021 (0.019)
+ Story	0.013 (0.023)	2.002** (0.934)	0.051** (0.024)	0.910 (0.739)	0.001 (0.023)	-0.027* (0.016)	0.014 (0.016)		-0.001 (0.021)
Extra Qs	0.032 (0.020)	2.318*** (0.830)	0.032 (0.022)	1.245* (0.648)	-0.027 (0.020)	-0.012 (0.014)	0.009 (0.014)		-0.007 (0.019)
N	3280	3280	2853	2853	3280	3280	3273		2853
Control mean	0.512	14.186	0.422	7.345	0.419	0.115	0.143		0.231
<i>Panel B: Wave 2</i>									
IRA info	-0.009 (0.023)	-0.653 (0.957)	-0.005 (0.025)	-1.429** (0.726)	-0.008 (0.023)	-0.018 (0.016)	0.007 (0.016)	-0.008 (0.013)	0.010 (0.021)
+ Story	0.095*** (0.026)	3.934*** (1.094)	0.068** (0.029)	1.982** (0.859)	0.035 (0.026)	0.003 (0.017)	0.004 (0.018)	0.043*** (0.016)	0.046* (0.024)
Extra Qs	0.024 (0.023)	0.061 (0.948)	0.034 (0.025)	-0.464 (0.728)	0.003 (0.023)	-0.007 (0.016)	0.010 (0.016)	0.001 (0.013)	0.025 (0.021)
N	2599	2599	2168	2168	2599	2599	2596	2595	2168
Control mean	0.509	15.907	0.461	10.152	0.435	0.140	0.149	0.079	0.183
<i>p-val: IRA info</i>	0.493	0.385	0.564	0.096	0.669	0.141	0.128		0.258
<i>p-val: + Story</i>	0.018	0.177	0.643	0.341	0.326	0.205	0.662		0.129

**Note:** This table estimates impacts of the IRA information and fictional story on the climate-action outcomes, stratified by wave of participant recruitment. This table is fully analogous to Appendix Table A10 above. All outcomes match those reported in Table 2, though we only observe whether participants click for climate-march information in the second recruitment wave. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

Table A12: Effects on probabilistic beliefs about passing climate policy

	(1) Prob that US meets 2030 goal	(2) Prob that limit warming to 1.5°	(3) Prob pass climate bill if: if 2% call	(4) if 10% call	(5) Δ Prob pass climate bill
IRA info	5.735*** (0.561)	1.767*** (0.606)	3.008*** (0.642)	2.576*** (0.708)	-0.431 (0.333)
+ Story	0.441 (0.653)	1.717** (0.688)	1.640** (0.733)	2.588*** (0.805)	0.948** (0.383)
N	5879	5879	5879	5879	5879
Control mean	28.691	31.207	40.308	49.337	9.029

**Note:** This table estimates the impact of IRA information and the fictional story on participants’ beliefs about the probability that we hit global and national climate goals and that the US would pass hypothetical climate policy. In each column, we regress the outcome variable on an indicator for receiving IRA information and an indicator for additionally watching the fictional climate story. We include the same control variables listed in the note for Table 1 and detailed in Appendix Section G.2. Columns 1 and 2 present impacts on participants’ estimates for the probability that the US will meet its 2030 emissions commitment under the Paris Agreement and that globally we will limit warming to 1.5° C. Columns 3 and 4 present impacts on participants’ estimates for the probability that the US Congress would pass a climate bill if it were proposed in the next few months and if 2% and 10% of Americans contacted their representatives to support it, respectively. Column 5 presents impacts on participants’ estimates for how much more likely Congress would be to pass the climate bill if 10% rather than 2% of Americans contacted them in support. (We also present these estimates in Table 1.) Appendix Section G defines all of these outcome variables in detail. Robust standard errors are given in parentheses below each coefficient. \*, \*\*, and \*\*\* indicate significance at the 0.1, 0.05, and 0.01 percent level, respectively.

## B Study recruitment

Participants were recruited to the study in two “waves,” first in November 2022 and again in January 2023. While we originally planned to recruit the full sample at once before the 2022 midterm elections, recruitment was slower than anticipated. Thus, we paused the study just after the 2022 midterm elections due to concerns that the change in political representation could affect our results. We updated our pre-analysis plan on January 11, 2023 to describe this change in plans ([link](#)). The following information describes the same information as in the updated PAP, with some additional context.

Specifically, we waited to resume data collection until the new Congress was sworn in, which occurred several days before we posted the PAP update. The delay allowed us to ensure that uncertainty in Congressional leaders’ status would not depress the rates at which participants contacted their legislators. In the interim, we presented the results with the first half of data collection at an internal MIT seminar, which led us to make two changes to the study.

First, recall that half of the sample in the IRA-only and control groups were randomly assigned to answer additional filler questions that were timed to take 5 minutes, the length of the fictional story video, in order to ensure that the additional length of the survey was not causing its own effects or differential attrition between groups. After halting the first recruitment wave, we observed that the open-ended filler questions designed to control for the duration of the climate action story were producing potentially large priming effects, so we decided to re-adjust this condition

to control only for time effects. To do so, we changed the items from open-ended questions about themes related to the story to multiple choice questions about scientific topics. These questions do not refer to climate change or any adjacent topics (temperature, erosion, etc.). We describe the filler questions themselves in more detail in Appendix E.

Second, we saw that while the story was affecting participants' beliefs, there were no significant effects on whether participants contacted Congress or donated to climate organizations.<sup>14</sup> One possible explanation for this gap was that the action outcomes were not close enough to the behaviors represented in the story: namely, the story focuses on citizen marches, rather than contacting legislators. If the story inspires participation in immediately-related forms of pro-climate action but not others, our previously identified outcomes might miss these effects. Thus, we added an additional secondary outcome to see whether the story affects participants' interest in participating in climate marches or demonstrations.

Our main results control for the wave in which a participant completed the survey. Appendix Tables A10 and A11 show our main results separately by wave and the coefficients on an indicator for being in the group randomized to receive the filler questions. (We include this indicator as a control in our main specifications, but we do not include its estimate coefficient in the main tables).

## C Obfuscating the follow-up survey

We design the obfuscated follow-up so that participants cannot connect it to the main experimental survey. Specifically, the first two surveys were posted on Prolific under Lucy Page's name, while the obfuscated follow-up survey was posted on Prolific under Hannah Ruebeck's name. The follow-up used a different survey font, header, consent-form layout, and color scheme than the earlier surveys and was advertised as being about general political activity, while the earlier surveys were listed as studying climate change. The follow-up survey was much shorter, and even questions that measured the same construct as in the main survey were formatted differently. All of the questions in the obfuscated follow-up referred to multiple other policy issues in addition to climate change.

When we re-contacted participants between the screening and main surveys, they were sent a direct Prolific message with a link to the main survey. Participants were never invited via a direct message to the follow-up survey; instead, they were simply added to a list of eligible Prolific accounts and saw the obfuscated follow-up as one of any number of available Prolific surveys. 85 percent of participants in the main sample completed the obfuscated follow-up survey; we attribute the high return rate to its very short duration (2 minutes). The only information that could link the follow-up survey with the earlier surveys is that all were fielded by researchers from MIT Economics. However, no participants indicated that they connected the obfuscated follow-up survey with the earlier surveys.

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<sup>14</sup>This latter result became significant when we had recruited the full pre-registered sample.



## **D Story production**

The 5-minute fictional story video was animated by an animation firm based in the UK and voiced by professional voice actors. Before getting the story animated, we asked small samples of Prolific users to read and react to several variations of its main text.

In a first survey with 31 respondents, we asked participants to read two different stories and compare them – one centered on Annie organizing a climate march on her own, while the second focused on Annie’s conversation with an older man who explained why he was organizing a climate march. We selected elements from each draft story to include in the final version, based on pilot participants’ written responses about why they liked each, which would be a better story when it was illustrated and animated, and what they thought could be improved to make each story more enjoyable and effective at motivating action. In a second survey with 45 respondents, we provided participants with the text of a story that was very close to the story used in the main experiment, but randomly varied the ending. One version ended with the Gilbert March shown in the final story, another ended with a senator who was influenced by the march and eventually confirmed that she would help to draft a climate bill in response, and a final version with lawmakers coming together to actually pass a bill. Again, the final video included a combination of these candidate endings, compiled based on participants’ emotional responses and open-ended reactions to the story – what they found boring, memorable, unrealistic, etc. We also asked if the story would change the way they felt about the likelihood that the US can address climate change.

Our analysis of both surveys was purely qualitative, and we used participants’ reactions to make sure the story was as natural, interesting, and moving as possible. While we originally developed the story before the passage of the IRA, aiming solely to build political efficacy, we adapted the very end of the story in August 2022. Our revised ending accounted for the passage of the IRA and positioned the Gilbert March as a quasi-backstory to the bill’s passage.

We provided a narrative script to the animation firm Cut The Mustard, which they adapted to be appropriate for a 5-minute video. We iterated with them on character sketches, storyboards, color schemes, and music before they produced the final product. The research team recruited two voice actors on Fiverr and provided their recordings to Cut The Mustard. We contracted with Cut The Mustard in late June 2022 and they provided the final product at the end of October 2022.

## **E Filler questions**

The fictional climate story has a duration of about 5 minutes. To ensure that any treatment effects of the fictional story do not derive just from a longer survey, we also cross-randomize half of all participants not assigned to watch the story to answer additional “filler questions” ensuring that their surveys also take five minutes longer. Initially,

these were a series of open-ended questions with minimum-time timers that focused on events and themes similar to those referenced in the story, helping us to also rule out the possibility that the story acts simply as a prime. However, as discussed in Appendix B, we changed the filler questions before launching the second wave of study recruitment because the questions themselves seemed to have large priming effects; we designed the filler questions in the second round of data collection to control only for duration effects. In the second wave, we asked multiple choice questions about scientific topics (without any reference to climate change) with timers to ensure that participants spent exactly 5 minutes answering them.

## **E.1 Open-ended filler questions**

We introduced the open-ended questions to participants as chance to hear their thoughts about climate change and politics; we described the time restrictions (1 minute per question) as encouragement to think carefully about each question. The questions were as follows:

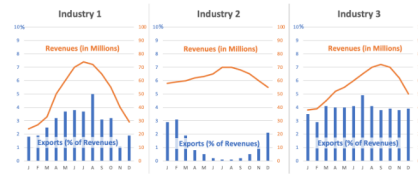
1. As a warm-up question, think about any childhood pets that your family had. Did you have pets? If so, what were they like?
2. Next, think about whenever in your life you first learned about climate change. Roughly how old were you when you learned about climate change, and in what context? For example, did you learn about climate change in school? How did you feel about climate change when you first learned about it?
3. Next, to what extent do you feel like you're personally seeing the impacts of climate change in the world, maybe through changes in weather or natural disasters?
4. Next, some people choose to personally advocate for climate policies by calling their Senators, showing up to marches, or writing opinion pieces in their local newspapers. We might call those people "climate activists." In your mind, what kind of people tend to be climate activists?
5. Finally, some people think that engaging with politics on issues like climate change (for example, by calling your Senators or going to climate marches) is useless. Do you agree with that? Why or why not?

Panel A in each of Appendix Tables A10 and A11 show the effects of being randomly assigned to answer these questions on our outcomes of interest. Answering these questions increased the main-survey political-efficacy index by 0.09sd while reducing participants' estimates of the effectiveness of emailing Congress in the follow-up survey by 0.13sd. The filler questions substantially increased climate donations in the main survey by \$2.32 and by \$1.25 in the follow-up survey.

## **E.2 Multiple choice filler questions**

In the second wave, participants randomly assigned to answer filler questions took a “general science knowledge” quiz with 20 multiple-choice questions. Participants could only progress to the next page of the survey after 4 minutes and 50 seconds had elapsed, and the page automatically advanced after 5 minutes had elapsed. We asked participants not to look up the answers to any questions, which were as follows:

These graphs show the monthly revenues and exports as a percent of revenues for three industries over the course of one year. Based on the graphs, which industry has the greatest annual range of monthly revenues?



A scientist is conducting a study to determine how well a new medication treats ear infections. The scientist tells the participants to put 10 drops in their infected ear each day. After two weeks, all participants' ear infections had healed.

Which of the following changes to the design of this study would most improve the ability to test if the new medication effectively treats ear infections?

- Create a second group of participants with ear infections who use 15 drops a day
- Have participants put ear drops in both their infected ear and healthy ear
- Have participants use ear drops for only one week
- Create a second group of participants with ear infections who do not use any ear drops

- Industry 1
- Industry 2
- Industry 3
- They all have the same range of monthly revenues

Which of the following is an example of genetic engineering?

- Growing a whole plant from a single cell
- Finding the sequences of bases in plant DNA
- Attaching the root of one type of plant to the stem of another type of plant
- Inserting a gene into plants that makes the plant resistant to insects

Many diseases have an incubation period. Which of the following best describes what an incubation period is?

- The recovery period after being sick
- The period during which someone has an infection, but is not showing symptoms
- The period during which someone builds up immunity to a disease
- The effect of a disease on babies

What is the main cause of seasons on the Earth?

- The tilt of the Earth's axis in relation to the sun
- The distance between the Earth and the sun
- Changes in the amount of energy coming from the sun
- The speed that the Earth rotates around the sun

What molecule absorbs sunlight during photosynthesis?

- Thylacoid
- Chlorophyll
- Sucrose
- Oxygen

The time a computer takes to start has increased dramatically. One possible explanation for this is that the computer is running out of memory. This explanation is a scientific...

- Experiment
- Hypothesis
- Observation
- Conclusion

An antacid relieves an overly acidic stomach because the main components of antacids are ...

- Acids
- Neutral
- Isotopes
- Bases

Which of these is a major concern about the overuse of antibiotics?

- It can lead to antibiotic-resistant bacteria
- There will be an antibiotic shortage
- Antibiotics can cause secondary infections
- Antibiotics will get into the water system

A car travels at a constant speed of 40 miles per hour. How far does the car travel in 45 minutes?

- 25 miles
- 30 miles
- 35 miles
- 40 miles

What is the atomic symbol for lead?

- Pb
- La
- Ld
- Rh

What are frogs classified as?

- Amphibians
- Reptiles
- Gastropods
- Anthozoa

Which parent's genes determine a baby's sex?

- Male parent
- Female parent
- Both male and female parent
- Neither

At what temperature does water freeze?

- 0 degrees C
- 0 degrees F
- 10 degrees C
- 40 degrees F

Which scientist developed the theory of evolution?

- Isaac Newton
- Sigmund Freud
- Charles Darwin
- Marie Curie

In geometry, how many sides are in a heptagon?

- 3
- 5
- 7
- 9

What does a light-year measure?

- Time
- Velocity
- Distance
- Mass

What are the building blocks that make up everything on Earth called?

- Nuclei
- Atoms
- Mitochondria
- Gravitrons

What feature of a sound wave determines how loud the sound is?

- Amplitude
- Frequency
- Length
- Range

Which of these planets is earth's closest neighbor?

- Venus
- Neptune
- Mercury
- Jupiter

Panel B in each of Appendix Tables A10 and A11 show the effects of being randomly assigned to answer these questions on our outcomes of interest. Answering these questions has no effect on political efficacy in the main survey, though it increases agreement that citizen movements can make change (elicited in the follow-up survey) by 0.08sd ( $p = 0.07$ ). The extra questions have no statistically-significant effect on any form of climate action. Thus, we conclude that the story's additional duration cannot explain its impacts on political efficacy or climate action.

## F Comprehension questions

Before all informational videos and the story video, we ask participants to watch the videos carefully because we will ask several comprehension questions afterwards. We emphasize that we will randomly choose 10 participants and pay them \$5 for each comprehension question that they answer correctly. Immediately after all participants watch the baseline informational, they first answer the following comprehension questions:

- Comprehension question 1: Under the Paris Agreement, to what level does the international community hope to limit warming? [1 degree C; 1.5 degrees C; 2 degrees C; 2.5 degrees C]. 97% of the sample answered this correctly.
- Comprehension question 2: By how much have temperatures already risen, on average, from pre-industrial levels? [0.8 degrees C; 0.9 degrees C; 1 degree C; 1.2 degrees C]. 77% of the sample answered this correctly.

Before participants watch the next video (either the basic control, extended control, or IRA-treatment video), we reiterate that it will be followed by additional comprehension questions subject to the same incentives. Participants assigned to watch the **basic-control** video answer just one additional question:

- Comprehension question 3: The US commitment under the Paris Agreement is to reduce emissions to what percent of 2005 emissions levels by 2030? [50%; 55%; 60%; 65%]. 97% of the sample answered this correctly.

Participants assigned to watch the **extended-control** video answer three additional questions:

- Comprehension question 3: What is the baseline year that the US emissions reductions commitments reference? In other words, we have committed to reducing emissions by a certain percentage below emissions levels in what year? [2005; 2006; 2009; 2010]. 94% of the sample answered this correctly.
- Comprehension question 4: The US commitment under the Paris Agreement is to reduce emissions to what percent of 2005 emissions levels by 2030? [45%; 50%; 55%; 60%; 65%]. 95% of the sample answered this correctly.

- Comprehension question 5: What are emissions commitments under the Paris Agreement called? [Nationally-determined contributions (NDCs); Country emissions standards (CES); Voluntary emissions levels (VELs)]. 94% of the sample answered this correctly.

Participants assigned to watch the **IRA-treatment** video answer three additional questions:

- Comprehension question 3: The US commitment under the Paris Agreement is to reduce emissions to what percent of 2005 emissions levels by 2030? [45%; 50%; 55%; 60%; 65%]. 86% of the sample answered this correctly.
- Comprehension question 4: Comprehension question 4: What is the name of the recent climate bill signed into law? [Inflation Reduction Act; Infrastructure Investment and Jobs Act; Emissions Reduction Act]. 88% of the sample answered this correctly.
- Comprehension question 5: According to projections, what share of the remaining emissions reductions cuts required to hit the United States' 2030 target will the Inflation Reduction Act achieve? [40%; 65%; 70%; 80%]. 71% of the sample answered this correctly.

Finally, we also asked several comprehension questions after the **climate-advocacy story**. Again, we told participants in advance that 10 participants would be randomly chosen to win \$5 for each question they answered correctly. These questions were as follows:

- What was the dog's name in the story? [Rufus; Milo; Gilbert; Charlie]. 97% of the sample answered this correctly.
- Which of the following social movements did the story not reference? [The disability-rights movement; The civil-rights movement; The movement for women's right to vote; The labor-rights movement]. 85% of the sample answered this correctly.

## G Variable definitions

### G.1 Outcome variables

#### Political efficacy.

- **Main survey:** The main experimental survey captures both qualitative and quantitative measures of political climate efficacy.
  - Qualitative measures elicit participants' agreement with the following statements from 1 (Strongly disagree) to 7 (Strongly agree):

1. People like me don't have any say about what the federal government does about issues like climate change;
2. Fossil fuel companies and their lobbyists have more power than citizens in determining what the US government does about climate change;
3. When groups of citizens push for policy on issues like climate change, the US government government responds to their demands.

We standardize these variables to have mean zero and standard deviation one in the control group, and present results separately for agreement with each statement as well as for an index constructed from all three statements. We calculate this index by summing the standardized component variables, flipping the sign of agreement with the first and second statements, then standardizing this sum to have mean zero and standard deviation one in the control group

- The quantitative measure of political efficacy elicits participants' guess for the probability that another climate bill would pass if it were introduced to Congress in the next few months. Participants who completed the survey in October or November were asked to estimate the probability (on a slider from 0 to 100, with labels for "Definitely not" and "Definitely yes" at either end, with "Fairly low chance" and "Fairly high chance" centered at 35 and 65, respectively) that a hypothetical climate bill would pass if it were proposed in January, assuming that Democrats maintained control of both houses of Congress. Participants who completed the survey in January or February were asked to consider a hypothetical climate bill that would be proposed in April. We ask participants to separately guess the probability that such a bill would pass if 2% or 10% of Americans contacted their national representatives to support it. The difference between participants' guesses in each of these cases provides a numeric measure of external collective efficacy: the impact of additional citizen pressure on government action. Specifically, the two slider questions read as follows:

- \* Imagine that a bill pushing for climate action were introduced to Congress in (January) April 2023. Now imagine that 2% of Americans contacted their national representatives to support the climate bill. That would be about 15,000 people per district in the House of Representatives. What do you think is the probability that Congress would pass the bill?

- \* Now imagine that 10% of Americans contacted their national representatives to support the climate bill. That would be about 76,000 people per district in the House of Representatives. What do you think is the probability that Congress would pass the bill in that case? (Recall that you thought there would be a [Previous Answer]% chance if 2% of Americans contacted their representatives.)

- **Obfuscated follow-up:** We elicit three measures of political efficacy in the follow-up survey after participants

have the chance to download the Call the Halls guide.

1. To what extent do you agree with the following statement? Statement: "Citizen movements on issues like gun control and climate can make real change." A slider from 0 (Disagree completely) to 7 (Agree extremely strongly).
2. How effective do you think marches / rallies are in affecting government policy? A Likert scale from 0 (Not effective at all) to 6 (Extremely effective)
3. How effective do you think contacting politicians (for example by phone or email) is in affecting government policy? A Likert scale from 0 (Not effective at all) to 6 (Extremely effective)

We standardize these variables to have mean zero and standard deviation one in the control group, and present results separately for agreement with each statement as well as for an index constructed as the sum of these standardized variables and then itself standardized to have mean zero and standard deviation one in the control group.

#### **Donations to climate advocacy organizations.**

- **Main survey:** Before participants have the chance to engage in action (donations, or personal advocacy, with the order randomized) we say: "The United States still has lots of work to do to meet its 2030 emissions reductions commitments under the Paris Climate Agreement. That means that it's important that we continue to push for ambitious climate action at the federal, state, and local levels." When participants get to the donation outcome (either immediately or after the action outcomes described below), we say (with additional spacing), "[One/Another] important way to push for climate policy is to support climate advocacy organizations like the [Natural Resource Defense Council](#), the [Sunrise Movement](#), and the [Citizens' Climate Lobby](#). Remember that one respondent will be randomly chosen to win a bonus of \$80. You can choose now to give some amount that, if you win, we will subtract from your lottery reward and instead donate to the climate organization of your choice. You are entirely free to keep the \$80 prize for yourself; please don't feel pressured to donate." We ask them if they'd like to donate to any of the three organizations (Yes or No), and if they say yes, we ask them which organization they would like to donate to (they may only choose one), repeating the links to each group's website. We then ask how much they'd like to donate, on a slider ranging from 0 to 80. We define outcomes as whether and how much participants donate to one of these organizations.
- **Obfuscated follow-up:** After eliciting hope that the new Congress will focus on various issues, and before participants are offered the guide to contacting politicians, we say (with additional spacing), "One important way to advocate for policy you support is by donating money to effective advocacy organizations. You might



remember that one participant in this survey is going to be randomly chosen to win a Prolific bonus of \$100. On the next page, you can decide if you want to donate any of that money, if you win it, to any of the following top-rated advocacy organizations:

- [Violence Policy Center](#), which studies and advocates for solutions to gun violence in the US.
- [NARAL Pro-Choice America Foundation](#), which advocates to expand abortion access in the US.
- [Environmental Defense Action Fund](#), which advocates for ambitious climate policy in the US.
- [The Heritage Foundation](#), which advocates for free-market policies and individual liberty in the US.

You could split the bonus between multiple organizations, donate some to just one organization, or keep the full bonus. Anything you choose is fine! Below, please decide how much to keep yourself versus donating to each organization, if you win the \$100 bonus. (Your answers must sum to \$100.)”

We included the Heritage Foundation in order to reduce the survey’s partisan slant towards stereotypically liberal causes. The order of each choice in the following question where participants enter their donation amounts (with a fifth option labeled “Amount you take home”) is randomized. Our main outcome of interest is whether and how much they donate to the Environmental Defense Action Fund, though we also define secondary outcomes for total amount donated and whether/how much they donate to each non-climate cause.

### **Citizen advocacy.**

- **Main survey:** We observe two measures of revealed interest and engagement in direct citizen advocacy:
  - *Contacting Congress about climate change:* Again, before participants have the chance to engage in action (donations or personal advocacy, with the order randomized) we say: “The United States still has lots of work to do to meet its 2030 emissions reductions commitments under the Paris Climate Agreement. That means that it’s important that we continue to push for ambitious climate action at the federal, state, and local levels.” When they get to the letter-writing outcome (either immediately or after the donation outcomes described above), we say (with additional spacing), “[One/Another] crucial way to help enact strong climate policy is to directly tell your representatives in Congress that you support climate action. If you want, we’ll link you in a few pages to a portal hosted by the Natural Resource Defense Council where you can email your legislators. Don’t worry, you don’t have to be an expert to contact Congress! Are you interested in being linked to contact your legislators?” Participants can then answer yes or no; this determines our outcome for whether participants opt into the process of emailing Congress. If they answer yes, they see the following: “Great! The portal we’ll link you to will include a form letter that you could send, but your email will be much more effective if you personalize it. On this page, you can

write out a personalized message you'd like to send on the next page. (It will go to your Senators, House Representative, and President Biden.) If you don't write out a letter, you can still move ahead and just send the form letter. Here are some tips. The best messages:

- \* Give a specific reason for why climate change matters to you or has impacted you personally.
- \* Are three or more sentences long.
- \* State that whether those politicians act on climate change will affect whether you will vote for them in the future.”

We provide participants with an essay-style (multiple line) text box in which to draft a letter. Finally, on the next page, they see the following: “Here is the letter you wrote out on the last page, if you did so: [Previous Answer] Click here for a link to the contact portal, hosted by the Natural Resource Defense Council. You'll have an option to click "Read more and personalize your letter." To make your letter as effective as possible, click that and then paste in the letter you wrote out here!” (Note: the letter-writing campaign that we were directing participants to has closed. Below are screenshots of the portal components.)

We define outcomes for whether participants initially said they were interested in emailing Congress, whether they wrote out a personalized email in our text box, and whether they clicked the link to the NRDC portal to send a letter.

The image displays two screenshots of a web form. The first screenshot, titled "YOUR INFORMATION", is a dark blue form with white text and input fields. It includes a "SALUTATION" dropdown menu, "FIRST NAME" and "LAST NAME" text boxes, "E-MAIL ADDRESS", "ADDRESS", "ZIP CODE", "CITY", "STATE" dropdown, and "PHONE" text box. At the bottom, there is a checkbox for "GET TEXT MESSAGE ALERTS" and a small disclaimer about receiving alerts. The second screenshot, titled "YOUR MESSAGE", is also dark blue with white text. It shows a "SUBJECT" field with the text "Prioritize climate action in 2023", a "MESSAGE BODY" text area containing a draft letter addressed to "Dear President Biden, Senators, and Representative:", and a "SEND YOUR MESSAGE" button at the bottom. A small note at the bottom of the second screenshot reads: "When you take action, you'll become an NRDC member. We will keep you informed with the latest action alerts and campaign updates."

- *Seeking information about climate marches:* In our second wave of data collection (collected in January and

February 2023), we added an additional outcome to the main experimental survey to capture participants' interest in specifically march-related climate action. We observe whether participants click a link to a map of upcoming climate marches published by Fridays for Future, a decentralized group begun by Greta Thunberg that organizes climate marches around the world. We define an outcome as whether participants click on this link. We introduced this secondary outcome in an amendment to our pre-registration posted on January 11, 2023 before starting our second round of data collection. The survey presents this link after the two donation and letter-writing outcomes, so the addition of this outcome does not change the interpretation of the donation or letter-writing outcomes. Specifically, we provide the following (with additional spacing): "Another important way to push for policy change is through marches and other kinds of public demonstrations that make clear to governments and other people around us that we care about climate action. One of the main groups that organizes climate marches is called Fridays for Future. It's a global movement with climate marches in more than 200 countries and across many US states. If you'd like to find an upcoming climate march near you, click [here](#) for a map showing all of Fridays for Future's upcoming events."

- **Obfuscated follow-up:** "Call the Halls" is a guide to contacting legislators written by Emily Ellsworth, a former Congressional staffer. We provide participants a link to download the file, and observe whether they do so as our outcome of interest. Specifically, the page read as follows (with additional spacing): "Donating money to organizations is great, but arguably an even more impactful way that you can support action on political and social issues that you care about is by directly demanding action from politicians at the local, state, and national levels. Politicians' jobs are to represent citizen preferences, so one of the best ways to make change is to communicate what's important to you. You don't have to be an expert to do so! It can be intimidating to get started with contacting elected officials if you've never done so before. Below, we're attaching "Call the Halls," an excellent guide to contacting your legislators written by Emily Ellsworth, a former Congressional staffer. The guide is meant to be read and shared. It will explain what to say in a message to legislators, how to choose who to contact, and the most effective ways to make contact.

--> Click [here](#) to download the guide! <--"

## **Emotions.**

- **Main survey:** We test the impacts of the IRA information and climate-action story on participants' emotional states. We elicit participants' emotions immediately after the experimental treatments. We ask them to list (writing out whatever they want to) at least one (and up to three) emotions that they were currently feeling, with a note to list the first thing(s) that comes to mind. On the next page of the survey, we then ask participants to rate how strongly they're feeling each of the emotions they listed on a scale from 1 (Very weakly) to 6 (Extremely

strongly).

Two authors hand-coded emotions into categories from a treatment-blind list, generating the classification scheme below. First, one author cleaned the text responses, equating free-responses that were written differently but had the same meaning. This included summarizing a sentence as one emotion (e.g. “determined to make a difference” became “determined”), changing equivalent emotions to the same tense (e.g. sympathy and sympathetic, annoyed and annoyance, pride and proud), and fixing spelling mistakes. 48 responses (out of 16,180) were changed to missing because they did not reference an emotion (e.g. “gilbert” or “children”). This resulted in 607 unique words describing emotions.

A different author categorized those 607 words into the 13 categories presented in the paper (plus “other”, 2.6% of all emotions, and missing, 0.2% of all responses). The table below shows the component emotion words that are included in each category; below each emotion category is the percent of the 16,096 total responses (excluding missing) that fall in that category. In addition to defining dummy variables for whether each participant reporting feeling an emotion in a given category, we also defined standardized variables for the strength with which they felt that emotion. If participants listed multiple emotions in one category, we use the strength of the emotion that they felt most strongly. We standardize their strongest emotion in each category to have mean zero and standard deviation one in the control group.

- We do not measure emotional responses to the topic of climate change in the obfuscated follow-up.

Emotion category	Emotion words
<p>Hope/strength (7.6%)</p>	<p>ability, accomplished, achievable, ambition, brave, competence, confident, courageous, elevated, empowered, encouraged, expectant, faith, good, grit, hopeful, lucky, optimism, patriotic, positive, potential, powerful, progress, strength, strong, success, trust</p>
<p>Motivation (7.3%)</p>	<p>action, actionable, activated, active, adrenaline, alert, alerted, aroused, called, challenged, commitment, compelled, competitive, convicted, creative, dedicated, determined, driven, eager, emboldened, energetic, engaged, enlightened, enthusiastic, excited, fierce, focused, galvanized, hastened, helpful, hyped, influenced, initiative, inspired, intent, invested, invigorated, involved, justice, moral, motivated, moved, opportunity, passion, persistence, pro action, proactive, productive, protective, pumped, ready, resolve, responsible, revolutionary, righteous, rushed, solidarity, steadfast, stimulated, stirred, stubborn, urge, urgency, vibrant, vindication, willing, woke, zeal, zoned-in</p>
<p>Pessimism (3.9%)</p>	<p>afflicted, beaten, bleak, cringe, cynical, defeated, demoralized, difficulty, discouraged, disenfranchised, disheartened, disillusioned, dismay, division, done, doomed, doubtful, failure, fatalism, fruitless, futility, hopeless, impotence, inadequate, ineffectual, inevitability, insignificant, jaded, judgement, negative, nihilistic, pessimism, pointless, powerless, skeptical, small, stagnant, stoic, unamused, unconvinced, underwhelmed, unrealistic, unsurprised, useless, weak</p>
<p>Apathy/fatigue (8.5%)</p>	<p>aloof, ambivalence, apathy, blah, blank, blase, bored, complacency, demotivated, detached, disinterest, distanced, drained, drowsy, ennui, exhausted, flat, impassive, indifference, lackluster, lazy, lethargic, listless, meh, overworked, passive, resigned, sleepy, slow, sluggishness, spent, tired, uncaring, unfocused, unmotivated, unmoved</p>
<p>Happiness (5.8%)</p>	<p>admiration, amazed, amused, appreciation, awe, blessed, cheerful, content, delighted, elated, enjoyment, entertained, euphoric, exhilaration, ecstatic, fulfilled, glad, grateful, happy, impressed, joyful, laughter, nice, overjoyed, playful, pleasant, pleased, proud, refreshed, thankful, upbeat, uplifted</p>
<p>Peacefulness (5.2%)</p>	<p>acceptance, at ease, attuned, balanced, benign, calm, centered, comfortable, contemplative, docile, ease, easygoing, euthymic, grounded, harmony, lax, mellow, mindful, nonchalant, peaceful, placated, quiet, reflective, relaxed, relief, rested, safe, satisfied, serene, serenity, soothed, stable, still, tranquility, unbothered, well</p>
<p>Compassion/ connection (1.4%)</p>	<p>attentive, camaraderie, caring, collective, compassion, condolence, connected, emotional, empathy, generosity, gentle, gracious, heart, heartwarmed, humanity, impacted, kindness, love, loving, open, patience, poignancy, sensitive, sentimental, sympathy, tolerance, touched, understanding, united, warm</p>
<p>Yearning (0.4%)</p>	<p>desire, dissatisfied, impatience, longing, nostalgic, unfinished, wishful, yearning</p>

Emotion category	Emotion words (continued)
Sadness (18.1%)	aching, alone, anguish, bad, bittersweet, blue, bothered, bummed, deflated, dejected, depressed, despair, despondent, devastated, disappointed, discontent, distant, distraught, distressed, down, drab, empty, forlorn, gloomy, grief, heartache, heartbroken, horrible, hurt, ill, isolated, lonely, loss, lost, malaise, melancholy, misunderstood, monotone, moody, morose, mournful, numb, pain, pitiful, pity, reticent, sad, shitty, solemn, somber, sorrow, strained, subdued, tearful, ugh, unhappy, unloved, unpleasant, upset, weary, weltshmerz, wistful, withdrawn, woeful
Anger (13.0%)	aggravated, angry, annoyed, appalled, betrayed, bitter, condemnation, consternation, contempt, critical, deceived, defensive, derision, devious, disdain, disgruntled, disgust, dislike, displeased, disrespected, enraged, exasperated, frustrated, furious, fury, grumbly, grumpy, hatred, hostility, incensed, indignation, infuriated, injusticed, irritated, jealousy, manipulated, murderous, offended, off-put, outraged, peeved, pissed, rage, resentment, revenge, ridicule, unsatisfied
Anxiety (19.3%)	afraid, agitated, alarmed, angsty, anticipation, antsy, anxious, apprehension, awake, cautious, concern, crazy, dangerous, desperate, discomfort, disturbed, dread, eerie, existential, fearful, fret, fright, guarded, helpless, hesitant, horror, insecure, jittery, meek, nauseous, nervous, on edge, panicked, paranoid, perturbed, pressed, restless, scared, stressed, tense, tension, terrified, trapped, troubled, turmoil, uncomfortable, unease, unnerved, unprepared, unrest, unsettled, vulnerable, wary, watchful, worry
Shock/ questioning (6.0%)	aghast, astounded, baffled, befuddlement, bemused, bewildered, blindsided, captivated, conflicted, confoundedness, confusion, curious, dazed, disbelief, distracted, fascination, flustered, imaginative, incredulous, indecision, inquisitive, interest, intrigued, introspective, investigative, overstimulated, overwhelmed, pensive, perplexed, ponderous, preoccupied, puzzled, questionable, questioning, quizzical, realization, reminiscent, retrospective, shock, startled, stunned, surprise, suspicion, thoughtful, uncertainty, unclear, unknowledgeable, unsure, winded, wondering
Guilt (0.8%)	ashamed, avoidant, behind, careless, dumb, embarrassed, guilty, humbled, naive, pathetic, regret, remorse, shame, sheepish, stupid, wasteful
Other (2.6%)	absurdist, agreeable, artistic, aware, blarged, broke, bullshititude, busy, change, cheesy, cold, collected, concentrating, confession, confirmed, congested, conscious, cool, decent, decisive, dejavu, dissolution, dreamish, dutiful, eco-communist, educated, environconscientious, fair, favored, food, forgetful, full, future awareness, gassy, green, headache, heat, horny, hot, humor, hungry, hurried, impoverished, in tune, in-between, informed, innocent, insightful, intelligent, intense, intentional, knowledgeable, logical, memory loss, move on, movement, need, needy, neutral, nose, observing, old, pandered, pragmatic, present, progressive, rational, realism, recession, reluctant, reserved, sane, sated, serious, sick, sleeplessness, smart, smirk, smug, snuggly, sore, stretched, studious, stuffy, sweetness, thirsty, treading water, unique, witty

### **Desire for climate policy.**

- **Main survey:** We measure three variables capturing desire for policy change after we elicit emotions (i.e. after the treatment and before any action is taken).
  1. How worried are you about climate change? A Likert scale from 1 (Not at all worried) to 7 (Extremely worried)
  2. How much do you want the federal government to do to slow or stop climate change, relative to what it's currently doing? A Likert scale centered at 4 (The same as it's currently doing) and extending to 1 (Much less) and to 7 (Much more)
  3. Please rank these issues (click and drag to re-order) based on how much you would like Congress to prioritize them in legislation moving forward. The issue ranked at (1) should be the issue you think Congress should prioritize most. *Options:* Climate change, reproductive rights, reducing inflation, combatting terrorism, and racial justice

We standardize each response to have a mean zero and standard deviation one in the control group and create an index by first summing the three standardized variables and then standardizing this sum to have mean zero and standard deviation one in the control group

- **Obfuscated follow-up:** The first question in the obfuscated follow-up asks participants about their political priorities, framed in the context of the soon-to-be- or newly-elected Congress (in wave 1 and 2, respectively), with the context that all of the seats in the House of Representatives and 35 of the 100 seats in the Senate were up for reelection. Specifically, "The new Congress could focus on a range of policy issues, including the economy, climate change, abortion rights, or gun policy. To what extent do you hope that the newly-elected Congress will focus on the following issues?" *Options:* Gun control, climate change, reducing inflation, and reproductive rights/abortion access. Each had a Likert scale from 1 (Not at all) to 6 (Very much so). We standardize the Likert response for climate change to have mean zero and standard deviation one in the control group.

### **Second-order beliefs.**

- **Main survey:** We ask two questions to measure participants beliefs about other Americans' support for climate policy and willingness to contact their political representatives:
  1. Out of 100 Americans, how many do you think would say that they think climate change is a problem the US government should take action to solve? A slider labeled "# of people" from 0 to 100.
  2. In the last question, you guessed that [Previous Answer] Americans out of 100 would say that climate change is a problem the US government should take action to solve. How many of those [Previous Answer]

Americans do you think would actually call or email their national representatives to support a climate bill if it were proposed in January 2023? A slider labeled “# of people” from 0 to 100.

The answer to each question is a secondary outcome of interest, along with the share of those they think are worried who they think will call.

- We do not measure beliefs about support for climate policy in the obfuscated follow-up

### **Knowledge of the IRA.**

- **Main survey:** The last questions in the experimental survey measure our outcome for our “first stage” (for the effects of the IRA information treatment) and are used to test whether the story affects recollection of the IRA. We ask two questions:

1. To your knowledge, did the US government make substantial progress on climate change during 2022? This could include things you’ve learned about in this survey. (Please don’t look anything up. We’re interested in your honest best guess, and it’s totally fine if you don’t know.) *Options:* Yes, No, and I don’t know.
2. Have you heard of any of the following recent bills, including during this survey? Please select any that you’ve heard of. *Options:* Inflation Reduction Act, Honoring our PACT Act, Affordable Insulin Now Act, and Infrastructure Investment and Jobs Act.

The outcomes of interest are whether they have heard of the IRA and whether they answer Yes to the question about making substantial progress on climate change.

- We do not measure knowledge of the IRA in the obfuscated follow-up

## **G.2 Control variables**

Unless otherwise indicated below, all control variables were elicited during the 1-minute screening survey (which participants took at least X days before they took the experimental survey). After the two screening questions, participants answered questions which provided the following:

### **Demographic controls.**

- Sex, Age, and Ethnicity come from merging our data with Prolific’s provided demographic data using participants’ Prolific IDs. We control in our main regressions for whether participants identify as male or female, age bins {18-20, 21-25, 26-30, 31-35, 36-40, ..., 71-75, over 75, missing}, and ethnicity categories {Asian, Black, White, Other, Missing}.



- Education: Do you have a 4-year college degree? (If you are currently in college, please answer “No”) *Note: this question was asked at the very end of the experimental survey.* We combined this variable with age to create dummy variables for the interactions of being over age 25 (or missing age) and having a 4-year college degree.
- Political affiliation: In politics today, do you consider yourself a Republican, Democrat, or Independent? (They were also offered options of other, with a fill-in-the-blank, or prefer not to answer). *Note: this question was asked at the very end of the experimental survey.* We control in our main regressions for separate indicators that participants identified as a Democrat, Republican, Independent, or Other.

#### **Baseline climate worry.**

- How worried are you about climate change? A Likert scale from 1 (Not at all worried) to 7 (Extremely worried). In analysis, we standardize this variable to have mean zero and standard deviation 1 in the control group.

#### **Baseline desire for climate action.**

- How much do you want the federal government to do to slow or stop climate change, relative to what it’s currently doing? A Likert scale from 1 (Much less) to 7 (Much more), centered at 4 (The same as it’s currently doing). In analysis, we standardize this variable to have mean zero and standard deviation 1 in the control group.

#### **Baseline external political efficacy.**

- Participants’ agreement with the following statements from 1 (Strongly disagree) to 7 (Strongly agree):
  1. People like me don’t have any say about what the federal government does about issues like climate change;
  2. Fossil fuel companies and their lobbyists have more power than citizens in determining what the US government does about climate change;
  3. When groups of citizens push for policy on issues like climate change, the US government government responds to their demands.

We standardize these variables to have mean zero and standard deviation one in the control group and construct an index as the sum of these standardized variables, flipping the sign of agreement with the first and second statements as those indicate negative efficacy. We then standardize this sum to have mean zero and standard deviation one in the control group.

### **Baseline political engagement.**

- We elicit participants' baseline political engagement with the following framing: "Some people get directly involved in social and political issues, while others don't have the time or interest. In the last two years, have you engaged in any of the following forms of civic engagement? (In other words, since October 2020). Please select all that apply:
  - Contacted an elected representative about a social or political issue
  - Donated money to an organization working on a social or political issue
  - Canvassed door-to-door about a political or social issue
  - Signed a petition about a political or social issue
  - Phone-banked for a political or social issue"

We create an index for political engagement by standardizing indicators for each of the above to have mean zero and standard deviation one in the main sample, adding these together, and then standardizing the sum to have mean zero and standard deviation one in the control group. *Note: this question was asked as the first question in the experimental survey, not in the initial screening survey.*

Appendix Figures [A4](#) through [A15](#) show the robustness of our main results to our choice of control variables.