The Politics of Disaster Prevention

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Abstract

Despite the importance of effective disaster policy, governments typically fail to produce it. The main explanation offered by political scientists is that voters strongly support post-disaster relief but not policies that seek to prevent or prepare for disaster. This study challenges that view. We develop novel measures of preferences for disaster prevention and post-disaster relief. We find strong support for prevention policies and candidates who pursue them, even among the subgroups that are the most opposed. Support for prevention has the hallmarks of "real" attitudes: consistency across wordings and response formats, including open ended probes; steadfastness in the face of arguments; and willingness to make trade-offs against disaster relief, increased taxes, and reduced spending on other programs. Neither cognitive biases for the here and now nor partisan polarization prevent robust majority support for disaster prevention. We validate these survey findings with election results, which suggest voters act on these preferences.

Keywords: natural disasters, public health disasters, disaster prevention, disaster relief, public opinion

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*Supplementary material for this article is available in the online appendix. Replication files are available in the *JOP* Data Archive on Dataverse (https://dataverse.harvard.edu/dataverse/jop).The empirical analysis has been successfully replicated by the *JOP* replication analyst. Our study was conducted in compliance with relevant laws and was approved by the appropriate institutional review board. Support for this research was provided by the Center for the Study of Democratic Politics at Princeton University, the John Simon Guggenheim Memorial Foundation, and the UCLA Luskin School of Public Affairs.

The debate about the rationality of public opinion has long preoccupied political scientists (e.g., Achen and Bartels 2016).[1] A key policy area where this debate matters is how governments deal with disasters such as wildfires, floods, storms, and pandemics. Disasters have become among the most significant public problems for governments worldwide, as they grow in frequency and cause increasingly catastrophic property damage and massive loss of life (Egan and Mullin 2017).

A central distinction in studies of disaster is between disaster *prevention* and disaster *relief*. Prevention consists of mitigation and preparedness. Relief consists of recovery and rebuilding. Experts argue that disaster prevention is more cost effective than disaster relief—but that the U.S. under-invests in disaster prevention (Atwii et al. 2022; Healy and Malhotra 2009).[2]

A common explanation for this under-investment is a perceived lack of support among the public. For example, in a study of U.S. disaster spending and election outcomes, Healy and Malhotra (2009) found that spending on disaster prevention elicits no electoral rewards, in contrast to the substantial electoral rewards for disaster relief. The authors concluded that voters value relief but not prevention: "An ounce of prevention would be far more efficient than a pound of cure, but voters seem interested only in the cure" (Healy and Malhotra 2009, 402). Similarly, Marple and Post (2023, 1) argue that "voters are less willing to support government expenditures on preparedness than disaster relief," and Bechtel and Mannino (2021, 1046) write that "...underpreparedness may also mirror opposition to such spending decisions among voters" (see also Gailmard and Patty

[1]This study was preregistered. Our registered hypotheses are at https://aspredicted.org/blind.php?x=YTP_9X8 (2021 survey) and https://osf.io/nasqu?view_only=295f24f8e2d64b0887178089d0bfcc26 (2023 survey).

[2]A disaster is a discrete event causing significant damage. We focus on disaster related to weather or disease.

2019; Hai and Perlman 2022; Andrews and Ryan 2022).

Studies of public opinion suggest a lack of public support for disaster prevention could arise from well-known limitations of voters or their political and information environments: people are uninformed, misled by heuristics, suspicious of government and uncertain of its commitments, or narrowly focused on partisan cues. Specifically, they are unaware of the cost-effectiveness of prevention policies (Andrews and Ryan 2022; Bechtel and Mannino 2021), care mostly about short-term costs and benefits and fail to properly account for the future (Achen and Bartels 2016; Bechtel and Hainmueller 2011), have yet to experience personal exposure to disasters (Egan and Mullin 2012), focus on tangible policy outcomes they can experience first-hand (Jacobs and Matthews 2012; Mettler 2011), distrust government (Andrews, Delton, and Kline 2023; Jacobs and Matthews 2017), or follow cues from trusted partisan sources (Freeder and O'Brian 2022; Gadarian, Goodman, and Pepinsky 2022; Malhotra and Kuo 2008).

In this paper, we offer a different account of public attitudes toward disasters. Using large, original, national surveys of Americans designed to directly and comprehensively measure views about disaster policy, we find that a large majority of voters: (1) supports increased spending on disaster prevention even when this spending requires trade-offs, (2) prefers disaster prevention to disaster relief, and (3) rewards candidates more for prevention than for relief. This prevention support holds among groups least likely to be supportive, such as respondents who distrust government. Further, prevention preferences have the hallmarks of 'real attitudes.' These preferences persist across a wide variety of question wordings, and even after considering arguments for prioritizing relief over prevention. In addition, respondents spontaneously think about prevention policies, and say so in their own words, *even when unprompted to consider prevention*. The fact that prevention supporters mention prevention before we do suggests they are not simply giving

socially desirable or 'best-self' responses.

Additional data bolsters our survey results in three ways. First, we identified all ballot measures on disaster prevention from a national database. These measures were just as likely to pass as other ballot measures, indicating "real world" public support for prevention. Second, for a ballot measure for which we were able to find pre-election polling, support among survey respondents closely matched the actual vote, suggesting that survey responses are not merely "cheap talk." Finally, we address concerns that the results may be time-bound. Reassuringly, we find strong support for prevention prior to the onset of Covid-19, at the height of Covid, and after its salience declined, and this support extends to both natural and public health disasters. In short, respondents have "real," meaningful attitudes about prevention policy, and these are not artifacts of social desirability or unique events.

These results contribute to the literature by questioning the conclusion that public support for investing in disaster prevention is weak. Our results depart from the literature on disaster politics by suggesting much deeper and broader reservoirs of support for policies and leaders that effectively address serious public problems. Future research should pivot from the purported lack of public support to other parts of the policy process. In the conclusion, we discuss useful directions for this research. Rather than continue to focus on the public's cognitive biases or inherent limitations, it is more fruitful to explore how the media might aid the public in holding politicians accountable for fulfilling public preferences for prevention, and how to encourage leaders to more accurately assess the strength of public support for prevention.

Literature review

Disasters are a major public problem around the world. Both public health disasters like epidemics and weather-related disasters such as wildfires and floods are frequent and expensive occurrences. But governments do not spend enough on disaster prevention (Atwii et al. 2022; Healy and Malhotra 2009). According to the disaster policy literature, prevention is a vital part of disaster policy, and includes mitigation (such as infrastructure or processes that will reduce the impact of disaster), and preparedness (including warning systems and response training) (Sainz-Santamaria and Anderson 2013). Every dollar invested in disaster prevention is estimated to reduce future damages by about fifteen dollars (Healy and Malhotra 2009), yet the federal government spends between two and fifteen times as much on disaster relief as on disaster prevention (Anderson, DeLeo, and Taylor 2022; Healy and Malhotra 2009, 393, 396). Why is that?

Much of the existing work focuses on one explanation: voters support disaster relief but not disaster prevention. According to these studies, voters mistrust government and believe it will spend prevention funds corruptly or inefficiently (Andrews, Delton, and Kline 2023; Gailmard and Patty 2019); misperceive or misunderstand the efficacy of prevention spending (Andrews and Ryan 2022; Bechtel and Mannino 2021); resist pro-prevention information (Carey et al. 2020; Egan and Mullin 2017); are temporally myopic (Egan and Mullin 2017); are unaffected long-term by personal experience with disaster (Bechtel and Mannino 2021; Bergquist and Warshaw 2019); or rely on motivated reasoning or partisan sources (Freeder and O'Brian 2022; Gadarian, Goodman, and Pepinsky 2022; Greer and Singer 2017; Hai and Perlman 2022; Heersink et al. 2020; Malhotra and Kuo 2008).

However, these studies rarely directly measure prevention preferences, or do not report the

level of support for prevention. Specifically, some studies ask what explains prevention support, showing that a given variable (such as a heuristic or misperception) increases opposition to prevention. While that research question is useful, it leaves the *level* of support uncertain. Other studies confirm the electoral benefits of *relief* spending, but do not measure *prevention* spending. That leaves them unable to assess either the level of support for prevention spending or its net electoral effect (Bechtel and Hainmueller 2011; Chen 2012; Gasper and Reeves 2011; Hilbig and Riaz 2024). Finally, the few studies that measure both prevention and relief spending do not measure *preferences* for that spending. For example, Healy and Malhotra (2009) measured only electoral returns, not individual preferences, and thus, cannot say whether the public has favorable attitudes about prevention.[3]

A primary basis for the conclusion that public support for prevention is weak comes from research showing the existence of cognitive biases. However, while cognitive biases certainly exist, their effects on policy views are unclear. For example, Gattig and Hendrickx (2007) find that the tendency to dismiss uncertain future consequences is much less severe or non-existent for environmental policy than for personal financial decisions (but see Hardisty and Weber 2009). In fact, people may be less "myopic" about the future than the past (Prior, Alsharawy, and Andrews 2023). Similarly, a bias for "us, here and now" depends heavily on how the choice is framed (Egan and Mullin 2017; Feldman and Hart 2018; Gattig and Hendrickx 2007; Hardisty and Weber 2009). In short, biases may not be strong and consistent enough to yield widespread opposition to prevention spending.

[3]Most of the potential mechanisms Healy and Malhotra (2009) identify are explanations for why the public might not favor prevention spending rather than why favored spending might not reap electoral rewards. The exception is lack of information, which we discuss below.

In addition, the notion that the public resists prevention policies is partly based on the important but unique issue of climate change. To be sure, public opposition to some climate policy proposals can be strong when the personal costs are salient (Egan and Mullin 2017; Stokes 2016). However, climate policy is among the most politically polarized issues of our time (Hornsey et al. 2016). Opponents of combating climate change would not necessarily oppose other forms of disaster prevention.

What, then, explains the weak effects of prevention spending on elections, if not voter indifference to prevention or reluctance to reward it? One possibility is a lack of information about incumbent spending on prevention (Choe and Raschky 2016; Healy and Malhotra 2009). The public may in fact support prevention spending, and wish to reward incumbents for it, but is simply more likely to learn about relief spending since it takes place in the aftermath of a newsworthy event (Schneider 2011). If the public is less likely to be exposed to information about disaster prevention than disaster relief, then inferring a lack of public support from a lack of electoral rewards would be a mistake. Consistent with this argument, Anderson, DeLeo, and Taylor (2022) show that state legislators erroneously believe their constituents care more about relief than prevention, and give more weight to constituent support for relief than prevention. If officials under-estimate and discount public interest in prevention, they may not publicize their prevention efforts. In short, under-investment in prevention could be a consequence of scarce publicity and officials' mistaken belief that the public does not support prevention spending.

Evidence suggesting that the public does value prevention comes from a number of studies. In one large U.S. city affected by severe flooding shortly before a mayoral election, most survey respondents reported that government policies had made their neighborhood either more or less prepared for flooding, and these views were associated with opposition to the incumbent mayor

(Arceneaux and Stein 2006). That study did not measure prevention preferences, but these findings suggest people may desire prevention policy and may apply this preference when choosing candidates.

Additional favorable evidence comes from Bechtel and Mannino (2021). These authors did not measure public support for disaster prevention per se, but did ask respondents about the trade-off between prevention and relief. Specifically, they asked a national sample how they would divide 100 million dollars between "preparing for disasters" and "providing disaster relief." The median respondent allocated 48 percent to preparedness. That is only 4 points less than they allocated to relief, and represents a far higher proportion than current U.S. prevention spending. In addition, more than 60 percent of respondents supported spending between $2 and $14 million to build a dam that would avoid $20 million in future damages in the event of a flood. While the authors focus on explaining "mass opposition to long-term preparedness investment" (p. 1067), we instead interpret these results as consistent with mass support for such investment.

Perhaps the clearest prior evidence of public support for prevention comes from Anderson, DeLeo, and Taylor (2022). These authors informed respondents of their state's spending on disaster prevention and relief, along with the national average and the state's past disaster damages. On average, respondents thought their state's spending on both disaster preparedness and relief should be about six times its current level, suggesting high levels of support for both.

While these studies suggest that people do desire spending on prevention and not only relief, they leave open important questions. Are these preferences "real"? That is, do voters think spontaneously about prevention, and do prevention preferences persist despite trade-offs and in the face of arguments? Do they affect candidate choice? And how widely held are they? Here, we advance the literature with data designed to address these questions. Unlike existing studies,

we use two large national surveys; gauge respondents' spontaneous, unprompted views; assess support for prevention and relief in the face of trade-offs against both taxes and other spending; present arguments for relief and prevention to measure the pliability of respondents' views; test the impact of hypothetical disaster spending on vote choice; assess preferences under differing real-world conditions; measure attitudes toward spending on both natural and public health disasters; and explore the breadth of support for prevention spending across the groups most and least likely to be supportive.

Survey design

We used Bovitz-Forthright to recruit a national non-probability sample of 2,932 American adults in the summer and fall of 2021, and a followup survey (n=2,104) in the fall of 2023. Details of the sampling quotas, weighting, and quality checks can be found in Section A.3. All our original survey findings come from these surveys. All are from 2021 unless specifically noted.

Our 2021 survey assesses: (1) whether respondents would like to see more or less federal spending in each of three areas, including disasters; (2) what thoughts come to mind when thinking about disasters; (3) support for spending on disaster prevention and relief, and for prioritizing prevention over relief (or the reverse); (4) the persuasiveness of reasons to prioritize prevention over relief (or the reverse); and (5) evaluations of hypothetical governors who increased (or failed to increase) spending on disaster prevention (relief). We also measured demographics, political beliefs, pandemic policy preferences, and exposure to disasters. Question wordings are in Table A.2. We explain each measure below.

Public support for specific prevention measures can vary dramatically, even with regard to the same threat (Egan and Mullin 2017, Fig. 1d). Since our goal is to assess broad orientations

toward disaster prevention and relief, our primary measures do not specify particular disasters or policy responses. As a robustness check, however, we added questions specifically about pandemics at the end of our survey.

Our 2023 followup survey replicated the first eleven questions from our 2021 survey, following the same procedures (Section A.3). The purpose of the followup survey was to reassess attitudes toward disasters after the salience of the Covid pandemic had declined, and to test the robustness of prevention support for both natural and public health disasters. We report these results in Section A.7.

We test registered and un-registered hypotheses, noting them as such. Figures displaying means use 83 percent confidence intervals, equivalent to a .05 two-tailed p-value for a difference of means (Goldstein and Healy 1995). Dependent variables range between 0 and 1, where 1 represents higher support for spending or for prioritizing prevention over relief.

Disaster prevention spending has broad public support

We hypothesized that support for spending on disasters will be at least equal to support for spending on health or highways. We also hypothesized that Americans support prevention spending at least as much as relief spending. We first asked respondents whether they would like to see more or less spending on health, on highways and bridges, and on natural and public health disasters, on a five-point scale from "much less" (0) to "much more" spending (1). Then, we described the difference between disaster prevention and relief,[4] and asked respondents whether they would like to see more or less spending on disaster prevention and on disaster relief. To encourage respondents to

[4]We told respondents "disaster relief is when government spends later to respond after a disaster occurs" and "disaster prevention is when government spends ahead to prevent a future disaster."

consider trade-offs, we noted that increasing spending might require a tax increase. Finally, we asked respondents whether they want to prioritize relief over prevention or prevention over relief. The order of prevention and relief wording was randomized in all questions.

Consistent with our initial hypothesis, respondents support increased spending to address natural and public health disasters at levels comparable to infrastructure, and only slightly less than health (Figure 1). Also as predicted, support for disaster prevention is similar to (or greater than) support for disaster relief (Figure 1). Specifically, mean support for prevention is 4 points higher than for relief ($p < .05$). The intensity of respondents' preference for increasing spending also favors prevention over relief: 29 percent say they prefer "much more" spending on prevention, 7 percentage points higher than relief. Finally, when respondents were asked which they would prioritize, 69 percent chose prevention over relief, while only 20 percent chose relief over prevention. (The remaining 11 percent chose "other.")

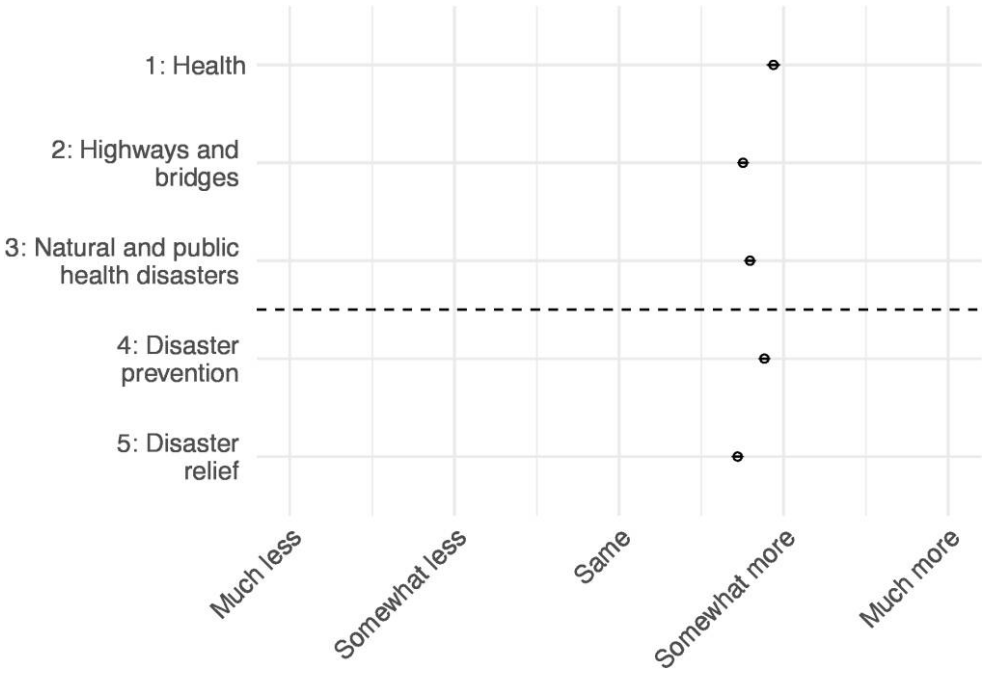

Figure 1: Respondents support spending on disasters at levels comparable to infrastructure and health. Support for disaster prevention is somewhat higher than for relief.

Even skeptical voters support more prevention

Based on existing studies, we hypothesized that support for prevention would be higher among Democrats, liberals, Biden voters, more educated voters, those with less negative attitudes towards government, those with more trust in schools and the media, and those who believe that people need experts to understand science and health (Algan et al. 2021; Andrews, Delton, and Kline 2021; Jacobs and Matthews 2017).[5] We regressed each dependent variable (support for prevention, support for relief, and prioritizing prevention over relief) on each of these predictors one at a time, with controls for age, race, and gender. The results show higher support for prevention among all the predicted subgroups (Figure A.1, Tables A.5-A.7).

However, these differences should not obscure the most notable finding: support for spending more on prevention and for prioritizing prevention over relief is quite high among all groups, even those most opposed.[6] To illustrate this finding, we coded each outcome as binary, to capture those who want "somewhat more" or "much more" spending, and those who want to prioritize prevention over relief. Figure 2 shows the percent supporting prevention among groups with the lowest support: Trump voters, Republicans, those with low trust in government, and those who do not believe in relying on experts. A strong majority in every group wants the government to prioritize prevention over relief. In addition, increased prevention spending has nearly majority support in every group. By contrast, relief has less than majority support in three of the four groups.[7]

These skeptical groups even want to prioritize prevention over relief when it comes to the

[5] On partisanship, see Gadarian, Goodman, and Pepinsky (2022) and Malhotra and Kuo (2008).

[6] We did not register hypotheses about support among skeptical groups.

[7] Section A.8 tests auxiliary hypotheses about personal exposure to disaster.

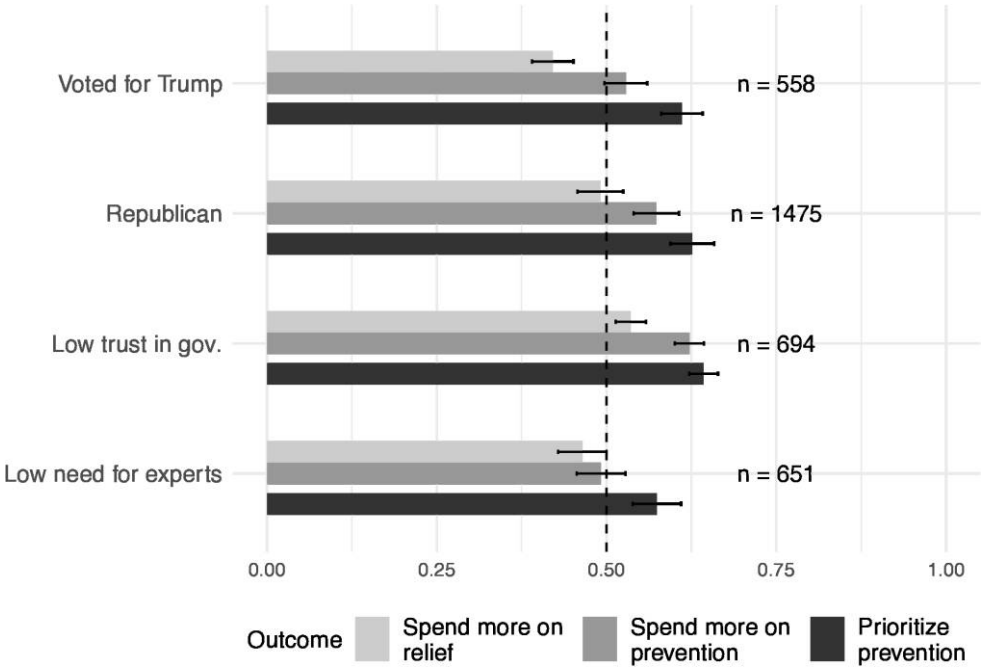

Figure 2: Even the most opposed groups still support prevention.

Covid-19 pandemic, an otherwise polarizing issue (Gadarian, Goodman, and Pepinsky 2022). Figure A.3 shows the share who want more spending on pandemic relief and on pandemic prevention, who want to prioritize pandemic prevention over relief, and who believe the government should have spent more to prepare for a pandemic like Covid before it happened.[8] Importantly, a majority of each group say the government should have spent more to prepare for a pandemic like Covid-19 before it happened, and that the government should prioritize pandemic prevention over pandemic relief. Even on this politicized issue, skeptical groups favor tilting spending toward prevention.[9]

Respondents find reasons for prevention more compelling

Next, we asked respondents to evaluate the persuasiveness of reasons why either prevention or relief spending should be prioritized, based on reasons we identified from news stories and prior

[8]Regression results for these outcomes are in Figure A.2, Tables A.8-A.10.

[9]These groups are less supportive of *pandemic* prevention than general disaster prevention; but their lower enthusiasm for pandemic spending extends to relief.

studies. We presented each respondent with a block of 9 reasons for prioritizing prevention over relief and a block of 10 reasons for prioritizing relief over prevention (block order was randomized). We asked them to evaluate each reason on a four-point scale ranging from "not a reason to prioritize" (0) to "a very good reason to prioritize" (1). This allows us to identify which reasons are the most compelling for prevention or relief.[10]

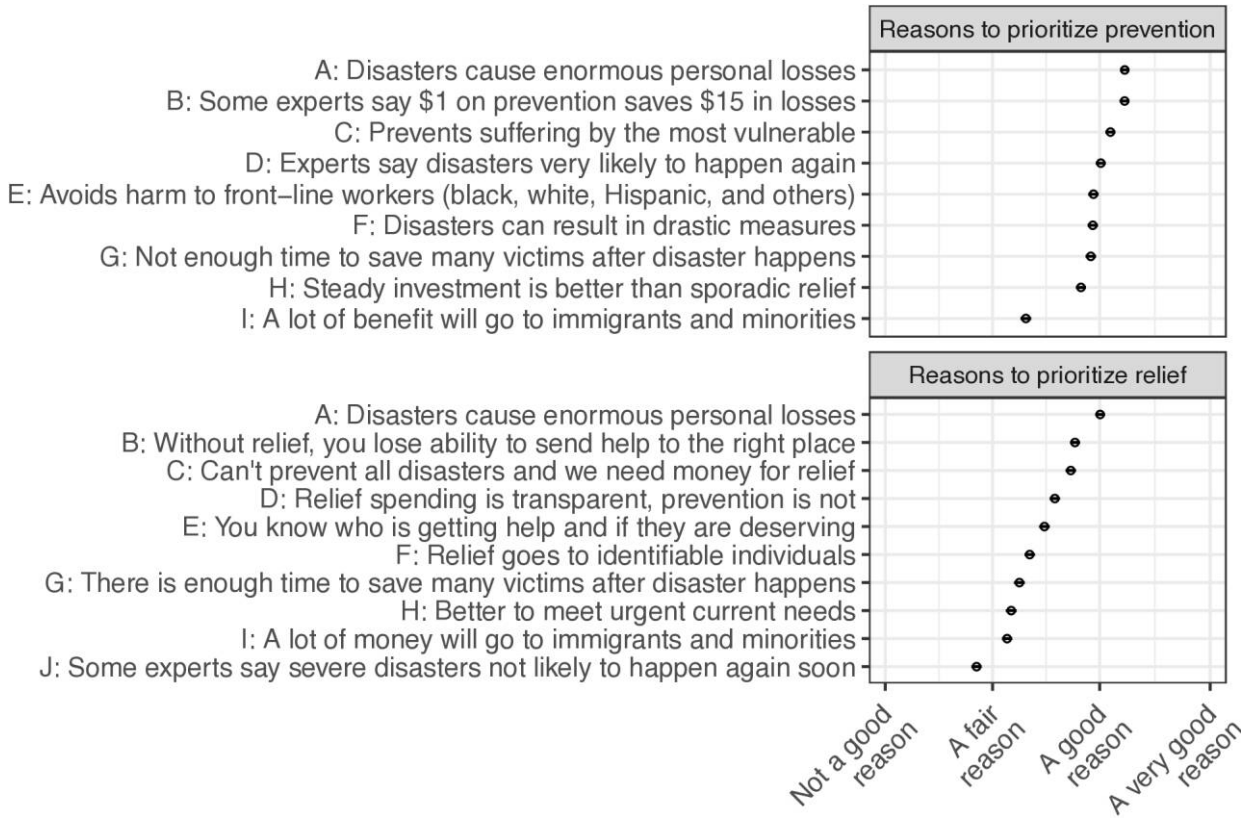

Figure 3: Respondents found most reasons for prioritizing prevention compelling ("a good reason"), and most reasons for relief less so. Table A.2 has the full text.

Figure 3 shows the average persuasiveness for each reason. The most compelling reason for prioritizing prevention *and* for prioritizing relief is that disasters cause enormous losses and "we must do what we can" to prevent/relieve those losses (reason A). Notably, respondents find this reason more persuasive for prevention than relief (compare A in the top and bottom panels). That

[10]We did not register predictions about specific support for a given reason.

is, they find it more compelling to avoid loss than to try to relieve it. The second most compelling justification for each spending type is efficiency (reason B). Again, that is more persuasive for prevention.

Open-ended responses about prevention and relief spending reinforce these findings. Before asking about reasons for prevention or relief, we asked respondents to write what comes to mind when thinking about spending on prevention and relief. (More open-ended analysis is in a later section.) Many wrote that prevention more effectively avoids human losses, similar to our top two closed-ended reasons. As one put it, "the major plus in spending to prevent is that you are stopping human suffering," which "makes more sense than just waiting for it to happen and then trying to clean up afterwards." Further, several directly expressed the effectiveness rationale: "an ounce of prevention is worth a pound of cure." Such colloquialisms suggest that prevention is an intuitive heuristic.

In addition, the figure belies the notion that public concern about corruption and waste limits support for prevention. We posed an anti-corruption rationale for preferring relief in reason D (bottom panel). As the figure shows, this reason is only rated between "fair" and "good," and is less popular than a number of other relief reasons. Respondents generally do not find the potential for misspent funds a compelling reason to prefer relief.

Finally, respondents found almost all reasons for prioritizing prevention to be more persuasive than the reasons for prioritizing relief. The mean for prevention reasons is 0.64, 17 points higher than relief ($p < 0.01$, Table A.15). Overall, then, respondents prefer reasons for prevention to reasons for relief, are not particularly worried about corruption or waste in prevention spending, and find the same main considerations (loss and effectiveness) better reasons for prevention than for relief.

Attitudes are stable even after opposing arguments

Another way to test whether people have meaningful preferences for prevention is to assess their resilience. If prevention preferences are deeply held—as deeply as preferences for relief—then they should shift by a similar amount after exposure to counterarguments.[11]

To test this, we leverage the randomized order of arguments described above. Immediately after presenting respondents with the block of reasons for prevention (relief), we asked whether they agree with prioritizing that form of spending. Half were given reasons to prioritize prevention, asked if they support prioritizing prevention over relief, and then given reasons to prioritize relief and asked if they support prioritizing relief over prevention. The other half received the flipped sequence: given reasons for relief, asked if they support prioritizing relief, given reasons for prevention, and asked if they support prioritizing prevention. Thus, one half was asked about prioritizing prevention after hearing only arguments for prevention, while the other was asked the identical question after hearing reasons for prevention AND reasons for relief. The same holds for the question about prioritizing relief. This process is illustrated in Figure 4.

The results are in Figure 5. After considering the first block of reasons (for prevention or for relief), prioritizing prevention has much higher support than prioritizing relief (0.80 versus 0.61, a difference of 0.19). Importantly, this gap remains nearly unchanged after considering both blocks: respondents still expressed greater support for prevention than relief (0.72 versus 0.55, a

[11] We hypothesized that after considering a wide range of reasons to prioritize prevention and to prioritize relief, Americans will express greater support for both types of spending. However, we intended to test how reasons affect support for prioritizing prevention over relief, not overall levels of support for each type of spending, and we focus here on this unregistered hypothesis.

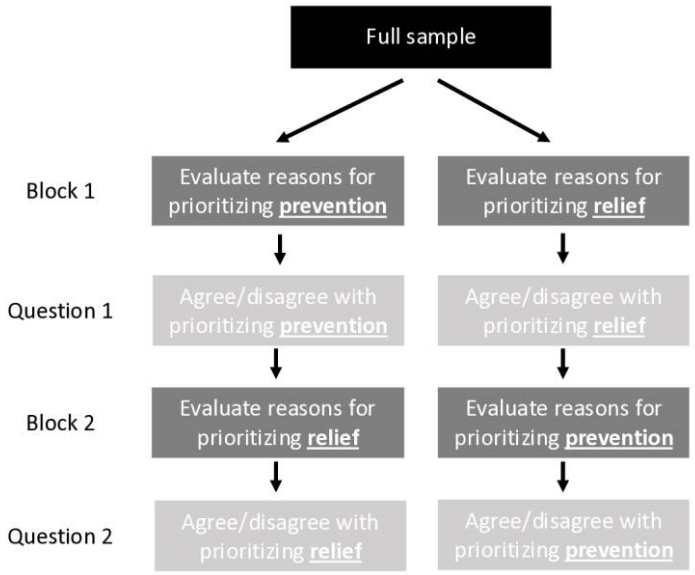

Figure 4: Flowchart illustrating randomization and order of evaluating reasons.

difference of 0.17). That is, countervailing reasons for prevention and relief have similarly modest effects (.08 and .06, respectively; see Figure A.4, Table A.16). Thus, whether considering only arguments for one type of spending or arguments for both, respondents expressed higher levels of support for prioritizing prevention, by a similar, substantively large amount. In short, support for prevention is not easily undermined; it remains stronger than support for relief in the face of arguments for the other side.

Respondents favor candidates who spend more on prevention

The evidence so far points to strong demand for prevention. We next assess the politically consequential question of whether this demand is reflected in candidate evaluations. These evaluations also allow us an additional test of the consistency of public support for prevention across varied measures.

Studies of electoral rewards often focus on national office (for a partial exception see Mal-

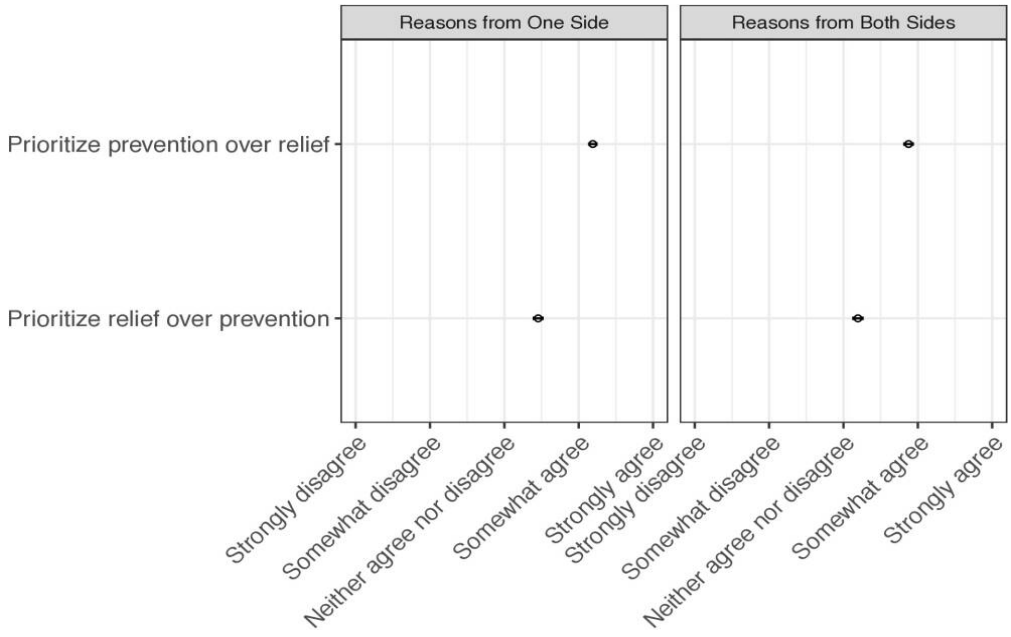

Figure 5: The plot shows average support for prioritizing prevention over relief (top) and for prioritizing relief over prevention (bottom). Support was measured after respondents evaluated a block of reasons for prioritizing the displayed type of spending (left panel) and then after a second block of reasons for the other type (right panel).

hotra and Kuo 2008). But states play a central role in disaster prevention and relief (The Pew Charitable Trusts 2020), and there is reason to expect that voters trust and hold accountable sub-national officials (Jacobs and Matthews 2017). For example, there is a strong correlation between public attitudes on climate change and state policy on environmental protection (Egan and Mullin 2017, Figure 4). This policy responsiveness may hint at a stronger electoral connection at the state level.

To that end, we asked respondents to evaluate a hypothetical candidate for governor who was up for re-election in their state. We varied the candidate's past commitment to investing in disaster prevention or relief. We hypothesized that candidates who increased spending (of either type) would garner more support than candidates who did not, and this effect would be at least as large for prevention as for relief.

As a parsimonious signal of the many attributes that influence candidate evaluation in the

real world, such as partisanship or incumbent performance, we randomly informed respondents of their prior support for the candidate: one group was asked to imagine that they had voted for the incumbent in the last election, and the other group that they had not voted for the incumbent. By varying the respondent's level of prior support for the candidate and controlling on this variable, we capture any other vote consideration that may confound the effect of the information we provide.

Each respondent evaluated a candidate who: (1) increased spending on prevention, (2) did not increase spending on prevention, (3) increased spending on relief, and (4) did not increase spending on relief. Each respondent was given all four scenarios in turn, and asked how likely they would be to vote for the candidate, on a four-point scale. We expressly indicated a trade-off with increased taxes and cutting programs, to make the response more meaningful. Specifically, we told respondents the candidate "increased taxes and cut other government programs to pay for it" or did not increase spending "to avoid increasing taxes or cutting other government programs to pay for it." We generated four observations for each respondent (one for each of the four candidates they rated). We then ran the following regression:

$$y_{ij} = a + b_1 x_{1ij} + b_2 x_{2ij} + b_3 x_{3ij} + b_4 (x_{2ij} x_{3ij}) + \varepsilon_{ij} \quad (1)$$

where y_{ij} is the likelihood that respondent i would vote for candidate j, x_{1ij} is a dummy variable indicating whether the respondent had voted for the hypothetical incumbent in the last election, x_{2ij} is a dummy variable indicating whether the spending was on prevention (as opposed to relief), and x_{3ij} is a dummy variable indicating whether the candidate increased spending. Standard errors are clustered at the respondent level.

Figure 6 shows the effects of increasing relief and prevention spending (see Table A.17 for regression output). These effects can be interpreted as the electoral benefit from increasing

spending relative to not increasing spending for each of the two spending types. The results show that the benefit of increasing prevention spending is 3.3 times larger than the benefit of increasing relief spending.[12]

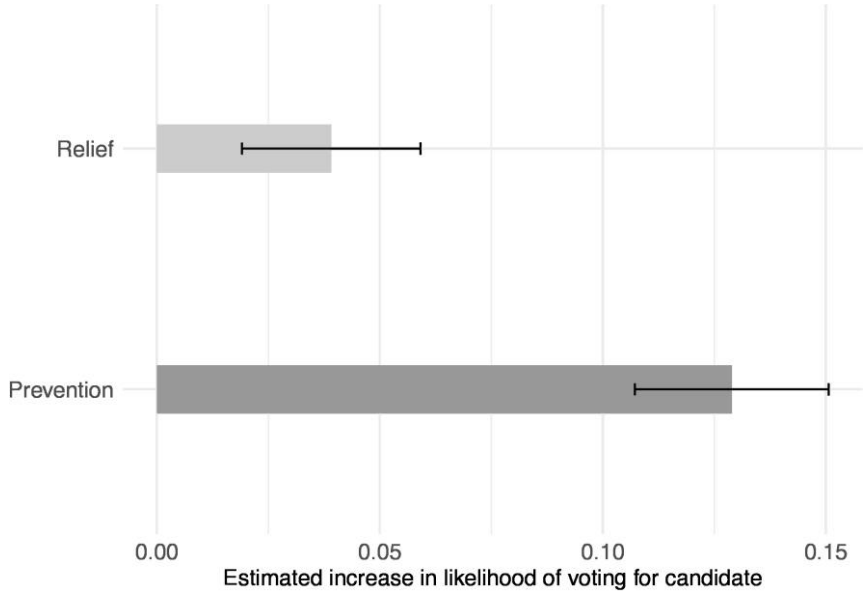

Figure 6: Electoral benefit of increasing spending (relative to not increasing spending) by spending type (vertical axis), with 95 percent confidence intervals.

A potential concern about these results is that they do not reveal intensity. Even if prevention matters more on average, perhaps relief elicits more intense, extreme candidate preferences. To assuage concerns that a preference for pro-relief candidates is more intense, we examine the high end of the candidate scale. The share of respondents who would "definitely vote for" the candidate increased by 9.9 percentage points when the candidate increased spending on prevention, but only 1.5 percentage points when the candidate increased spending on relief. Contrary to conventional wisdom, then, voters appear to be more willing to reward candidates who invest in disaster prevention than candidates who spend on disaster relief, at least when they are equally

[12]The result holds when limited to the first candidate respondents are asked to evaluate (Section A.9 and Table A.18).

observable and salient.

Respondents frequently mention disaster prevention in open text

We have already found consistent prevention preferences across wordings, formats, and in the face of counterarguments. Another test of the existence of "real" attitudes—one that specifically addresses demand effects—is whether respondents articulate preferences for prevention without prompting, and using their own words.

As noted, the first question on the survey asked respondents whether they would like to see the government spend more or less on health, highways and bridges, and natural and public health disasters. After that question, but before we mentioned or defined the concepts of disaster prevention and disaster relief, we asked respondents to write "what thoughts come to mind when you think about spending on natural and public health disasters."

We initially hypothesized that respondents' thoughts on disasters will contain many references to prevention, measured by the share of respondents who mention prevention and the number of prevention-related thoughts (adjusted by response length). We also hypothesized that these measures will be similar to or exceed those for relief.

To test these hypotheses, we manually coded a random 20 percent subsample of the data (n=586) for whether the respondent mentioned prevention or relief, whether they expressed support for prevention or relief, and the number of thoughts related to each. In addition, for mentions of prevention or relief, we developed an algorithm to machine code the remaining 80 percent of the data based on the keywords and phrases used in the manually coded subsample. Details are in Section A.4.

The results mostly confirm our hypotheses (Figure 7). In the full dataset, 30 percent of

respondents mentioned prevention while 33 percent mentioned relief, indicating that respondents were about as likely to mention relief as prevention. In the 20 percent subsample, when respondents mentioned relief or prevention they expressed support for government spending on each at roughly equal and extremely high rates (89 and 91 percent). In sum, respondents independently mention prevention about as often as they mention relief, and those who raise either concept support spending on it at similar levels.[13]

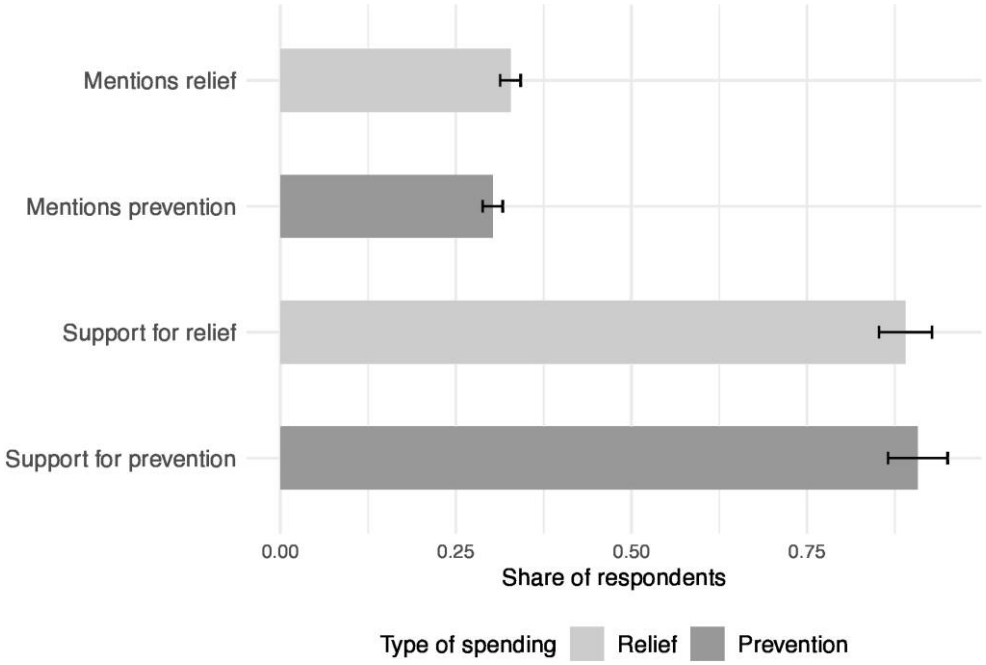

Figure 7: Respondents mention prevention and relief at similar rates, and support for prevention and relief among those who mention the concept is comparably high.

Additionally, respondents draw on these beliefs when answering subsequent closed-ended questions.[14] To illustrate this relationship, we regressed our three main dependent variables on binary variables indicating whether the respondent mentioned relief or prevention in open-text

[13]Prevention is not simply a subsidiary of relief (only 10 percent invoke both concepts), and respondents who mentioned relief or prevention expressed a comparable number of thoughts about each (2.5 for relief and 2.4 for prevention; or 0.08 and 0.07 thoughts per word, respectively).

[14]We did not pre-register this hypothesis.

response (Table 1).

As shown, while mentioning relief is a significant predictor of subsequent support for spending more on relief, mentioning prevention is an even larger and more significant predictor of subsequent support for spending more on prevention. Similarly, mentioning relief is not a significant predictor of subsequent support for prioritizing prevention over relief, while mentioning prevention has a large effect (0.11). For comparison, the effect of moving from Republican to Democrat is 0.16 (Table A.7). These effects are robust to alternative codings, including controls for demographics and party identification, and to the use of logistic regression (Section A.4 and Tables A.20-A.22). These results suggest that respondents answered the closed-ended questions according to their own pre-existing beliefs—not to satisfy social desirability or experimenter demands.

Table 1: Effect of mentioning concept on preferences, by concept mentioned

	More on relief	More on prevention	Prioritize prevention	
	(1)	(2)	(3)	(4)
Mention relief	0.028**		0.006	
	(0.009)		(0.018)	
Mention prevention		0.102***		0.113***
		(0.009)		(0.018)
Constant	0.692***	0.700***	0.687***	0.654***
	(0.005)	(0.005)	(0.011)	(0.011)
Observations	2,883	2,884	2,884	2,884
R^2	0.003	0.041	0.00003	0.013
Adjusted R^2	0.003	0.041	−0.0003	0.013
Residual Std. Error	0.229	0.229	0.463	0.460
Note:				*p<0.05; **p<0.01; ***p<0.001

Preferences are not an artifact of Covid

Our data were collected during the Covid-19 pandemic, raising the possibility that respondents' strong support for disaster prevention may have been a fleeting response to current conditions. We believe this is unlikely for a number of reasons.[15] First, pre-Covid studies discussed earlier suggest that strong support for disaster prevention existed before Covid (see, e.g., Anderson, DeLeo, and Taylor 2022; Bechtel and Mannino 2021). Second, a main mechanism by which Covid-19 might have increased prevention support—namely, that it personally affected many Americans—is not supported by our evidence or other studies. As Bechtel and Mannino (2021) conclude, "neither subjective nor geo-coded measures of disaster exposure predict policy preferences," a finding consistent with our own survey (Section A.8). Finally, our 2021 respondents were not thinking primarily about Covid in responding to our questions about "natural and public health disasters." For example, in their first open-text responses, 47 percent referenced natural disasters while 44 percent of respondents referenced public health disasters (Section A.7).

To further assess the impact that the timing of our 2021 survey might have had, we replicated and extended the first 11 questions of that survey in the fall of 2023, after the salience of the pandemic had subsided. Consistent with our pre-registered hypotheses, respondents in 2023 and 2021 do not differ much—the two samples support increased spending on disasters at similar levels and, most importantly, both strongly prioritize prevention over relief (Section A.7, Figure A.5).[16] In addition, our 2023 survey randomized the wording of our questions, asking respondents about

[15] In this section, results that do not rely on our 2023 follow-up survey are unregistered.

[16] Support for spending more on relief and prevention decreased between 2021 and 2023 by 3.0 and 6.6 points respectively; Tables A.12 and A.14, models 1 and 5.

either "natural disasters," "public health disasters," or "natural and public health disasters" (the last replicating the wording used in our 2021 survey). Support for prevention spending was nearly identical for "natural disasters" as for "public health disasters," and respondents prioritized prevention over relief for both natural and public health disasters, albeit to a somewhat higher degree for the latter (Figure A.6). While our 2023 survey cannot speak to public attitudes pre-Covid, these results imply high support for prevention both at the height of a pandemic and after its salience receded.

Is support for disaster prevention "cheap talk"?

A final potential concern is that surveys may measure what people say, but not what they do. Are the preferences expressed in surveys "cheap talk," or do they align with real-world behavior? As suggestive evidence, we searched for all state ballot measures specific to natural disaster prevention from 1990-2022 in a national database (Table A.3 and Section A.5). We intentionally excluded measures embedded in broader infrastructure packages, to construct a conservative test. We identified 12 measures focused solely on disaster preparedness, 11 of which are general election legislative referendums. Voters approved 82 percent of these referendums at the polls, compared with 75 percent of all general election legislative referendums in a similar time period (1990-2016; see Section A.5). Thus, strong majorities of voters support prevention spending when given the chance to vote on it, and they do so at a similar rate to other referendums.[17]

This exploration also addresses concerns that while our respondents support prevention in general, they may not support specific prevention measures, especially costly ones. The ballot results suggest otherwise. Voters have supported measures costing as much as 6 billion dollars for

[17] A robustness check with a tighter comparison yields similar results (Section A.5).

a variety of specific prevention policies (Table A.3). For example, Texas voters supported spending 800 million dollars for flood mitigation. New Jersey voters approved 400 million dollars for dam construction and flood control projects. Oregon voters supported issuing bonds to retrofit education and emergency services buildings. And Pennsylvania voters approved 100 million dollars in bonds to improve the delivery of emergency services.

In some cases, these referendums were held in the aftermath of a disaster, suggesting proponents' strategic timing and the potential for selection effects. However, such strategic considerations likely apply to most referendums, and the similar passage rate for prevention and all legislative referendums remains a useful signal of the relative popularity of prevention spending.

In addition to using ballot outcomes to measure actual support, we can assess the consistency between these outcomes and pre-election surveys. If they are similar, then by implication, survey responses on disaster prevention preferences predict behavior, and the results of our survey can also be interpreted as reflecting genuine beliefs, not empty talk. Thus, we looked for statewide pre-election surveys on those 12 measures. We found only one such survey, for a 2006 ballot proposition in California.[18] In the last statewide pre-election poll,[19] 59.6 percent indicated they would vote for the proposition, which subsequently passed with 64.3 percent of the vote. While this is only one example, the correspondence of election results with pre-election polling suggests that survey responses manifest in real-world behavior.

[18]Proposition 1E, the Disaster Preparedness and Flood Prevention Bond Act.

[19]The Public Policy Institute of California polled 1,076 likely voters about two weeks before election day. We exclude the 11 percent who answered "don't know."

Conclusion

One of government's most important functions is to alleviate disaster. Major disaster is an increasingly common occurrence, whether from storms, earthquakes, fires, or infectious disease. Yet officials have severely under-invested in disaster prevention. The main explanation for this has pointed to voters' supposed disinterest in prevention or their reluctance to reward officials for it. We find instead that voters strongly support prevention policy and favor incumbents who pursue it. Thus, in this realm at least, the view of the public as unable to sensibly guide or to hold policymakers accountable is wrong.

Our conclusions rest on new data. We measured preferences more accurately, telling respondents that prevention spending is costly or requiring them to make trade-offs for it. We showed that these preferences are rooted in people's own unprompted thoughts about the role government should play in dealing with disasters. We found they are robust to question wordings, extend to evaluations of candidates, and are well crystallized, holding firm in the face of arguments. We used national non-probability weighted samples, finding support even among skeptical subgroups. Our 2023 follow-up survey showed that support for prevention was not a function of the specific timing of our 2021 survey, nor is it limited to public health as opposed to natural disasters. Finally, we found that ballot measures to increase prevention spending pass at a similar rate as other legislative referendums, and suggestive evidence that survey measures of prevention preferences correspond well with voting outcomes on ballot measures, assuaging concerns about the validity of survey responses. Respondents' support for prevention on surveys is matched by voters' support on specific, costly measures.

Our findings diverge from the frequent claim that public support for disaster prevention is

lacking. But there was never any clear evidence supporting this conventional wisdom, and what evidence there was tilted in the other direction, as our literature review indicates. It appears that the mistaken impression of low public support for disaster prevention has been inferred from findings that relief spending, but not prevention spending, generates electoral awards for incumbents (see, e.g., Healy and Malhotra 2009).

Why do voters support prevention at least as much as relief? After all, prevention efforts lack identifiable, sympathetic, beneficiaries. Unlike relief spending, prevention spending generally delivers diffuse rather than individual benefits, mitigating risk for entire communities. Without a tangible connection between policy and pocketbook, prevention policy may lack the intense support that relief may evoke.

Despite these factors, we have found that public support for prevention spending is as strong, if not stronger, than support for relief. One reason may be that the underlying assumption that the public typically evaluates policy primarily in terms of how it will affect them personally is mistaken. An established literature in political psychology and economic behavior finds instead that material self-interest seldom dominates attitudes towards public policy (Mansfield and Mutz 2009; Sears and Funk 1990). And an extensive test of this assumption as it applies to preferences for disaster prevention concluded that "being personally affected by extreme weather events is not systematically correlated with policy preferences" (Bechtel and Mannino 2021, 3)—a conclusion consistent with our own data (Section A.8).

Our findings suggest that public attitudes toward disaster prevention arise instead from more sociotropic concerns about avoiding human suffering and investing national resources wisely in the pursuit of that objective. Though elected officials and the media can (and do) frame some disasters as impacting certain demographic groups or communities, natural and public health dis-

asters are in fact exogenous events that cause intense human suffering to many groups across the nation, and with increasing frequency. For many respondents, this likely neutralizes the extent to which beliefs about the "deservingness" of victims condition policy preferences (Friedman 2019; Gilens 1999). Similarly, the pervasive sense that dealing with disasters (whether through relief or prevention) is an important government responsibility likely mitigates the public tendency to question the role of government.

With these well-documented concerns about government spending held in check, the public draws instead on widely shared values or heuristics to conclude that prevention spending is wise despite potential risks, like corruption. While few people are likely to be aware of the precise economic calculations of disaster experts, such as the 15 to 1 savings we cited above, they may have intuitions that lead them to the same conclusion. Idioms like "an ounce of prevention is worth a pound of cure" are prevalent in daily life and can lead people to understand the benefits of preventive action in many settings, from personal health care decisions to national decisions about disaster mitigation.

With regard to the risk of abuse that might attend prevention spending, theoretical models and controlled experiments indicate that voters may be sensitive to these concerns and will therefore be less supportive of policies that increase the risk of abuse (Andrews, Delton, and Kline 2023; Gailmard and Patty 2019). Yet our respondents do not find this a particularly compelling reason to prioritize relief over prevention. And as our gubernatorial voting experiment suggests, voters do reward incumbents for increasing spending on prevention (even when the precise structure of those prevention policies is not specified).

In connection with this concern, we think it is instructive to compare disaster prevention with defense spending. Both involve corruption-prone spending that is difficult to monitor, prepa-

ration for uncertain threats, and mitigation benefits flowing to whole communities (or the whole nation), not individuals. Yet they both receive high support (Table A.1, rows 6-7). Perhaps, because disaster preparedness and national defense both involve highly valued forms of government protection, voters are somewhat tolerant of the risk of abuse and more at ease with investments that do not produce concrete benefits day to day, much as defense spending lacks obvious benefits in times of peace.

If public support for disaster prevention spending is strong, why do disaster prevention efforts remain underfunded? First, officials and candidates may not know voters care about prevention as much as they do. For example, Anderson, DeLeo, and Taylor (2022) find that state officials believe their constituents pay more attention to relief than prevention. Sheffer, Loewen, and Lucas (2023) similarly found that support for longer-term investments is higher among local elected officials in Canada who believed that voters do not focus on short-term considerations. Officials' (mis)perceptions of constituent demand for prevention should be a topic for future work.

Second, the news media may not cover prevention efforts. The media plays a significant role in shaping public responses to catastrophes (Atkeson and Maestas 2012), but media coverage of natural disaster "tends to focus on the current impact" (Houston, Pfefferbaum, and Rosenholtz 2012, 606). This neglect of prevention efforts is part of a broader pattern extending to various catastrophes, such as terrorism (Nacos, Bloch-Elkon, and Shapiro 2011). Voters may be unable to reward or sanction officials because they lack good information about the prevention efforts officials are, or are not, making (Healy and Malhotra 2009; Trexler and Mullin 2024). Our findings imply that if the media disseminated this information, voters would apply it. In our study, when we informed respondents about an incumbent's prevention spending, they rewarded that incumbent handsomely, much more than they rewarded the incumbent for relief spending.

Similarly, media coverage that raises the visibility and salience of prevention may increase officials' efforts on prevention. This may be especially true when the media covers the negative consequences of a disaster that was not prevented. Such coverage has sometimes opened a window of opportunity for policy change (Kingdon 2010; Schneider 2011). Media attention to a disaster can substantially strengthen policy responses to it (Besley and Burgess 2002). And it may have direct consequence on public officials. For example, randomly informing local elected officials that a local newspaper had covered an infrastructure failure that caused flooding increased their support for remediation requiring a substantial tax increase (Mullin and Hansen 2022). Likewise, in the aftermath of Hurricane Katrina, a highly salient disaster in the national media, officials in other states increased their emphasis on flood-prevention policies (Healy and Malhotra 2009).

A third explanation for under-investment in prevention may be that officeholders are more responsive to small, highly vocal groups than to the preferences of their constituents as a whole. Relief after a specific disaster provides concentrated benefits which may evoke strong demands from those who are directly affected. In contrast, the diffuse benefits of prevention may generate broad and even strong support, but without drawing lawmakers' attention to the same degree.

Finally, even if officials are aware of public demand for prevention and wish to provide it, they may fail due to institutional or bureaucratic limitations. The failures of disaster preparedness are well known in the case of Covid (Kamradt-Scott 2020). Bureaucratic failures and inefficient implementation may be part of the explanation.

These possibilities should be the subject of future research on the under-provision of preventive policies. The problem does not seem to lie with voters, but with institutions.

Acknowledgments

The authors would like to thank Elizabeth Mitchell Elder, Anne McDonough, Alina T. Dunlap, and Sonya G. Chen for valuable research assistance and Megan Mullin and Alex Gazmararian for helpful comments on prior versions. Previous versions of this manuscript were presented at the 2023 annual meeting of the American Political Science Association and at research workshops held at the University of Melbourne, Columbia University, Duke University, and the Center for the Study of Democratic Politics at Princeton University.

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Appendix: The Politics of Disaster Prevention

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Martin Gilens (University of California, Los Angeles)
Nicholas Short (Princeton University)

October 9, 2024

Contents

A.1 Additional Figures

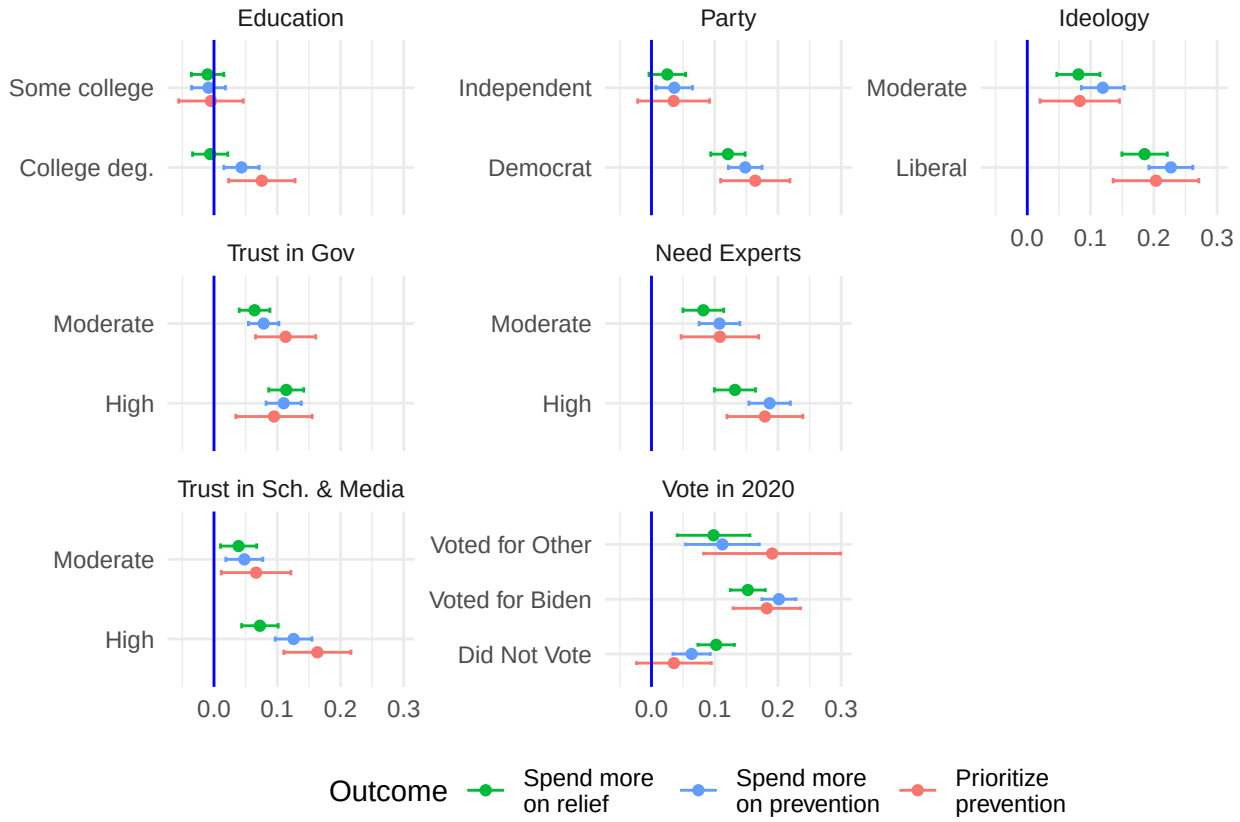

Figure A.1: Each panel in the figure illustrates the estimated coefficient and 95 percent confidence interval from regressing each dependent variable on the predictor along with controls for age, race, and gender (effects for controls not shown). See Tables A.5-A.7.

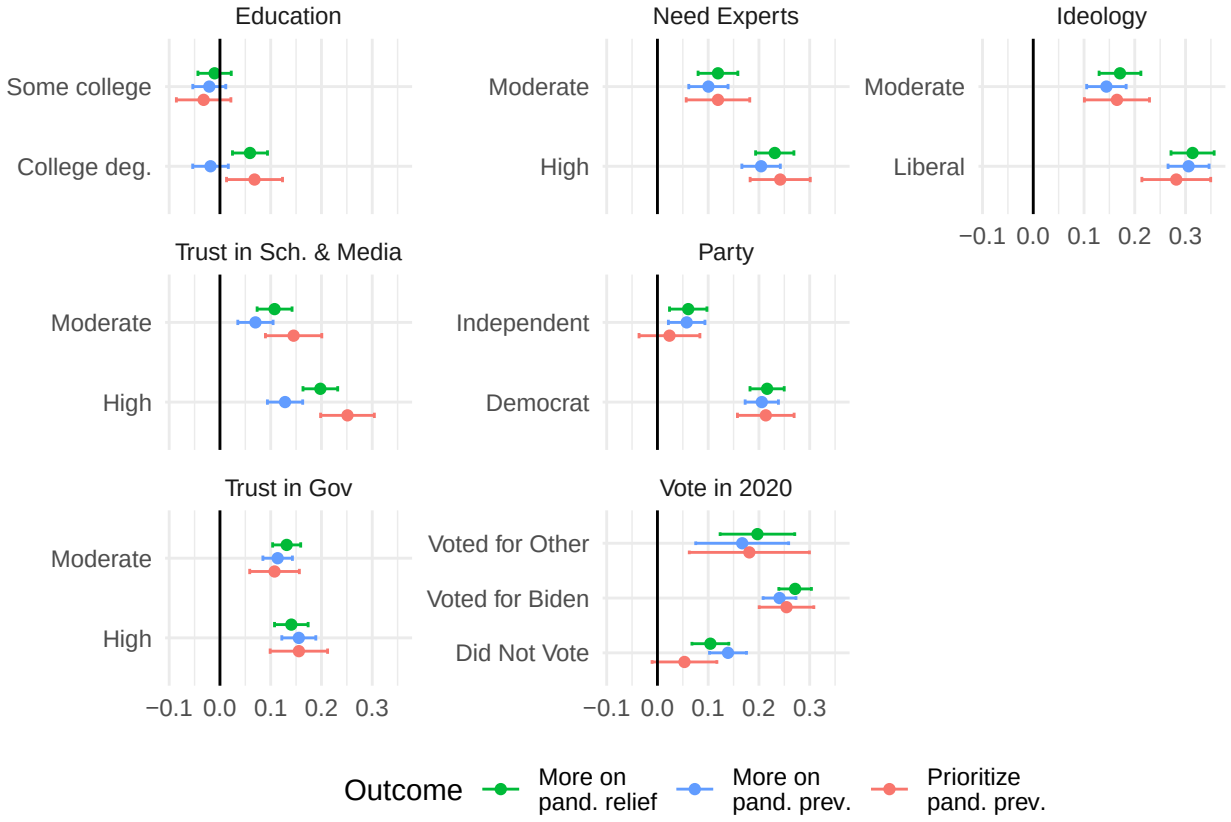

Figure A.2: Each panel in the figure illustrates the estimated coefficient and 95 percent confidence interval from regressing each dependent variable on the predictor along with controls for age, race, and gender (effects for controls not shown). In contrast with Figure A.1, the dependent variables in this figure are specific to pandemic spending and priorities. See Tables A.8-A.10.

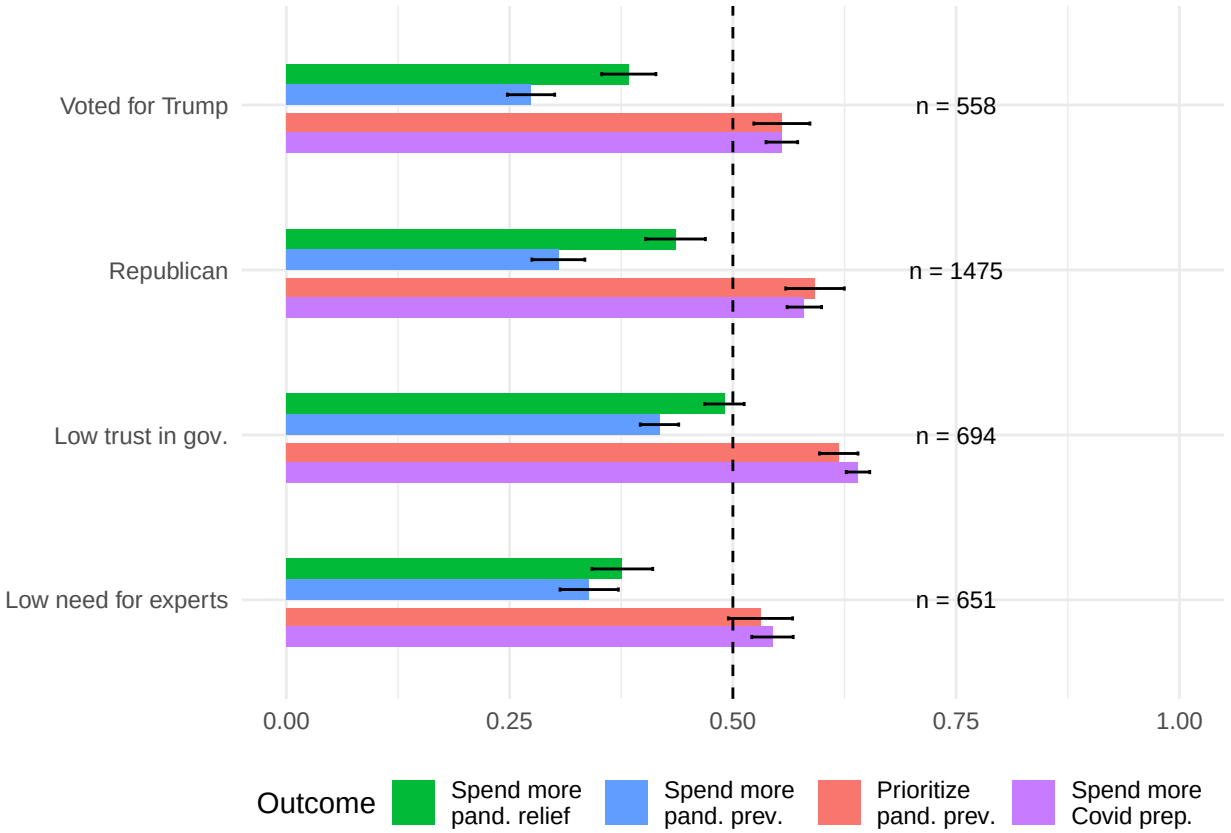

Figure A.3: For each of four sub-groups (vertical axis) the graph shows the share of respondents (horizontal axis) who expressed support for each of four policy preferences (colored bars) specific to pandemics: spending ahead to avoid a future pandemic over spending later to respond to a pandemic after it occurs (red); the government should have spent more to prepare for a pandemic like Covid before it happened (purple); spending more on pandemic prevention (green); spending more on pandemic relief (blue).

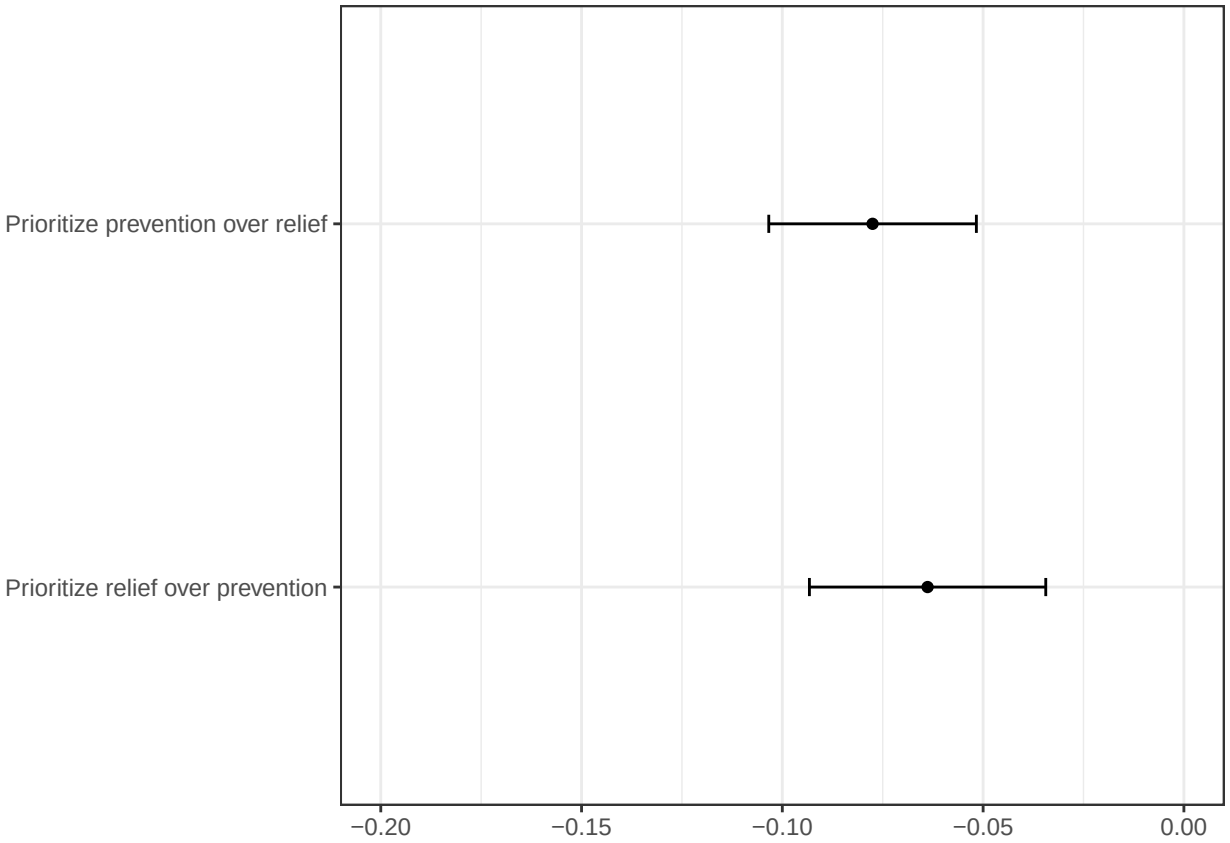

Figure A.4: Evaluating counter-arguments lowers average levels of support for each type of spending, but the effect sizes are comparable for each type of spending. The figure shows the estimates obtained from performing two-sided t-tests, and 95 percent confidence intervals, on the data presented in Figure 5 of the manuscript. See Table A.16.

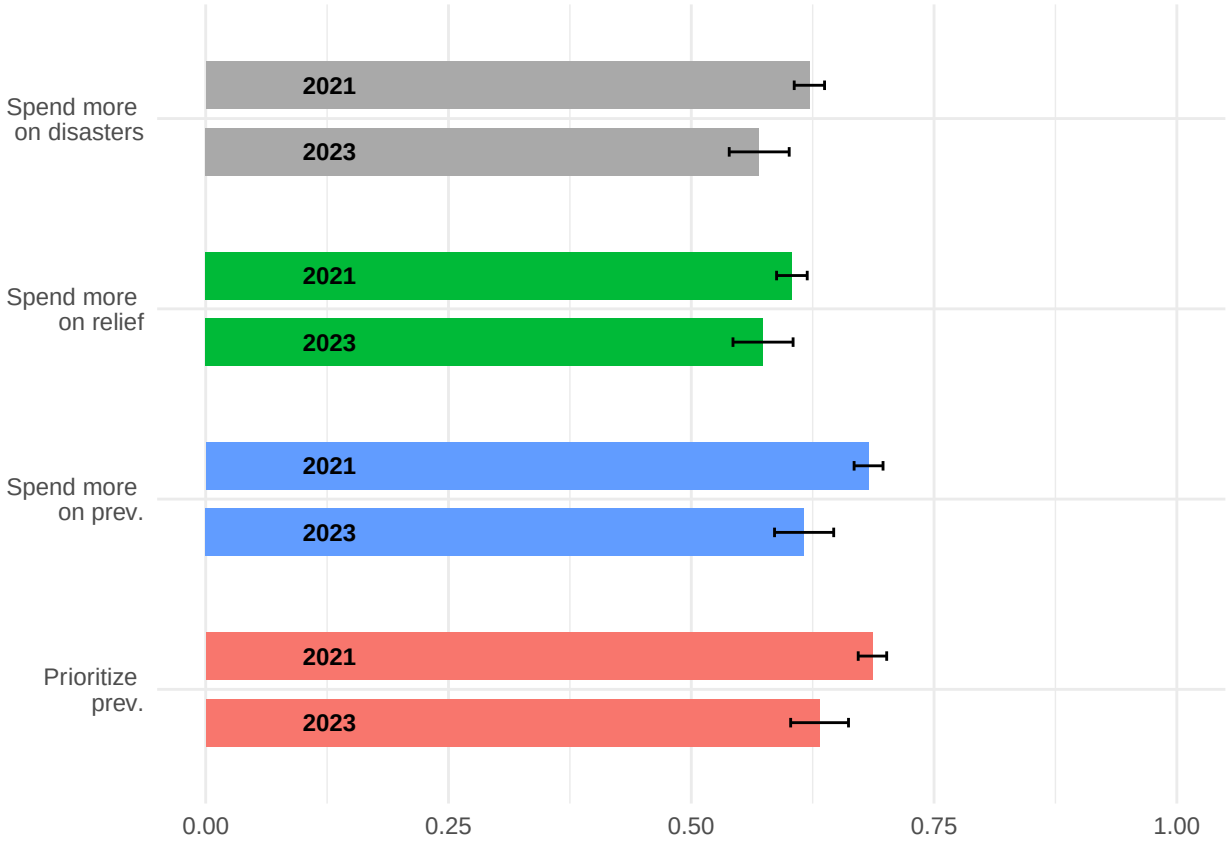

Figure A.5: Disaster policy preferences changed modestly between 2021 and 2023. See Tables A.12 and A.14.

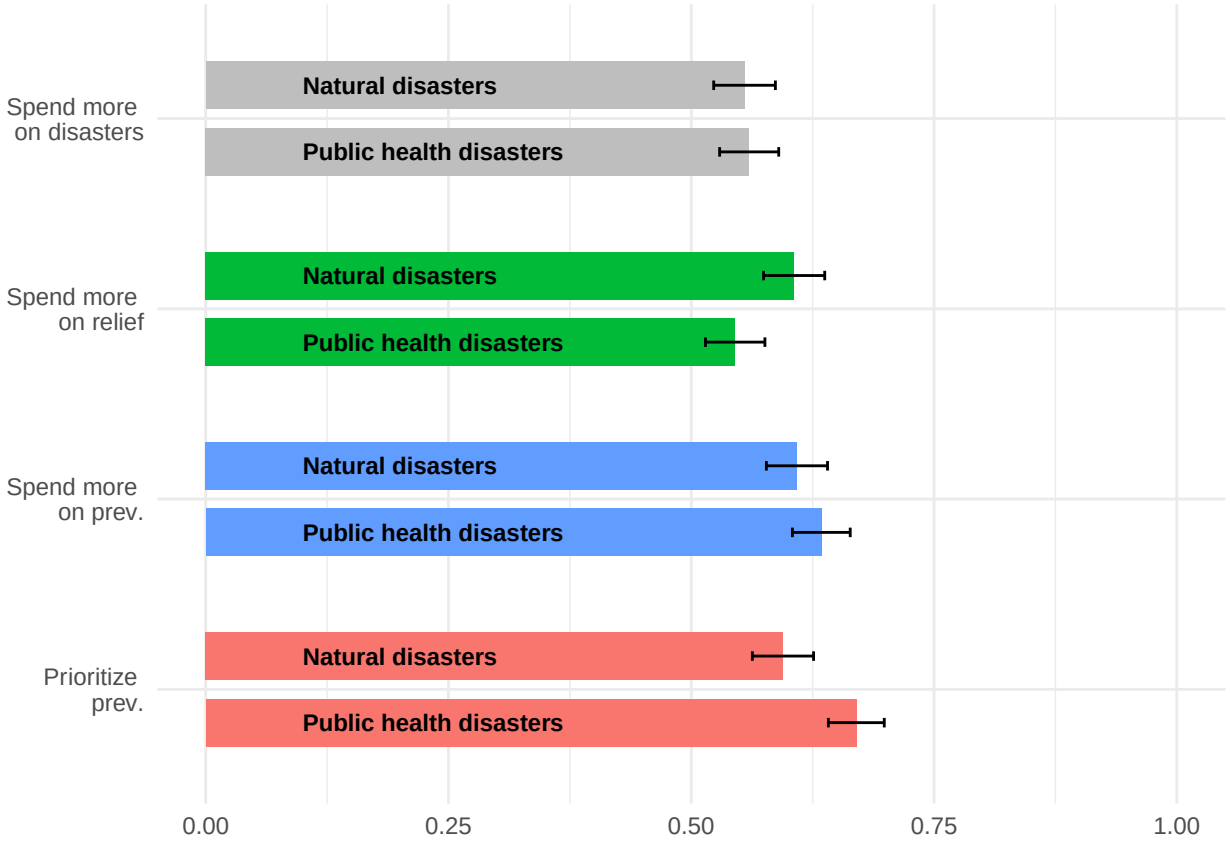

Figure A.6: Disaster policy preferences are not sensitive to question wording emphasizing "natural" or "public health" disasters. See Tables A.11 and A.13.

A.2 Additional Tables (A.1-A.4)

Table A.1: Prior survey questions suggest high levels of support for disaster prevention.

Question	Item	Responses	Survey Details
There are two approaches to health and sickness. One approach–treatment–which seeks to cure sickness, and another approach–prevention–which seeks to prevent sickness. At the moment, do you think that health care services in your area have the right balance between treatment and prevention–or should we be giving more emphasis to treatment, or more emphasis to prevention?		52% - More emphasis to prevention 16% - More emphasis to treatment 27% - Right balance 5% - Don't know/Refused	Survey Sponsor: Trust for America's Health; Robert Wood Johnson Foundation Study Date: November 2, 2009 - November 5, 2009 Sample: National registered voters Sample Size: 1008
In 2005, the federal government spent ninety-three percent of health dollars on diagnosis and treatment of disease, and seven percent of health dollars on researching causes and preventing disease. Do you think the federal government should spend more than seven percent of health dollars on researching causes and preventing disease or do you think that seven percent is about right?		39% - Should spend much more on researching causes and preventing disease 26% - Should spend somewhat more on researching causes and preventing disease 29% - Spending on researching causes and preventing disease is about right 1% - Should spend less on researching causes and preventing disease 5% - Don't know/Refused	Survey Sponsor: Trust for America's Health Study Date: January 18, 2007 - January 22, 2007 Sample: National adult Sample Size: 1015
In order to help fight the Zika virus, do you think the United States should or should not...invest more money to prevent the spread of Zika in the US?		Subpopulation Information: Asked of those who have heard a lot/some/only a little about the Zika virus (85%) 85% - Yes, should 12% - No, should not 3% - Don't know 1% - Refused	Survey Sponsor: Kaiser Family Foundation Study Date: June 15, 2016 - June 21, 2016 Sample: National adult Sample Size: 1201
As you know, there are many competing spending priorities facing [the President (Barack Obama) and Congress /your state's governor and legislature]. For each of the following, please tell me if you think it should be a priority for the [federal government / state government], or not. [Item] (If Yes, ask:) Do you think that should be one of the top priorities, important but not a top priority, or a priority but not an important one?	How about...preparing the public for health problems or injuries resulting from natural disasters, should that be a priority for the [federal / state] government, or not?	For Federal: 39% - One of the top priorities 34% - Important but not a top priority 7% - A priority but not an important one 19% - Not a priority 1% - Don't know/Refused For State: 47% - One of the top priorities 28% - Important but not a top priority 10% - A priority but not an important one 13% - Not a priority 2% - Don't know/Refused	Survey Sponsor: Robert Wood Johnson Foundation; Harvard School of Public Health Study Date: September 19, 2011 - October 2, 2011 Sample: National adult Sample Size: 1598 (each question was asked of 1/6 of the sample)
(Same)	How about...preventing the spread of infectious diseases, including by providing vaccinations, should that be a priority for the [federal / state] government, or not?	For Federal: 38% - One of the top priorities 32% - Important but not a top priority 10% - A priority but not an important one 18% - Not a priority 2% - Don't know/Refused For State: 53% - One of the top priorities 25% - Important but not a top priority	(Same)

Table A.1: Prior survey questions suggest high levels of support for disaster prevention. *(continued)*

Question	Item	Responses	Survey Details
In terms of national priorities, would you say each of the following is very important, somewhat important, not very important, or not at all important?...	Disaster preparedness	70% - Very important 26% - Somewhat important 3% - Not very important 1% - Not at all important * Don't know	Survey Sponsor: Research!America Study Date: January 4, 2006 - January 9, 2006 Sample: National adult Sample Size: 800
(Same)	National defense	78% - Very important 17% - Somewhat important 3% - Not very important 1% - Not at all important 1% Don't know	(Same)

Table A.2: The survey instrument

Variable name	Question text	Response coding	Summary Stat.
Spending on health	Listed below are various areas of government spending. Please indicate whether you would like to see more or less government spending in each area. Remember that spending much more might require a tax increase to pay for it. ...Health	1 = Much more, .75 = Somewhat more, .5 = Same, .25 = Somewhat less, 0 = Much less	0.735 (0.007)
Spending on highways and bridges	...Highways and bridges	Same as above	0.69 (0.006)
Spending on disasters	...Natural and public health disasters	Same as above	0.701 (0.006)
Open text response	What thoughts come to mind when you think about spending on natural and public health disasters? Please write at least 3 sentences, using your own words. You can advance to the next page after 1 minute	Open text	Open text
Spending on disaster relief	Still thinking about various areas of government spending would you like to see more or less government spending on relief to respond after natural and public health disasters occur? Remember that spending much more might require a tax increase to pay for it.	1 = Much more, .75 = Somewhat more, .5 = Same, .25 = Somewhat less, 0 = Much less	0.681 (0.006)
Spending on disaster prevention	Still thinking about various areas of government spending would you like to see more or less government spending ahead to prevent future natural and public health disasters? Remember that spending much more might require a tax increase to pay for it.	Same as above	0.724 (0.006)
Prioritizing prevention	Some people want the government to prioritize disaster [relief over prevention]. Other people want to prioritize disaster [prevention over relief]. Which option do you prefer for natural and public health disasters?	1 = Spend ahead to prevent future natural and public health disasters , 0.5 = Other (specify), 0 = Spend later to respond after natural and public health disasters occur Re-coded as: Prioritize prevention (1) or do not prioritize prevention (0.5, 0)	0.682 (0.012)
Prevention reasons: disasters likely to happen again	For each reason, please indicate if you personally think it is a Very good reason, Good reason, Fair reason, or Not a reason. If you agree with a statement but do not think it is a reason to prioritize prevention, please mark 'Not a reason'. If you disagree with a statement, please mark 'Not a reason' even if you want to prioritize prevention. ...Severe natural and public health disasters are very likely to happen again soon in the US, according to many experts.	1 = Very good reason to prioritize prevention, .66 = Good reason to prioritize prevention, .33 = Fair reason to prioritize prevention, 0 = Not a reason to prioritize prevention	0.661 (0.009)
Prevention reasons: personal losses	...Disasters cause enormous losses once they happen, ruining lives and bringing serious illness, suffering, and death. We must do what we can to prevent that.	Same as above	0.732 (0.008)
Prevention reasons: drastic measures	...Public health disasters can result in drastic measures like stay-at-home orders, lockdowns, restrictions on private and religious activities, and business and school closings. We must do what we can to prevent those.	Same as above	0.633 (0.009)
Prevention reasons: not enough time for rescue	...There is not enough time to save many victims after a disaster happens. With a severe natural or public health disaster, many will die within days.	Same as above	0.627 (0.009)
Prevention reasons: cost efficient	...Some experts estimate that every $1 spent on disaster prevention saves $15 dollars in losses by preventing or reducing future disasters. Meaning, prevention is much more efficient and effective than relief, and avoids waste.	Same as above	0.733 (0.008)

Table A.2: The survey instrument *(continued)*

Variable name	Question text	Response coding	Summary Stat.
Prevention reasons: government capacity	...Sporadic relief spending is not a substitute for sustained prevention funding. Steady investment year after year keeps government from losing people who know what to do, using up stockpiles of equipment and supplies, and falling behind on technology.	Same as above	0.601 (0.009)
Prevention reasons: avoid harm to most vulnerable	...Prevention spending will prevent serious illness, death, and suffering by the most vulnerable, who lack access to decent housing and good healthcare.	Same as above	0.686 (0.008)
Prevention reasons: avoid harm to front-line workers	...Prevention spending will avoid harm to essential front-line workers - black, white, Hispanic, and others - who put their lives on the line for our country.	Same as above	0.638 (0.009)
Prevention reasons: benefits immigrants and minorities	...With prevention spending, a lot of the benefit will go to immigrants or minorities, who are often hardest hit.	Same as above	0.428 (0.009)
Prioritizing prevention: after prevention reasons	When you think about the most persuasive reasons, do you agree or disagree with prioritizing disaster prevention over disaster relief?	1 = Strongly agree, .75 = Somewhat agree, .5 = Neither agree or disagree, .25 = Somewhat disagree, 0 = Strongly disagree	0.757 (0.007)
Relief reasons: disasters not likely to happen again soon	For each reason, please indicate if you personally think it is a Very good reason, Good reason, Fair reason, or Not a reason. If you agree with a statement but do not think it is a reason to prioritize relief, please mark 'Not a reason'. If you disagree with a statement, please mark 'Not a reason' even if you want to prioritize relief. ...Severe natural and public health disasters are not very likely to happen again soon in the US, according to some experts.	1 = Very good reason to prioritize prevention, .66 = Good reason to prioritize prevention, .33 = Fair reason to prioritize prevention, 0 = Not a reason to prioritize prevention	0.278 (0.009)
Relief reasons: personal losses	...Disasters cause enormous losses once they happen, ruining lives and bringing severe illness, suffering, and death. We must do what we can to relieve that.	Same as above	0.658 (0.008)
Relief reasons: enough time for rescue and relief	...There is enough time to save many victims after disaster happens. Even with a severe natural or public health disaster, few will die within days.	Same as above	0.407 (0.009)
Relief reasons: transparency	...It is hard to tell if government leaders are really preventing disasters, but easier to see if they are addressing disasters once they happen. Also, prevention spending can more easily be corrupted or misspent, as it is less visible and concrete. With relief, you can see if it is being spent well or not.	Same as above	0.516 (0.009)
Relief reasons: ability to target places in need	...Disaster prevention is not a substitute for temporary relief funding. Without temporary relief funding you lose the ability to send help to the right place. Once you know what kind of help is needed, you can provide the most appropriate assistance.	Same as above	0.577 (0.008)
Relief reasons: ability to identify recipients	...Relief goes to identifiable individuals. We can see who relief is going to, learn something about their lives, and sympathize with them.	Same as above	0.439 (0.009)
Relief reasons: ability to ensure deservingness	...With relief spending, you know who is getting the help and can make sure they are truly deserving.	Same as above	0.482 (0.009)
Relief reasons: better to meet urgent needs	...Preventing future disasters belongs to the future. Better to meet our urgent current needs instead of making huge expenditures now that won't benefit us for many years.	Same as above	0.382 (0.009)
Relief reasons: cannot prepare for everything	...There are many potential disasters. It is impossible to prepare for all of them. We would need to prepare for disasters from pandemics, and storms, and fires, and so on. We can't completely prevent disasters and need to leave enough money for relief.	Same as above	0.569 (0.009)
Relief reasons: benefits immigrants and minorities	...With relief spending, a lot of the money will go to immigrants or minorities, who are often hardest hit.	Same as above	0.37 (0.009)
Prioritizing relief: after relief reasons	When you think about the most persuasive reasons, do you agree or disagree with prioritizing disaster relief over disaster prevention?	1 = Strongly agree, .75 = Somewhat agree, .5 = Neither agree or disagree, .25 = Somewhat disagree, 0 = Strongly disagree	0.576 (0.008)

Table A.2: The survey instrument *(continued)*

Variable name	Question text	Response coding	Summary Stat.
Candidate: increased prevention spending	Now, please consider a candidate for governor of your state. The candidate has been governor for one term, and is running for re-election. Imagine you [voted / did not vote] for them in their last election. Would you vote for reelection if: ...They increased spending on prevention to prepare for a future disaster before it occurs; they increased taxes and cut other government programs to pay for it.	1 = Definitely would vote, .66 = Probably would vote, .33 = Probably would not vote, 0 = Definitely would not vote	0.569 (0.007)
Candidate: increased relief spending	...They increased spending on relief to respond after a disaster occurred; they increased taxes and cut other government programs to pay for it.	Same as above	0.483 (0.007)
Candidate: did not increase prevention spending	...They did not increase spending on prevention to prepare for a future disaster before it occurs, to avoid increasing taxes or cutting other government programs to pay for it.	Same as above	0.439 (0.007)
Candidate: did not increase relief spending	...They did not increase spending on relief to respond after a disaster occurred, to avoid increasing taxes or cutting other government programs to pay for it.	Same as above	0.446 (0.007)
Spending on pandemic prevention	Would you like to see more or less government spending on pandemic prevention? Remember that spending much more might require a tax increase to pay for it.	1 = Much more, .75 = Somewhat more, .5 = Same, .25 = Somewhat less, 0 = Much less	0.649 (0.007)
Spending on pandemic relief	Would you like to see more or less government spending for pandemic relief? Remember that spending much more might require a tax increase to pay for it.	Same as above	0.607 (0.007)
Prioritizing pandemic prevention	Do you prefer [spending ahead to prevent a future pandemic] or [spending later to respond after a pandemic occurs]?	1= Spend ahead to prevent a future pandemic, 0.5 = Other (specify), 0 = Spend later to respond after a pandemic occurs Re-coded as: Prioritize pandemic prevention (1) or do not prioritize pandemic prevention (0.5, 0)	0.666 (0.012)
Covid-19 spending	Do you think the federal government should have spent more or less to prepare for a pandemic like Covid-19 before it happened? Remember that spending much more might have required a tax increase to pay for it.	1 = Should have spent much more, 0.75 = Should have spent somewhat more, 0.5 = Should have spent the same as it did, 0.25 = Should have spent somewhat less, 0 = Should have spent much less	0.685 (0.007)
Covid exposure	Have you, or any close friends or relatives, been severely ill from Covid-19?	1 = Yes, 0 = No	0.435 (0.012)
Disaster exposure	Have you, or any close friends or relatives, experienced serious damage to personal property or health because of a wildfire, storm, or other natural disaster?	1 = Yes, 0 = No	0.25 (0.011)
Knowledge of current affairs	Now we have a few questions about issues in the news recently. Please do not look up the answer. What was the unemployment rate in the United States as of April 2021?	1 = 4 percent, 2 = 6 percent, 3 = 8 percent, 4 = 10 percent Re-coded as: 1 if respondent selected (2), 0 otherwise	Correct (714), Incorrect (1,951), Missing (267)
Age	What is your Age:	Numeric Re-coded as: 60 or older, 40-59, 39 or younger	60 or older (742), 40-59 (1,062), 39 or younger (1,128)
Race	With what Race/ethnicity do you most closely identify? Check all that apply	1 = White, 2 = Black or African-American, 3 = Asian, 4 = Hispanic or Latino/a, 5 = Other Re-coded as: White (1), Black (2), Asian (3), Other (4, 5)	White (2,265), Black (339), Asian (142), Other (185)
Gender	What is your gender:	Man, Woman, Other	Man (1,378), Woman (1,521), Other (33)
Income	What is your annual household income, before taxes?	8 = 300,000+, 7 = 200-299,000, 6 = 150-199,000, 5 = 110-149,000, 4 = 70-109,000, 3 = 50-69,000, 2 = 30-49,000, 1 = Less than 49,000 Re-coded as: 150,000 or more (6, 7, 8); 70-149,000 (4, 5); 69,000 or less (1, 2, 3)	150,000 or more (162), 70-149,000 (621), 69,000 or less (2,149)
Education	What is the highest level of school you have completed or the highest degree you have received?	6 = Doctorate degree (For example: PhD, EdD); 5 = Professional Degree such as doctor or lawyer (For example: MD, DDS, JD); 4 = Master's degree (For example: MA, MS, MBA); 3 = Bachelor's degree (For example: BA, AB, BS); 2 = Some college but no degree, OR Associate's degree; 1 = High school graduate or less Re-coded as: Bachelor's degree or higher (3, 4, 5, 6), Some college but no degree (2), High school graduate or less (1)	Bachelor's degree or higher (901), Some college but no degree (1,239), High school graduate or less (792)
Party	Generally speaking, do you usually think of yourself as:	1 = Democrat, 2 = Republican, 3 = Independent, 4 = Other Re-coded as: Democrat (1), Republican (2), Independent (3, 4)	Democrat (1,177), Republican (651), Independent (1,104)

Table A.2: The survey instrument *(continued)*

Variable name	Question text	Response coding	Summary Stat.
Ideology	Where would you place yourself on this scale, or haven't you thought much about this?	1 = Extremely liberal, 2 = Liberal, 3 = Slightly liberal, 4 = Moderate, middle of the road, 5 = Slightly conservative, 6 = Conservative, 7 = Extremely conservative, 8 = Haven't thought much about this Re-coded as: Conservative (6, 7), Moderate (3, 4, 5), Liberal (1, 2), Missing (8)	Conservative (477), Moderate (1,076), Liberal (677)
Voted in 2020	A lot of people were not able to vote in the 2020 presidential election, because they were not registered, they were sick, or they just didn't have time. Which of the following best describes you in that election:	4 = I am sure I voted, 3 = I usually vote, but didn't that time, 2 = I thought about voting, but didn't, 1 = I did not vote Re-coded as: 1 if respondent selected (4), 0 otherwise	Voted (1993), Did not vote (673), Missing (267)
Vote choice in 2020	[If respondent selected "I am sure I voted"] In 2020, for whom did you vote for president?	1 = Biden, 2 = Trump, 3 = Other candidate, 4 = Would rather not say Re-coded as: Voted for Biden (1), Voted for Trump (2), Voted for Other (3), Did Not Vote (4 or missing because respondent did not vote in 2020)	Voted for Biden (1,167), Voted for Trump (694), Voted for Other (77), Did Note Vote (941)
Trust in government	How often can you trust the federal government in Washington to do what is right?	Always, Most of the time, About half of the time, Some of the time, Never Re-coded as: High (Always or Most of the time), Moderate (About half of the time), Low (Some of the time or Never)	High (419), Moderate (769), Low (1,475)
Trust in schools and media	How well does the following statement describe your view? "Much of what people hear in schools and the media are lies designed to keep people from learning the real truth about those in power."	Extremely well, Very well, Somewhat well, Not very well, Not at all Re-coded as: High (Not at all, Not very well), Moderate (Somewhat well), Low (Not very well or Not at all)	High (898), Moderate (929), Low (836)
Need for experts	How much do ordinary people need the help of experts to understand complicated things like science and health?	A great deal, A lot, A moderate amount, A little, Not at all Re-coded as: High (A great deal or A lot), Moderate (A moderate amount), Low (A little or Not at all)	High (1,113), Moderate (991), Low (558)

Note:
The question wording and response coding (original and re-coded, where applicable) is shown for each item of the survey analyzed in the manuscript.
The summary statistics column shows the mean and standard error for each numeric variable or, for factor variables, the number of respondents in each condition.

Table A.3: Natural Disaster Prevention Ballot Measures

State	Year	Measure	Type	Outcome	Purpose
California	1994	Prop. 1A	Both	Failed (45.7%)	Issue $2 billion in bonds for relief and prevention after Northridge Earthquake
California	2006	Prop. 1E	Prevention	Passed (64.3%)	Issue $4 billion in bonds for rebuilding and repairing levees and other flood control structures
California	2022	Prop. 30	Prevention	Failed (43%)	Increase taxes on income over $2 million by 1.75% to fund zero-emissions vehicle projects and wildfire prevention programs
Louisiana	2002	Amend. 10	Prevention	Failed (46%)	Assist farmers who forego irrigation in times of drought, develop water resources, and create a drought protection trust fund
Louisiana	2020	Amend. 3	Prevention	Passed (55%)	Allow use of budget stabilization fund for state costs associated with federally declared disasters
Missouri	2000	Amend. 1	Prevention	Passed (59.2%)	Create a budget reserve fund for use in emergencies due to disasters or revenue shortfalls
New Jersey	2003	Question 3	Prevention	Passed (59%)	Issue $400 million in bonds for dams and flood control projects
Oregon	2002	Measure 15	Prevention	Passed (55.5%)	Issue bonds to retrofit or reinforce public education buildings
Oregon	2002	Measure 16	Prevention	Passed (55.7%)	Issue bonds to retrofit or reinforce emergency services buildings
Pennsylvania	2002	Question	Prevention	Passed (72%)	Issue $100 million in bonds to improve delivery of volunteer fire and emergency services
Rhode Island	2004	Question 7	Prevention	Passed (67.7%)	Issue $10 million in bonds to connect water systems in case of an emergency and preserve water rights in two resevoirs
Texas	2019	Prop. 8	Prevention	Passed (77.9%)	Use about $800 million from state rainy day fund to create flood infrastructure fund to finance flood mitigation and control projects

Note:

Table A.4: Follow-up Survey Hypothesis Testing

Outcome	Hyp.	Binary, controls	Binary, no controls	Five-point, controls	Five-point, no controls	Hyp. supported?
Support in 2023 not substantially less than in 2021						
Spend more on disasters	H20	-0.057* (0.025)	-0.05* (0.025)	-0.03* (0.012)	-0.025 (0.013)	Yes
Spend more on relief	H22	-0.035 (0.025)	-0.03 (0.025)	-0.017 (0.012)	-0.03 (0.025)	Yes
Spend more on prev.	H17	-0.068** (0.024)	-0.066** (0.024)	-0.033** (0.012)	-0.03* (0.012)	Yes
Prioritize prev.	H18	-0.056* (0.024)	-0.054* (0.024)	–	–	Yes
Support for health disasters not substantially greater than natural disasters						
Spend more on disasters	H19	-0.005 (0.032)	0.005 (0.032)	-0.019 (0.015)	-0.014 (0.015)	Yes
Spend more on relief	H21	-0.068* (0.032)	-0.061 (0.032)	-0.04** (0.015)	-0.061 (0.032)	Yes
Spend more on prev.	H15	0.018 (0.031)	0.025 (0.031)	-0.008 (0.015)	-0.004 (0.015)	Yes
Prioritize prev.	H16	0.072* (0.03)	0.076* (0.031)	–	–	Yes

$^{*}p < .05$; $^{**}p < .01$; ^{a} indicates auxiliary hypothesis; see Tables A.11-A.14 for regression output

A.3 Survey Details

We used Bovitz-Forthright to recruit a national non-probability sample of respondents to a pilot study in June 2021 and an identical, larger survey in September 2021, with a total of 3,723 respondents. Finding no significant differences between the pilot study and main study on several central questions, we combined the two samples. We excluded respondents who were younger than 18, or did not consent to participate, or sped through the survey. Specifically, we excluded 634 respondents who spent less than half the median duration (641 seconds) taking the survey. We also excluded those who failed one or more attention checks before the first substantive question, leaving a total of 2,932 observations. Respondents who failed attention checks or were speeders are not significantly different on any of the main spending questions or on party identification.

We asked Bovitz-Forthright to recruit a nationally representative sample by age, gender, race and ethnicity, Census region, education, and party identification. After the exclusions described above, the sample remained representative within suitable margins for gender, race and ethnicity, and Census region, but differed from population benchmarks[1] by more than four percentage points for at least some levels of age, education, and party identification (DeBell and Krosnick 2009). We also wished to make the sample representative by income using post-stratification weights. We therefore developed a set of survey weights based on education, income, age, and party identification.

Before generating the weights, we used a simple imputation procedure (median value) to eliminate a small number of missing values on the post-stratification variables (DeBell and Kros-

[1]We used 2021 Gallup polling to benchmark party identification and 2019 American Community Survey polling to benchmark all other demographics.

nick 2009, 7). We then implement post-stratification weighting using raking or iterative proportional fitting, with the `rake()` function from the survey package in R. We truncated weights that exceed 3.2 times the mean weight, which affected a very small number of observations ($n = 82$ or 2.8% of the sample) (DeBell and Krosnick 2009, 8). We selected this cap in order to constrain the design effect, which drops to the acceptable threshold of 0.5 with this specification.

To avoid nuisance order effects, we randomized the order in which prevention and relief appeared in a question or response option. We found little evidence that question or response order influences responses.

We pre-registered the main hypotheses tested with this initial survey (Section A.12.1). In this paper, we test all hypotheses except H14, for which we lack data. H12a and H12b are reported elsewhere.

We fielded a follow-up survey in the fall of 2023 using the same vendor, recruitment quotas, exclusion criteria (yielding 2,104 respondents), and the same weighting procedures. We repeated the first 11 questions from our 2021 survey, in the same order, but incorporated a question wording experiment: respondents were randomly assigned to answer questions about "natural disasters," about "public health disasters," or about "natural and public health disasters." The latter wording is identical to the 2021 survey.

We pre-registed the main hypotheses tested with the follow-up survey (Section A.12.2).

A.4 Open-Text Responses

Our first open-text prompt is purposefully non-directive and by design does not mention prevention or relief: "what thoughts come to mind when you think about spending on natural and public health disasters." In our analysis, we focus on respondents' mentions of disaster prevention and

disaster relief, but we note that about 45 percent of the respondents didn't clearly reference either prevention or relief, focusing instead on specific disasters or kinds of disasters, on disasters' consequences, or other concerns.

To code the open-text responses, we did the following. First, we had three graduate research assistants code two separate randomly drawn samples of 292 responses each according to an extensive rubric for determining whether the respondent mentioned or expressed support for disaster prevention or relief. Under this rubric, prevention was defined as "spending ahead of a disaster to reduce the risk that a disaster will occur or to minimize its effects." It includes a wide variety of preparedness measures and mentions of climate change mitigation, vaccines, or public health measures. Relief was defined as "spending after a disaster is underway to help with recovery." It includes monetary or in-kind aid (food, shelter, etc.) or support of any kind, or mentions of organizations and government agencies responsible for providing relief, like FEMA or the Red Cross. The assistants also attempted to count the number of distinct assertions or thoughts related to each concept (separating distinct policy measures and rationales for them).

One assistant coded both samples so that inter-coder reliability scores could be calculated for each sample. Inter-coder reliability, as measured by Kripendorff's alpha, was generally quite high for whether the respondent mentioned prevention (0.81 and 0.84 in sample 1 and 2, respectively) and somewhat lower for whether the respondent mentioned relief (0.66 and 0.71 in samples 1 and 2, respectively). Because the assistants only coded for whether a respondent expressed support for a concept (relief or prevention) if that concept was mentioned, inter-coder reliability scores for support are comparable to those for whether the concept is mentioned (0.79 and 0.80 for expressing support for prevention in samples 1 and 2 respectively, and 0.61 and 0.67 for expressing support for relief in samples 1 and 2, respectively).

We then had two of the authors separately attempt to "resolve" about 10 examples of coding discrepancies for each variable. When we analyzed these efforts, we found that the discrepancies arose from difficult cases and so the authors could not agree on how to "resolve" them in more than 50 percent of cases. Accordingly, we chose instead to devise a conservative approach for automatically resolving discrepancies between coders. Specifically, if the coders disagreed over whether a concept (relief or prevention) was mentioned, we coded it as being not mentioned. If the coders agreed that the concept was mentioned but disagreed over whether the respondent expressed support for it, we did the following. If at least one coder indicated that the respondent expressed neither support nor opposition (9), we used that code. If one coder indicated that the respondent expressed opposition (0) while the other indicated the respondent expressed support (1) for a concept, we coded it as expressing both opposition and support (0.5). Finally, if one coder indicated that the respondent expressed both opposition and support (0.5) but the other coder indicated that the respondent expressed only opposition (0) or only support (1), we also coded it as expressing both (0.5).

Next, after resolving coding discrepancies, we used a randomly drawn 75 percent sample of the 594 hand-coded responses (the training set) to develop lexicons of words and phrases that are predictive of mentioning prevention and relief under the rubric, and tested the performance of this labeling scheme on the remaining 25 percent (the testing set). The lexicon for prevention included terms like: prepare, prevent, plan, ready, future, ahead, before, in advance, faster, quicker, improve, shot, vaccine, climate change, and global warming. The lexicon for relief included terms like: relief (relieve), repair, restore, rebuild, assist, support, respond (response), aid, "help +" (helping people or need help but not help alone), food, shelter, FEMA, and Red Cross. In our algorithm, if a response contained any of the terms in the lexicon for each concept, we labelled the

response as mentioning that concept.

Using these lexicons, we were able to achieve a balanced accuracy of about 79 percent in the algorithm for labeling mentions of relief and about 90 percent in the algorithm for labeling mentions of prevention, based on performance in the testing set. Balanced, here, means that the true negative rate and the true positive rate were both within 1 percentage point of the overall accuracy. These accuracy rates are comparable to the agreement rates achieved by human coders (84.5 percent for coding mentions of relief and 92 percent for coding mentions of prevention) so that the application of the labeling algorithms to the remaining text performs about as well as human coders. Accordingly, we then used these algorithms to label the remaining 80 percent of the data set that was not hand coded.

In the manuscript, we report regression analyses that use open text mentions to predict subsequent responses on the disaster support questions (Table 1). As a robustness check, we estimates similar models but coded the predictors somewhat differently to account for responses that only mention prevention, only mention relief, or mention both. We also included all three predictors in models where the dependent variable was support for spending more on relief and support for spending more on prevention. Consistent with the findings we report in Table 1, prevention mentions had a bigger effect than relief mentions on prevention support, and a similar effect on relief support. Importantly, the effect of mentioning prevention was twice as large on prevention support than on relief support (Table A.20).

A.5 Ballot Measures

To assess whether public opinion survey data reflects real world voting behavior, we attempted to identify ballot initiatives related to natural disaster prevention since 1990. Specifically, we used

keywords to query the National Conference of State Legislatures (NCSL) Statewide Ballot Measures Database, across all states and all elections from 1990-2022.[2] The keywords were: disaster, disasters, flood, levee, weather, storm, tornado, hurricane, earthquake, seismic, drought, mitigate, mitigation, mitigating, prepare, preparedness, preparation, preparing, prevent, prevention, preventing, hazard, emergency, and erosion.

To identify voting outcomes on disaster-specific measures, we excluded broader "omnibus" measures, like infrastructure measures that had some provisions for seismic retrofitting and water project measures that had some provisions for flood control, storm water management, or lead abatement. For similar reasons, we also generally excluded environmental protection measures, even those including some provisions for mitigating climate change, where other more general preferences for conserving resources, avoiding environmental degradation, or preserving land and recreational spaces might dominate over concerns about disaster mitigation. Additionally, we excluded a small number of measures that dealt with issues somewhat ancillary to our core concern, like the continuity of government operations during a disaster or the taxation of new construction after a disaster. And though we sought to identify prevention-related measures, we did not exclude a measure simply because it also deals with disaster relief. Finally, we focused on relatively recent proposals by narrowing our search to ballot measures since 1990, and on natural rather than public health disasters. The results are shown in Table A.3.

The largest bond measure in the sample is California's Proposition 1E in 2006, which approved $4 billion in bonds for flood protection. But it is worth noting that voter demand for

[2]The Statewide Ballot Measures Database published by the National Conference of State Legislatures is available at https://www.ncsl.org/elections-and-campaigns/statewide-ballot-measures-database (last accessed April 10, 2024).

flood prevention in California was not exhausted by Proposition 1E alone; it passed alongside other major bond measures and Proposition 84, which authorized an additional $5.4 billion in bonds for water projects, including $800 million for flood control. This suggests that voters are willing to approve some disaster prevention measures at comfortable margins, even in the face of high costs.

To compare the passage rates of prevention-specific ballot measures to similar measures, we downloaded the raw data for all ballot measures in the NCSL database from 1990-2016 (9 of our 12 prevention measures are from this time frame). Eleven of our 12 prevention measures are general election legislative referendums. We therefore used the database to calculate the passage rate (74.7 percent) for the 1,895 general election legislative referendums voted on from 1990-2016. The passage rate for our 11 prevention referendums (81.8 percent) is similar to the passage rate of all general election legislative referendums.

As a robustness check, we also defined a smaller comparison group of legislative referendums that were on the ballot in the same states and years as our prevention measures and that also dealt with state spending or revenue. Specifically, for each prevention measure, we identified all non-prevention general election referendums passed in the same state and election, that had a bond measure, budget, or tax and revenue topic area (using the NCSL topic area codings). We were able to find comparison ballot measures for 7 of our 11 prevention referendums. Those 7 prevention referendums passed at a rate of 71 percent, compared with 65 percent for the comparison referendums.

A.6 Prior Surveys

We searched for prevention-related questions in the Roper Center iPoll database, the General Social Survey, and the National Election Survey for 2000-2019, and in Odum and ICPSR for 2010-2019.

We searched the following terms in iPoll's archive of U.S. survey questions from 2000-2019: disaster; prevent + disaster, harm, suffer, crisis/crises; prevention; preventing harm; prepared*; preventive; protective; damage reduction; remediation; pandemic; pandemic + treat/relief; communicable disease; relief; tornado, flood, hurricane + prepare*. We ignored questions related to prevention or relief in countries and U.S. territories outside of the continental U.S., immigration, unemployment/welfare relief, and tax relief. We did not include questions about government measures to prevent terrorist attacks and shootings.

We focused our analysis on four type of questions: 1) Questions that force a choice or tradeoff between prevention and relief (on any issue area); 2) Questions about disaster prevention and relief that are comparable; 3) Questions about disaster prevention that are comparable to questions about prevention in other areas or other spending priorities; 4) Questions about disaster relief, with no comparable prevention question.

A.7 Survey Timing

Our survey broadly explores public preferences towards "natural and public health disasters," but the main survey was fielded when the nation was just recovering from the Delta-variant surge of the Coronavirus, raising the possibility that respondents were primed to evaluate our questions in terms of the pandemic. In other words, the responses might only reflect preferences towards "public health disasters" even though we also asked about natural disasters.

We conducted several tests to explore this possibility. None of them support the view that

respondents were primed to think specifically about the Covid-19 pandemic.

First, before we introduced the concepts of prevention and relief, we asked respondents "What thoughts come to mind when you think about spending on natural and public health disasters?" We then analyzed these open-text responses to determine how often respondents mentioned words indicative of public health disasters including Covid (health, covid, pandemic, virus, vaccin, flu, cdc, and opioid) and how often respondents used words indicative of natural disasters (natural, fire, flood, earthquake, storm, hurricane, tornado, levee, weather, seismic, drought, warming, and climate).

If respondents were primed to think in terms of the pandemic, we would expect to see much higher shares of respondents discussing public health disasters like Covid rather than natural disasters. We found, instead, that 44 percent of respondents used words associated with public health disasters, while 47 percent used words associated with natural disasters (36 percent mentioned neither concept while 27 percent mentioned both). In short, respondents were equally likely to voluntarily discuss both natural disasters and public health disasters, and more than a quarter of respondents discussed both simultaneously.

Second, we repeated this analysis using the responses to a second open-text question after we introduced the concepts of prevention and relief. For those randomized to see references to relief before references to prevention, the question was: "What thoughts come to mind when you think about spending later to respond or spending ahead to prevent?" Because respondents were asked to write about the more general distinction between prevention and relief, higher shares (66 percent) mentioned neither natural or public health disasters. At the same time, 27 percent mentioned natural disasters while only 12 percent mentioned public health disasters.

Third, we included questions specifically about pandemics (introduced later in the survey

after the prompt, "Now we have some questions about pandemics."). If respondents had been primed to answer the earlier, more general, questions based solely on their views about the pandemic, then the answers to each general question should not be significantly different from the answers to the pandemic specific questions. We instead find evidence that the answers were significantly different. The Pearson correlation coefficient between individual preferences for spending more on relief and more on *pandemic* relief is only 0.39; for spending more on prevention and more on *pandemic* prevention is only 0.42; and for prioritizing prevention and prioritizing *pandemic* prevention is only 0.45. And these individual differences aggregate into significantly different group preferences (to see this with respect to groups skeptical of prevention, compare Figure 2 and Figure A.3).

Fourth, if respondents were primed to think in terms of the pandemic, then their exposure to the pandemic should be a stronger predictor of attitudes than exposure to natural disasters. We test this by regressing policy preferences on demographics (age, race, gender) plus party identification and we include, in the first regression, a dummy variable for Covid exposure and, in the second regression, a dummy variable for natural disaster exposure. We then compare the significance of the difference between the coefficients for the two exposure measures.

We find that exposure to natural disasters is a better predictor of preferences, in the sense of being generally larger in magnitude (Tables A.5-A.10), but the difference in effect sizes is not significant at the five percent level for any of the three main outcomes (spending more on relief, spending more on prevention, and prioritizing prevention over relief). This is consistent with Bechtel and Mannino (2021), who found that exposure generally does not predict public preferences, and with our analysis of exposure effects. Personally experiencing severe illness from Covid, or serious damage from a natural disaster, are only weakly related to support for disaster

spending, and unrelated to preferences for prevention (Section A.8).

Fifth, pre-Covid data suggests that strong support for disaster prevention existed before Covid. We searched for pre-Covid prevention-related questions in major databases and academic surveys (see Section 6). Though we did not find any repeated measures (and thus cannot definitively assess change over time), we did find evidence that Americans prioritized prevention over relief on health care, and believed that disaster preparedness was a very important national priority. In 2009, 52 percent favored "prevent[ing] sickness" over "treatment—which seeks to cure sickness" (Table A.1, row 1). And in 2006, 70 percent said that disaster preparedness was a "very important" national priority, just below the proportion endorsing jobs, social security and Medicare, and national defense (Table A.1, row 6; see also rows 2-5). These findings are consistent with the two studies discussed in the literature review which found support for disaster prevention, both conducted before 2020 (Anderson, DeLeo, and Taylor 2022; Bechtel and Mannino 2021).

Sixth, we conducted a follow-up survey during the fall of 2023, when the salience of the Covid pandemic was much lower than our initial survey conducted in 2021.[3] Consistent with our preregistered hypotheses, Figure A.5 shows that respondents continued to prioritize prevention over relief, with only modest declines in support for increasing prevention spending, relief spending, and disaster spending more generally (see also Appendix Tables A.12 and A.14).[4]

Finally, we also conducted a question wording experiment in our 2023 follow-up survey. One-third of the respondents were randomly assigned the identical question wordings from our

[3]During 2021, cable TV news devoted an average of 209 minutes per month to Covid, compared with only 33 minutes per month during the first ten months of 2023. Based on a search for "covid" in the Stanford Cable TV News Analyzer, https://tvnews.stanford.edu/.

[4]The declines are still smaller with the five-point scale, as shown in Appendix Table A.4.

2021 survey, asking about "natural and public health disasters." Another third were asked only about "natural disasters," while the remaining third were asked about "public health disasters." As Figure A.6 shows, support for prevention spending was nearly identical for natural and public health disasters (blue bars), and respondents prioritized prevention over relief for both natural and public health disasters, albeit to a somewhat higher degree for the latter (red bars) (see also Tables A.11 and A.13).[5]

A.8 Exposure and Policy Preferences

We also hypothesized that individual experiences with disasters influence disaster preferences. Egan and Mullin (2012) found that exposure to higher temperatures affects beliefs about global warming, though the effect tends to be short-lived. At the same time, Bechtel and Mannino (2021) found that neither personal exposure to natural disasters, subjective beliefs about exposure risk, nor objective measures of exposure risk predict a higher willingness to invest in disaster preparedness. Given mixed results about personal experience, we tentatively hypothesized that, conditional on party identification, respondents who had suffered from a natural disaster or Covid will be more supportive of both types of spending, with the former being especially favorable towards relief and the latter especially favorable towards prevention.

We tested these hypotheses by regressing the two outcomes (support for spending more on relief and support for spending more on prevention) on demographic variables (age, race, and gender) plus party identification and a binary variable indicating the respondent (or a close friend) had suffered from Covid. We then repeated the analysis using a binary variable indicating whether

[5]Support for increasing relief spending was modestly higher in the natural disasters than the public health disasters condition (green bars).

the respondent (or a close friend) suffered from a natural disaster instead of Covid.

The results partially confirm our hypotheses (Table A.19). Those who were exposed to Covid have higher levels of support for spending more on relief (0.037, $p < 0.01$) and on prevention (0.038, $p < 0.01$), but they are not especially favorable towards prevention (i.e. the coefficients are not significantly different at the five percent level). Similarly, those who were exposed to natural disasters have higher levels of support for spending more on relief (0.046, $p < 0.01$) and on prevention (0.061, $p < 0.01$), but they are not especially favorable towards relief.

We also tested whether individual experiences with disasters influences how respondents prioritize prevention over relief.[6] Neither Covid exposure (0.008, $p = 0.70$) nor natural disaster exposure (-0.012, $p = 0.63$) is a significant predictor of support for prioritizing prevention over relief (Table A.19).

A.9 Additional Robustness Checks

In the candidate evaluation portion of the survey, all respondents were asked about all four combinations of increasing/not increasing spending on prevention/relief. It is therefore possible that consistency pressures may have led respondents to assess the subsequent candidates they were asked about more in line with their response to the first candidate than they otherwise would have. If so, our findings that candidates get a larger boost from increasing prevention than relief might be an underestimate of the difference. As a robustness check, we examined only responses to the first candidate each respondent was asked about, finding virtually identical results (compare Table A.17 with Table A.18).

[6]We did not pre-register a hypothesis about the effect of disaster exposure on this outcome.

A.10 Follow-up Survey Hypotheses

Table A.4 presents the results from testing each registered hypothesis and robustness check for the 2023 follow-up survey. Regression output is in Tables A.11-A.14. In Table A.4, columns 3-6 report the estimated coefficient and standard error for each test, according to whether the outcome was coded as binary or on a five-point scale, and whether we included controls for age, ethnoracial identification, income, and education.

A.11 Ethical Practices Concerning Human Subjects

Support for this research was provided by the Center for the Study of Democratic Politics at Princeton University, the John Simon Guggenheim Memorial Foundation, and the UCLA Luskin School of Public Affairs.

Our research engaged with human subjects and we therefore complied fully with APSA's Principles and Guidance for Human Subjects Research, in addition to obtaining approval from our Institutional Review Board and complying with all relevant laws. Specifically, we asked for respondents' consent to taking they survey and we ended the survey for those who did not provide consent. We also excluded responses from minors. Personally identifiable information was not provided to us by the survey vendor and we preserve confidentiality by reporting only aggregate statistics. We did not withhold any information from our survey respondents or deceive respondents in any way. We did not ask questions that posed more than a minimal risk of harm or discomfort. Survey participants were compensated with cash rewards from Bovitz/Forthright that depend on the length and type of survey and the number of Forthright surveys taken.

A.12 Pre-Analysis Plans

A.12.1 Initial Registration

ASPREDICTED

Wharton CREDIBILITY LAB
UNIVERSITY of PENNSYLVANIA

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Survey of public attitudes toward disaster prevention and relief (#74288)

Created: 09/09/2021 12:37 PM (PT)

This is an anonymized copy (without author names) of the pre-registration. It was created by the author(s) to use during peer-review.
A non-anonymized version (containing author names) should be made available by the authors when the work it supports is made public.

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1) Have any data been collected for this study already?
It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.

2) What's the main question being asked or hypothesis being tested in this study?
Hyp: American adults are strongly supportive of government spending to prevent natural disasters and at least as supportive of such spending as they are of relief spending to respond when disasters occur.

3) Describe the key dependent variable(s) specifying how they will be measured.
Survey questions regarding preferences for increased or decreased support for disaster prevention and relief spending.

4) How many and which conditions will participants be assigned to?
Largely observational study with some randomized order of survey questions.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
Linear regression, logit regression, and related techniques will be used to assess the following hypotheses:

H1a: Support for government spending on disasters will be similar to, or greater than, support for spending on health or highways.

H1b: Unprompted, Americans generally support prevention spending as much or more than relief spending.

H2: After considering a wide range of reasons to prioritize prevention and to prioritize relief, Americans will express greater support for both.

H3-H9: Support for prevention (cf. relief) will be higher among
-Democrats
-Liberals
-Biden voters
-Respondents with higher levels of education
-Respondents with less negative attitudes toward government
-Respondents who have more trust in schools and the media
-Respondents who belief that people need experts

H10a: A hypothetical incumbent electoral candidate's support will be greater if they increased prevention or relief spending than if they cut prevention or relief spending.

H10b: The increase in support will be similar to or higher in response to an increase in prevention cf. an increase in relief.

H10c: The decrease in support will be similar to or lower in response to a cut in prevention cf. a cut in relief.

H11a: Conditional on Party ID, respondents who have personally (or close friend) suffered from Covid will be more favorable toward relief spending and especially toward prevention spending.

H11b: Conditional on Party ID, Respondents who have personally (or close friend) suffered from natural disaster will be more favorable toward prevention spending and especially toward relief spending.

H12a: Reasons to favor prevention or relief that focus on differential benefits to minorities or immigrants will be less persuasive than more universalistic reasons.

H12b: The relationship in H13a will be moderated by respondents' level of racial resentment.

H13a: Open ended thoughts on disasters will contain many references to prevention.

A.12.2 Follow-up Survey Registration

Disaster prevention: followup survey

Anonymized registration Updates

Metadata

Preregistration Template from AsPredicted.org

Data collection

It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.

Hypothesis

Is support for disaster prevention still high two years after the height of Covid, and robust to question wording about public health or natural disasters?

Specifically, this study is designed to test whether our 2021 findings that Americans support spending to prevent "natural and public health disasters" are substantially tied to the Covid public health emergency (which may have peaked in salience around that time). If so, support for prevention spending may be limited to "public health disasters" and not extend to "natural disasters," and may have been temporarily heightened by Covid conditions.

To test this, we are fielding a short follow-up survey that repeats some of the questions from our 2021 survey, using the same question order and sample selection, while adding a question wording experiment described below.

Dependent variable

The key dependent variables are:

1. Support for spending on disaster prevention: "Still thinking about various areas of government spending, would you like to see more or less government spending ahead to prevent future [natural/public health/natural and public health] disasters? Remember that spending much more might require a tax increase to pay for it." Responses are a five-point scale: much more, somewhat more, same, somewhat less, much less.

2. Support for prioritizing disaster prevention or disaster relief: "Some people want the government to prioritize disaster relief over prevention. Other people want to prioritize disaster prevention over relief. Which option do you prefer for [natural/public health/natural and public health] disasters?" [Order of prevention or relief will be randomized.] There are three response options: Spend ahead to prevent future [natural/public health/natural and public health] disasters; Spend later to respond after [natural/public health/natural and public health] disasters occur; Other (specify in your own words). We will code this as a binary variable, pooling "other" with "spend later".

We also examine the following auxiliary dependent variables:

3. Support for spending on disasters: "Listed below are various areas of government spending. Please indicate whether you would like to see more or less government spending in each area. Remember that spending much more might require a tax increase to pay for it." The question is asked in turn for "Health," "Highways and bridges," and "[Natural/Public health/Natural and public health] disasters." Responses are a five-point scale: much more, somewhat more, same, somewhat less, much less.

4. Support for spending on disaster relief. "Still thinking about various areas of government spending, would you like to see more or less government spending on relief to respond after [natural/public health/natural and public health] disasters occur? Remember that spending much more might require a tax increase to pay for it." Responses are on a five-point scale: much more, somewhat more, same, somewhat less, much less.

Conditions

Participants will be assigned to six conditions: 3 disaster types X 2 order conditions.

For the dependent variables above, participants will be randomly assigned to one of three disaster types: "natural disasters," "public health disasters," or "natural and public health disasters." The latter condition replicates the wording in our prior survey, fielded in 2021.

To avoid nuisance order effects, within each of these three conditions, participants will also be assigned to one of two question-order conditions: relief first or prevention first. This will determine whether the participant will answer questions about disaster relief before answering questions about disaster prevention or vice versa. When both concepts are included in the same question, it will also determine which concept is mentioned first. The same assignment holds for question order and the phrase order within the trade-off question (dependent variable 2).

Analyses

H15. Support for prevention spending (dependent variable 1) is not substantially greater in the "public health disasters" condition than in the "natural disasters" condition.

We will test this hypothesis by calculating the difference in mean scores on the 5-point scale and the difference in the percent of respondents favoring an increase in spending between these two conditions. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precision of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

"Substantially greater" is defined below.

H16. Support for prioritizing prevention over relief (dependent variable 2) is not substantially greater in the "public health disasters" condition than in the "natural disasters" condition.

We will test this hypothesis by calculating the difference in the percent of respondents who favor prioritizing prevention over relief between the "public health disaster" and "natural disaster" conditions. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precisions of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

H17. Support for prevention spending (dependent variable 1) in the "natural and public health disasters" condition will not be substantially lower in 2023 compared to 2021.

We will test this hypothesis by calculating the difference in mean scores on the 5-point scale and the difference in the percent of respondents favoring an increase in spending between the "natural and public health disasters" condition in 2023 and the identical question asked in our 2021 survey. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precisions of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

H18. Support for prioritizing prevention over relief (dependent variable 2) in the "natural and public health disasters" condition will not be substantially lower in 2023 compared to 2021.

We will test this hypothesis by calculating the difference in the percent of respondents who favor prioritizing prevention over relief between the "natural and public health disasters" condition in 2023 and the identical question asked in our 2021 survey. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precision of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

We will also conduct a series of auxiliary analyses that do not bear directly on the central questions outlined above. These are not central tests of our main argument, and disconfirming them does not mean our main claims are disconfirmed, but rather they help us more fully describe opinion dynamics.

H19. Support for disaster spending (dependent variable 3) is not substantially greater in the "public health disasters" condition than in the "natural disasters" condition.

We will test this hypothesis by calculating the difference in mean scores on the 5-point scale and the difference in the percent of respondents favoring an increase in spending between these two conditions. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precision of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

H20. Support for disaster spending (dependent variable 3) in the "natural and public health disasters" condition will not be substantially lower in 2023 compared to 2021.

We will test this hypothesis by calculating the difference in mean scores on the 5-point scale and the difference in the percent of respondents favoring an increase in spending between the "natural and public health disasters" condition in 2023 and the identical question asked in our 2021 survey. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precision of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

H21 Support for disaster relief spending (dependent variable 4) is not substantially greater in the "public health disasters" condition than in the "natural disasters" condition.

We will test this hypothesis by calculating the difference in mean scores on the 5-point scale and the difference in the percent of respondents favoring an increase in spending between these two conditions. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precision of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

H22. Support for disaster relief spending (dependent variable 4) in the "natural and public health disasters" condition will not be substantially lower in 2023 compared to 2021.

We will test this hypothesis by calculating the difference in mean scores on the 5-point scale and the difference in the percent of respondents favoring an increase in spending between the "natural and public health disasters" condition in 2023 and the identical question asked in our 2021 survey. We will include controls for age, income, gender, ethnoracial identification, and education to improve the precision of these estimates. We will confirm these results without any controls using t-tests or similar inferential statistics (e.g. significance of difference intervals).

For Hypotheses H15 through H22 we will consider a finding of less than five percentage points difference (between experimental conditions or between the same questions on the 2021 and 2023 surveys) to indicate "little difference," a difference of greater than 10 percentage points to indicate a "substantial difference," and a difference between 5 and 10 percentage points to indicate a "modest difference."

Outliers and Exclusions

The following participants will be excluded: those who do not provide consent, those who are not 18 years of age or older, those who fail non-substantive attention checks asked at the beginning of the survey, and those who speed through the survey (defined as spending less than half the median duration). For respondents who take the survey more than once we will use the most complete response and exclude the other or, if they are equally complete, we will randomly select one response to keep.

Sample Size

Roughly 2100 observations will be collected.

Other

See "Analyses" above for auxiliary analyses. In addition, expanding on our answer to Question 1: All but one test will be performed on data we are collecting in October 2023. This 2023 instrument includes some questions from our 2021 survey, and new questions designed to test explanations for patterns we observed in the 2021 data. One test will use 2021 and 2023 data to detect possible changes over time. Here we pre-register hypotheses about the 2023 survey. We do not add or modify any hypotheses about the 2021 data, which is the subject of a separate pre-registration. We continue hypothesis numbering (starting here with H15) to avoid confusion when referring to hypotheses in the same document. Data are collected by Bovitz/Forthright.

Name

Disaster Politics Follow-Up Survey

Type of Project

Survey

Other

No response

A.13 Regression Output Tables (A.5-A.22)

Table A.5: Support for spending more on disaster relief

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age: 40-59	−0.035**	−0.033**	−0.034**	−0.028*	−0.014	−0.025*	−0.034**	−0.038**	−0.031*	−0.031*
	(0.013)	(0.012)	(0.013)	(0.012)	(0.014)	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)
Age: 60 or older	−0.039**	−0.042**	−0.038*	−0.036*	−0.012	−0.025	−0.040**	−0.044**	−0.036*	−0.038*
	(0.015)	(0.015)	(0.015)	(0.014)	(0.016)	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)
Race: Black	0.088***	0.084***	0.088***	0.052**	0.069***	0.058***	0.072***	0.084***	0.080***	0.051**
	(0.016)	(0.016)	(0.016)	(0.016)	(0.019)	(0.016)	(0.017)	(0.017)	(0.017)	(0.017)
Race: Asian	−0.005	0.004	−0.004	−0.023	−0.011	−0.028	−0.028	−0.022	−0.019	−0.020
	(0.020)	(0.020)	(0.020)	(0.020)	(0.024)	(0.020)	(0.020)	(0.021)	(0.021)	(0.021)
Race: Multiple and Other	−0.002	−0.005	−0.002	−0.011	−0.010	−0.016	−0.023	−0.012	−0.018	−0.028
	(0.020)	(0.020)	(0.020)	(0.019)	(0.023)	(0.019)	(0.020)	(0.021)	(0.020)	(0.020)
Gender: Female	0.021	0.012	0.020	0.020	0.020	0.019	0.035**	0.029*	0.025*	0.024*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.012)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Gender: Other	0.142***	0.129***	0.142***	0.119***	0.081*	0.116***	0.154***	0.137***	0.118***	0.109**
	(0.031)	(0.030)	(0.031)	(0.033)	(0.036)	(0.034)	(0.031)	(0.031)	(0.031)	(0.036)
Income: 75-149k		−0.034**								
		(0.012)								
Income: 150k or more		−0.069**								
		(0.023)								
Educ: Some college			−0.010							
			(0.013)							
Educ: Bachelor's or higher			−0.006							
			(0.014)							
Party: Independent				0.025						0.025
				(0.015)						(0.015)
Party: Democrat				0.121***						0.122***
				(0.014)						(0.014)
Ideology: Moderate					0.081***					
					(0.017)					
Ideology: Liberal					0.185***					
					(0.018)					
Voted for Other						0.098***				
						(0.029)				
Did Not Vote						0.102***				
						(0.015)				
Voted for Biden						0.152***				
						(0.014)				
Trust in gov: Moderate							0.064***			
							(0.012)			
Trust in gov: High							0.114***			
							(0.014)			
Trust in media: Moderate								0.039**		
								(0.015)		

Trust in media: High								0.073***		
								(0.015)		
Need experts: Moderate									0.082***	
									(0.016)	
Need experts: High									0.132***	
									(0.017)	
Exposure: Covid										0.029*
										(0.013)
Exposure: Disaster										0.040*
										(0.020)
Exposure: Both										0.065***
										(0.016)
Constant	0.684***	0.710***	0.689***	0.639***	0.582***	0.594***	0.648***	0.647***	0.599***	0.616***
	(0.012)	(0.012)	(0.015)	(0.015)	(0.019)	(0.015)	(0.013)	(0.016)	(0.018)	(0.017)
N	2,859	2,859	2,859	2,859	2,213	2,811	2,638	2,638	2,637	2,641
R^2	0.024	0.034	0.025	0.067	0.097	0.092	0.060	0.042	0.070	0.083
Adjusted R^2	0.022	0.031	0.022	0.064	0.093	0.089	0.057	0.038	0.067	0.078
Residual Std. Error	0.233	0.232	0.233	0.228	0.227	0.224	0.229	0.233	0.228	0.228

*p < .05; **p < .01; ***p < .001

Table A.6: Support for spending more on disaster prevention

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age: 40-59	−0.028*	−0.029*	−0.029*	−0.019	−0.004	−0.017	−0.024	−0.027*	−0.016	−0.018
	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)
Age: 60 or older	−0.023	−0.024	−0.026	−0.019	0.001	−0.015	−0.023	−0.030	−0.018	−0.019
	(0.015)	(0.015)	(0.015)	(0.014)	(0.016)	(0.013)	(0.015)	(0.015)	(0.015)	(0.015)
Race: Black	0.039*	0.040*	0.044*	−0.005	0.025	−0.009	0.029	0.040*	0.035*	0.002
	(0.017)	(0.017)	(0.017)	(0.017)	(0.020)	(0.017)	(0.018)	(0.017)	(0.017)	(0.017)
Race: Asian	0.026	0.025	0.021	0.004	0.015	0.002	0.006	0.005	0.011	0.014
	(0.021)	(0.021)	(0.021)	(0.021)	(0.023)	(0.020)	(0.020)	(0.021)	(0.022)	(0.022)
Race: Multiple and Other	−0.020	−0.020	−0.018	−0.031	−0.037	−0.028	−0.033	−0.021	−0.030	−0.040
	(0.022)	(0.022)	(0.022)	(0.021)	(0.025)	(0.020)	(0.023)	(0.023)	(0.021)	(0.022)
Gender: Female	−0.004	−0.003	0.002	−0.005	−0.001	0.002	0.008	0.007	−0.002	−0.002
	(0.011)	(0.011)	(0.012)	(0.011)	(0.012)	(0.011)	(0.012)	(0.012)	(0.011)	(0.011)
Gender: Other	0.115**	0.117**	0.122**	0.087*	0.043	0.076	0.132**	0.114**	0.089**	0.082*
	(0.038)	(0.038)	(0.038)	(0.043)	(0.038)	(0.041)	(0.040)	(0.041)	(0.033)	(0.041)
Income: 75-149k		−0.009								
		(0.013)								
Income: 150k or more		0.019								
		(0.021)								
Educ: Some college			−0.009							
			(0.014)							
Educ: Bachelor's or higher			0.043**							
			(0.014)							
Party: Independent				0.036*						0.032*
				(0.015)						(0.015)
Party: Democrat				0.148***						0.146***
				(0.014)						(0.014)

Ideology: Moderate					0.119***					
					(0.017)					
Ideology: Liberal					0.227***					
					(0.018)					
Voted for Other						0.112***				
						(0.030)				
Did Not Vote						0.063***				
						(0.015)				
Voted for Biden						0.201***				
						(0.014)				
Trust in gov: Moderate							0.079***			
							(0.012)			
Trust in gov: High							0.110***			
							(0.014)			
Trust in media: Moderate								0.048**		
								(0.015)		
Trust in media: High								0.126***		
								(0.015)		
Need experts: Moderate									0.108***	
									(0.016)	
Need experts: High									0.187***	
									(0.017)	
Exposure: Covid										0.034*
										(0.014)
Exposure: Disaster										0.070***
										(0.019)
Exposure: Both										0.074***
										(0.016)
Constant	0.735***	0.736***	0.721***	0.676***	0.610***	0.638***	0.695***	0.675***	0.616***	0.650***
	(0.012)	(0.012)	(0.015)	(0.015)	(0.019)	(0.015)	(0.014)	(0.016)	(0.018)	(0.017)
N	2,860	2,860	2,860	2,860	2,214	2,812	2,639	2,639	2,638	2,642
R^2	0.010	0.011	0.018	0.070	0.118	0.130	0.046	0.056	0.096	0.088
Adjusted R^2	0.007	0.008	0.015	0.067	0.114	0.127	0.043	0.053	0.093	0.084
Residual Std. Error	0.238	0.238	0.237	0.231	0.227	0.222	0.234	0.234	0.228	0.230

*p < .05; **p < .01; ***p < .001

Table A.7: Support for prioritizing prevention over relief

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age: 40-59	0.010	0.010	0.009	0.020	0.047	0.021	0.017	0.015	0.024	0.019
	(0.025)	(0.025)	(0.025)	(0.025)	(0.029)	(0.025)	(0.026)	(0.026)	(0.026)	(0.026)
Age: 60 or older	0.020	0.023	0.015	0.024	0.042	0.027	0.017	0.012	0.020	0.018
	(0.028)	(0.028)	(0.028)	(0.028)	(0.032)	(0.028)	(0.029)	(0.029)	(0.029)	(0.029)
Race: Black	0.025	0.029	0.031	−0.024	0.015	−0.008	0.011	0.021	0.018	−0.022
	(0.033)	(0.033)	(0.034)	(0.034)	(0.039)	(0.033)	(0.035)	(0.035)	(0.035)	(0.036)
Race: Asian	0.065	0.056	0.056	0.041	0.047	0.049	0.051	0.046	0.060	0.054
	(0.049)	(0.049)	(0.049)	(0.048)	(0.055)	(0.049)	(0.049)	(0.050)	(0.051)	(0.049)
Race: Multiple and Other	−0.041	−0.037	−0.039	−0.053	−0.056	−0.044	−0.043	−0.031	−0.040	−0.048
	(0.037)	(0.037)	(0.037)	(0.036)	(0.042)	(0.037)	(0.039)	(0.039)	(0.038)	(0.038)

Gender: Female	−0.035	−0.025	−0.024	−0.036	−0.028	−0.027	−0.028	−0.022	−0.035	−0.033
	(0.021)	(0.022)	(0.022)	(0.021)	(0.024)	(0.021)	(0.022)	(0.022)	(0.022)	(0.022)
Gender: Other	−0.033	−0.022	−0.022	−0.064	−0.104	−0.082	−0.036	−0.050	−0.073	−0.075
	(0.100)	(0.100)	(0.099)	(0.106)	(0.104)	(0.097)	(0.103)	(0.102)	(0.097)	(0.115)
Income: 75-149k		0.045								
		(0.024)								
Income: 150k or more		0.057								
		(0.041)								
Educ: Some college			−0.005							
			(0.026)							
Educ: Bachelor's or higher			0.076**							
			(0.027)							
Party: Independent				0.035						0.030
				(0.029)						(0.030)
Party: Democrat				0.164***						0.160***
				(0.028)						(0.029)
Ideology: Moderate					0.083**					
					(0.032)					
Ideology: Liberal					0.203***					
					(0.035)					
Voted for Other						0.191***				
						(0.055)				
Did Not Vote						0.035				
						(0.030)				
Voted for Biden						0.182***				
						(0.027)				
Trust in gov: Moderate							0.113***			
							(0.024)			
Trust in gov: High							0.095**			
							(0.031)			
Trust in media: Moderate								0.067*		
								(0.028)		
Trust in media: High								0.163***		
								(0.027)		
Need experts: Moderate									0.108***	
									(0.031)	
Need experts: High									0.179***	
									(0.031)	
Exposure: Covid										0.049
										(0.026)
Exposure: Disaster										0.063
										(0.038)
Exposure: Both										−0.026
										(0.033)
Constant	0.693***	0.665***	0.667***	0.630***	0.579***	0.607***	0.646***	0.611***	0.575***	0.619***
	(0.022)	(0.024)	(0.028)	(0.031)	(0.036)	(0.030)	(0.025)	(0.029)	(0.032)	(0.033)
N	2,860	2,860	2,860	2,860	2,214	2,812	2,639	2,639	2,638	2,642
R^2	0.004	0.006	0.010	0.024	0.026	0.034	0.016	0.024	0.024	0.028
Adjusted R^2	0.001	0.003	0.007	0.021	0.022	0.031	0.013	0.020	0.021	0.023
Residual Std. Error	0.464	0.463	0.462	0.459	0.460	0.456	0.462	0.461	0.461	0.460

*p < .05; **p < .01; ***p < .001

Table A.8: Support for spending more on pandemic relief

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age: 40-59	−0.047**	−0.047**	−0.048**	−0.033*	−0.010	−0.025	−0.040**	−0.044**	−0.030*	−0.033*
	(0.016)	(0.016)	(0.016)	(0.015)	(0.017)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Age: 60 or older	−0.063***	−0.064***	−0.066***	−0.056**	−0.007	−0.046**	−0.058**	−0.065***	−0.052**	−0.052**
	(0.019)	(0.019)	(0.018)	(0.018)	(0.019)	(0.016)	(0.018)	(0.018)	(0.017)	(0.018)
Race: Black	0.040	0.039	0.046*	−0.023	0.015	−0.028	0.021	0.036	0.030	−0.018
	(0.023)	(0.023)	(0.023)	(0.023)	(0.025)	(0.023)	(0.024)	(0.023)	(0.022)	(0.023)
Race: Asian	0.051*	0.052*	0.045	0.018	0.022	0.015	0.022	0.018	0.032	0.032
	(0.023)	(0.023)	(0.023)	(0.022)	(0.025)	(0.022)	(0.023)	(0.025)	(0.025)	(0.022)
Race: Multiple and Other	−0.030	−0.032	−0.030	−0.050*	−0.039	−0.049*	−0.039	−0.022	−0.034	−0.051*
	(0.025)	(0.025)	(0.025)	(0.023)	(0.027)	(0.022)	(0.024)	(0.024)	(0.022)	(0.024)
Gender: Female	−0.012	−0.013	−0.004	−0.013	−0.012	−0.006	−0.004	−0.003	−0.014	−0.014
	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.013)	(0.014)	(0.013)	(0.013)	(0.013)
Gender: Other	0.103*	0.103*	0.113*	0.063	0.019	0.051	0.127*	0.107*	0.075	0.061
	(0.045)	(0.046)	(0.047)	(0.049)	(0.046)	(0.043)	(0.050)	(0.051)	(0.046)	(0.046)
Income: 75-149k		−0.016								
		(0.016)								
Income: 150k or more		0.003								
		(0.024)								
Educ: Some college			−0.011							
			(0.017)							
Educ: Bachelor's or higher			0.059***							
			(0.018)							
Party: Independent				0.061**						0.058**
				(0.019)						(0.019)
Party: Democrat				0.216***						0.210***
				(0.017)						(0.017)
Ideology: Moderate					0.171***					
					(0.021)					
Ideology: Liberal					0.314***					
					(0.022)					
Voted for Other						0.197***				
						(0.038)				
Did Not Vote						0.104***				
						(0.019)				
Voted for Biden						0.271***				
						(0.016)				
Trust in gov: Moderate							0.131***			
							(0.014)			
Trust in gov: High							0.141***			
							(0.017)			
Trust in media: Moderate								0.108***		
								(0.018)		
Trust in media: High								0.198***		
								(0.017)		
Need experts: Moderate									0.119***	
									(0.020)	
Need experts: High									0.231***	
									(0.019)	

Exposure: Covid										0.059***
										(0.016)
Exposure: Disaster										0.085***
										(0.024)
Exposure: Both										0.094***
										(0.018)
Constant	0.684***	0.691***	0.665***	0.594***	0.496***	0.542***	0.627***	0.580***	0.542***	0.558***
	(0.014)	(0.015)	(0.018)	(0.019)	(0.023)	(0.018)	(0.016)	(0.019)	(0.021)	(0.020)
N	2,648	2,648	2,648	2,648	2,213	2,600	2,638	2,639	2,638	2,642
R^2	0.018	0.018	0.029	0.106	0.156	0.177	0.071	0.097	0.112	0.124
Adjusted R^2	0.015	0.015	0.026	0.103	0.153	0.174	0.068	0.094	0.109	0.120
Residual Std. Error	0.282	0.282	0.281	0.269	0.266	0.257	0.274	0.271	0.268	0.267

*p < .05; **p < .01; ***p < .001

Table A.9: Support for spending more on pandemic prevention

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age: 40-59	−0.047**	−0.046**	−0.046**	−0.034*	−0.007	−0.028	−0.040*	−0.045**	−0.032*	−0.035*
	(0.016)	(0.016)	(0.016)	(0.016)	(0.017)	(0.015)	(0.016)	(0.016)	(0.016)	(0.015)
Age: 60 or older	−0.104***	−0.108***	−0.102***	−0.098***	−0.048**	−0.083***	−0.100***	−0.106***	−0.094***	−0.096***
	(0.019)	(0.019)	(0.019)	(0.018)	(0.019)	(0.017)	(0.018)	(0.018)	(0.018)	(0.018)
Race: Black	0.149***	0.143***	0.150***	0.090***	0.126***	0.095***	0.130***	0.147***	0.140***	0.094***
	(0.022)	(0.022)	(0.022)	(0.022)	(0.024)	(0.022)	(0.022)	(0.022)	(0.021)	(0.022)
Race: Asian	0.002	0.014	0.006	−0.029	−0.027	−0.036	−0.026	−0.019	−0.015	−0.019
	(0.025)	(0.026)	(0.025)	(0.024)	(0.027)	(0.024)	(0.026)	(0.027)	(0.026)	(0.024)
Race: Multiple and Other	0.028	0.024	0.028	0.010	0.017	0.005	0.010	0.026	0.016	0.002
	(0.026)	(0.026)	(0.026)	(0.025)	(0.027)	(0.024)	(0.026)	(0.027)	(0.025)	(0.025)
Gender: Female	0.020	0.008	0.018	0.019	0.015	0.021	0.030*	0.026	0.019	0.017
	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.013)	(0.014)	(0.014)	(0.013)	(0.013)
Gender: Other	0.205***	0.189***	0.203***	0.167***	0.107**	0.161***	0.219***	0.197***	0.168***	0.157***
	(0.033)	(0.031)	(0.032)	(0.036)	(0.042)	(0.038)	(0.035)	(0.032)	(0.035)	(0.038)
Income: 75-149k		−0.057***								
		(0.016)								
Income: 150k or more		−0.080**								
		(0.025)								
Educ: Some college			−0.021							
			(0.017)							
Educ: Bachelor's or higher			−0.019							
			(0.018)							
Party: Independent				0.058**						0.056**
				(0.018)						(0.018)
Party: Democrat				0.206***						0.201***
				(0.017)						(0.016)
Ideology: Moderate					0.144***					
					(0.020)					
Ideology: Liberal					0.306***					
					(0.021)					
Voted for Other						0.167***				
						(0.047)				

Did Not Vote						0.139***				
						(0.019)				
Voted for Biden						0.241***				
						(0.017)				
Trust in gov: Moderate							0.114***			
							(0.015)			
Trust in gov: High							0.155***			
							(0.017)			
Trust in media: Moderate								0.070***		
								(0.018)		
Trust in media: High								0.128***		
								(0.018)		
Need experts: Moderate									0.100***	
									(0.020)	
Need experts: High									0.204***	
									(0.019)	
Exposure: Covid										0.056***
										(0.015)
Exposure: Disaster										0.019
										(0.024)
Exposure: Both										0.072***
										(0.019)
Constant	0.622***	0.660***	0.635***	0.537***	0.450***	0.486***	0.567***	0.555***	0.499***	0.512***
	(0.015)	(0.015)	(0.019)	(0.019)	(0.022)	(0.019)	(0.016)	(0.020)	(0.021)	(0.020)
N	2,648	2,648	2,648	2,648	2,213	2,600	2,638	2,639	2,638	2,642
R^2	0.056	0.068	0.057	0.133	0.183	0.173	0.104	0.087	0.127	0.143
Adjusted R^2	0.054	0.065	0.054	0.130	0.180	0.170	0.101	0.084	0.124	0.140
Residual Std. Error	0.282	0.280	0.282	0.270	0.264	0.263	0.274	0.278	0.271	0.269

*p < .05; **p < .01; ***p < .001

Table A.10: Support for prioritizing pandemic prevention over pandemic relief

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Age: 40-59	−0.016	−0.017	−0.016	−0.004	0.006	−0.001	−0.011	−0.014	−0.0003	−0.007
	(0.026)	(0.026)	(0.026)	(0.026)	(0.029)	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Age: 60 or older	−0.015	−0.012	−0.018	−0.013	0.010	−0.009	−0.010	−0.017	−0.002	−0.011
	(0.030)	(0.030)	(0.030)	(0.029)	(0.031)	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
Race: Black	0.033	0.038	0.042	−0.031	−0.013	−0.041	0.014	0.028	0.022	−0.027
	(0.034)	(0.034)	(0.034)	(0.035)	(0.039)	(0.035)	(0.035)	(0.034)	(0.034)	(0.035)
Race: Asian	−0.001	−0.012	−0.007	−0.032	−0.049	−0.033	−0.029	−0.043	−0.021	−0.019
	(0.054)	(0.054)	(0.053)	(0.052)	(0.058)	(0.052)	(0.053)	(0.053)	(0.053)	(0.052)
Race: Multiple and Other	0.007	0.011	0.008	−0.010	−0.028	−0.005	−0.005	0.012	−0.001	−0.009
	(0.038)	(0.038)	(0.038)	(0.037)	(0.041)	(0.037)	(0.037)	(0.036)	(0.036)	(0.037)
Gender: Female	−0.053*	−0.042	−0.043	−0.056*	−0.066**	−0.044*	−0.045*	−0.045*	−0.057*	−0.060**
	(0.023)	(0.023)	(0.023)	(0.022)	(0.024)	(0.022)	(0.023)	(0.022)	(0.022)	(0.022)
Gender: Other	0.022	0.038	0.035	−0.017	−0.033	−0.031	0.067	0.042	0.009	0.001
	(0.096)	(0.097)	(0.097)	(0.105)	(0.095)	(0.090)	(0.095)	(0.092)	(0.087)	(0.108)
Income: 75-149k		0.049								
		(0.025)								

Income: 150k or more		0.080								
		(0.041)								
Educ: Some college			−0.032							
			(0.027)							
Educ: Bachelor's or higher			0.068*							
			(0.028)							
Party: Independent				0.024						0.021
				(0.031)						(0.030)
Party: Democrat				0.213***						0.209***
				(0.029)						(0.028)
Ideology: Moderate					0.165***					
					(0.033)					
Ideology: Liberal					0.282***					
					(0.035)					
Voted for Other						0.181**				
						(0.060)				
Did Not Vote						0.053				
						(0.033)				
Voted for Biden						0.254***				
						(0.027)				
Trust in gov: Moderate							0.108***			
							(0.025)			
Trust in gov: High							0.155***			
							(0.029)			
Trust in media: Moderate								0.145***		
								(0.028)		
Trust in media: High								0.251***		
								(0.027)		
Need experts: Moderate									0.119***	
									(0.032)	
Need experts: High									0.242***	
									(0.030)	
Exposure: Covid										0.082**
										(0.026)
Exposure: Disaster										0.109**
										(0.037)
Exposure: Both										0.024
										(0.032)
Constant	0.701***	0.667***	0.684***	0.630***	0.549***	0.583***	0.647***	0.567***	0.555***	0.599***
	(0.023)	(0.025)	(0.028)	(0.031)	(0.036)	(0.030)	(0.025)	(0.029)	(0.032)	(0.033)
N	2,645	2,645	2,645	2,645	2,213	2,597	2,638	2,639	2,638	2,642
R^2	0.004	0.008	0.012	0.041	0.049	0.060	0.022	0.051	0.042	0.049
Adjusted R^2	0.002	0.005	0.008	0.038	0.045	0.057	0.019	0.048	0.039	0.045
Residual Std. Error	0.472	0.471	0.470	0.463	0.461	0.457	0.467	0.461	0.462	0.461

*p < .05; **p < .01; ***p < .001

Table A.11: Support for spending more on and for prioritizing disaster prevention, by wording condition

	More on prev. (binary)		More on prev. (five-point scale, 0-1)		Prioritize prev. (binary)	
	(1)	(2)	(3)	(4)	(5)	(6)

Condition: Health Disasters	0.025	0.018	−0.004	−0.008	0.076*	0.072*
	(0.031)	(0.031)	(0.015)	(0.015)	(0.031)	(0.030)
Age: 40-59		−0.089*		−0.045*		−0.108**
		(0.036)		(0.017)		(0.036)
Age: 60 or older		−0.123**		−0.057**		−0.097*
		(0.039)		(0.020)		(0.040)
Income: 75-149k		−0.024		−0.008		−0.024
		(0.038)		(0.018)		(0.037)
Income: 150k or more		0.063		0.038		0.112*
		(0.058)		(0.029)		(0.055)
Gender: Female		0.038		0.015		0.081**
		(0.031)		(0.015)		(0.030)
Gender: Other		0.185*		0.077		0.105
		(0.094)		(0.048)		(0.101)
Race: Black		0.111*		0.079***		0.110**
		(0.043)		(0.021)		(0.043)
Race: Asian		0.026		0.010		0.061
		(0.075)		(0.031)		(0.072)
Race: Multiple and Other		−0.011		0.016		−0.025
		(0.053)		(0.025)		(0.053)
Educ: Some college		0.123**		0.037*		0.078*
		(0.038)		(0.018)		(0.037)
Educ: Bachelor's or higher		0.177***		0.066**		0.141***
		(0.043)		(0.021)		(0.042)
Constant	0.609***	0.547***	0.690***	0.668***	0.594***	0.528***
	(0.023)	(0.044)	(0.010)	(0.022)	(0.023)	(0.044)
N	1,386	1,380	1,386	1,380	1,386	1,380
R^2	0.001	0.051	0.0001	0.046	0.006	0.057
Adjusted R^2	−0.0001	0.042	−0.001	0.037	0.005	0.049
Residual Std. Error	0.484	0.474	0.240	0.235	0.480	0.470

*p < .05; **p < .01; ***p < .001

Table A.12: Support for spending more on and for prioritizing disaster prevention, by survey year

	More on prev. (binary)		More on prev. (five-point scale, 0-1)		Prioritize prev. (binary)	
	(1)	(2)	(3)	(4)	(5)	(6)
Survey year: 2023	−0.066**	−0.068**	−0.030*	−0.033**	−0.054*	−0.056*
	(0.024)	(0.024)	(0.012)	(0.012)	(0.024)	(0.024)
Age: 40-59		−0.067**		−0.036**		−0.0005
		(0.022)		(0.011)		(0.022)
Age: 60 or older		−0.036		−0.034**		0.011
		(0.025)		(0.013)		(0.025)
Income: 75-149k		−0.020		−0.026*		0.015
		(0.024)		(0.012)		(0.024)
Income: 150k or more		0.007		0.0003		0.041
		(0.036)		(0.019)		(0.037)
Gender: Female		−0.009		0.001		−0.004
		(0.020)		(0.010)		(0.020)
Gender: Other		0.256***		0.141***		0.009

		(0.040)		(0.031)		(0.085)
Race: Black		0.065*		0.044**		0.059*
		(0.029)		(0.015)		(0.029)
Race: Asian		0.052		0.020		0.063
		(0.043)		(0.018)		(0.044)
Race: Multiple and Other		−0.091**		−0.041*		−0.031
		(0.033)		(0.019)		(0.033)
Educ: Some college		0.008		0.003		−0.009
		(0.024)		(0.012)		(0.024)
Educ: Bachelor's or higher		0.107***		0.050***		0.060*
		(0.027)		(0.014)		(0.027)
Constant	0.682***	0.686***	0.721***	0.732***	0.687***	0.654***
	(0.011)	(0.025)	(0.006)	(0.013)	(0.011)	(0.025)
N	3,602	3,577	3,602	3,577	3,602	3,577
R^2	0.003	0.027	0.003	0.027	0.002	0.012
Adjusted R^2	0.003	0.023	0.002	0.023	0.002	0.008
Residual Std. Error	0.470	0.465	0.240	0.237	0.468	0.466

*p < .05; **p < .01; ***p < .001

Table A.13: Support for spending more on disasters and on disaster relief, by wording condition

	More on disasters (binary)		More on disasters (five-point scale, 0-1)		More on relief (binary)		More on relief (five-point scale, 0-1)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Condition: Health Disasters	0.005	−0.005	−0.014	−0.019	−0.061	−0.068*	−0.036*	−0.040**
	(0.032)	(0.032)	(0.015)	(0.015)	(0.032)	(0.032)	(0.015)	(0.015)
Age: 40-59	0.015	0.011	−0.004	−0.006				
	(0.032)	(0.032)	(0.016)	(0.015)				
Age: 60 or older		−0.060*		−0.033*		−0.032		−0.017
		(0.030)		(0.015)		(0.037)		(0.017)
Income: 75-149k		−0.065		−0.031*		−0.042		−0.020
		(0.034)		(0.016)		(0.041)		(0.020)
Income: 150k or more		−0.069*		−0.038*		−0.061		−0.029
		(0.032)		(0.015)		(0.039)		(0.019)
Gender: Female		−0.022		0.005		−0.118		−0.044
		(0.051)		(0.024)		(0.066)		(0.035)
Gender: Other		0.003		0.004		−0.002		−0.002
		(0.026)		(0.013)		(0.032)		(0.015)
Race: Black		0.125		0.052		0.002		0.034
		(0.112)		(0.061)		(0.132)		(0.056)
Race: Asian		0.097*		0.063**		0.074		0.032
		(0.039)		(0.020)		(0.046)		(0.025)
Race: Multiple and Other		0.028		0.004		−0.0001		−0.023
		(0.068)		(0.029)		(0.087)		(0.032)
Educ: Some college		−0.011		−0.013		0.076		0.029
		(0.043)		(0.023)		(0.052)		(0.022)
Educ: Bachelor's or higher		0.028		0.011		0.076		0.034
		(0.032)		(0.015)		(0.039)		(0.019)
educBachelor's degree or higher		0.018		0.009		0.091*		0.043
		(0.036)		(0.018)		(0.044)		(0.022)
Constant	0.555***	0.592***	0.678***	0.696***	0.606***	0.598***	0.689***	0.688***

	(0.023)	(0.039)	(0.011)	(0.020)	(0.023)	(0.045)	(0.010)	(0.021)
N	2,104	2,097	2,104	2,097	1,386	1,380	1,386	1,380
R^2	0.0002	0.014	0.001	0.021	0.004	0.019	0.006	0.020
Adjusted R^2	−0.001	0.008	−0.0004	0.015	0.003	0.011	0.005	0.011
Residual Std. Error	0.496	0.494	0.238	0.236	0.493	0.491	0.234	0.233

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table A.14: Support for spending more on disasters and on disaster relief, by survey year

	More on disasters (binary)		More on disasters (five-point scale, 0-1)		More on relief (binary)		More on relief (five-point scale, 0-1)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Survey year: 2023	−0.050*	−0.057*	−0.025	−0.030*	−0.030	−0.035	−0.013	−0.017
	(0.025)	(0.025)	(0.013)	(0.012)	(0.025)	(0.025)	(0.012)	(0.012)
Age: 40-59		−0.065**		−0.037**		−0.076**		−0.039***
		(0.023)		(0.012)		(0.023)		(0.011)
Age: 60 or older		−0.072**		−0.046***		−0.079**		−0.047***
		(0.026)		(0.013)		(0.026)		(0.013)
Income: 75-149k		−0.051*		−0.047***		−0.071**		−0.042***
		(0.025)		(0.012)		(0.025)		(0.012)
Income: 150k or more		−0.056		−0.032		−0.136***		−0.069**
		(0.039)		(0.021)		(0.039)		(0.021)
Gender: Female		0.030		0.025*		0.002		0.011
		(0.020)		(0.010)		(0.020)		(0.010)
Gender: Other		0.310***		0.173***		0.266***		0.120***
		(0.048)		(0.030)		(0.057)		(0.029)
Race: Black		0.156***		0.091***		0.142***		0.082***
		(0.030)		(0.016)		(0.030)		(0.015)
Race: Asian		0.041		0.013		0.005		−0.008
		(0.046)		(0.019)		(0.047)		(0.019)
Race: Multiple and Other		−0.003		−0.00001		−0.023		−0.020
		(0.033)		(0.018)		(0.033)		(0.018)
Educ: Some college		0.035		0.023		0.033		0.011
		(0.024)		(0.012)		(0.024)		(0.012)
Educ: Bachelor's or higher		0.049		0.035*		0.029		0.023
		(0.028)		(0.015)		(0.028)		(0.014)
Constant	0.620***	0.628***	0.699***	0.704***	0.604***	0.659***	0.680***	0.707***
	(0.011)	(0.026)	(0.005)	(0.013)	(0.011)	(0.026)	(0.006)	(0.013)
N	3,645	3,619	3,645	3,619	3,601	3,576	3,601	3,576
R^2	0.002	0.024	0.002	0.039	0.001	0.028	0.0005	0.035
Adjusted R^2	0.001	0.021	0.001	0.036	0.0003	0.025	0.0002	0.032
Residual Std. Error	0.488	0.483	0.237	0.233	0.491	0.485	0.236	0.233

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table A.15: Difference in average persuasiveness, by reason type

	Persuasiveness of reasons
Reason type: Relief	−0.169***

	(0.007)
Constant	0.642***
	(0.006)
N	52,618
R^2	0.052
Adjusted R^2	0.052
Residual Std. Error	0.362

*p < .05; **p < .01; ***p < .001

Table A.16: Shift in support for prioritizing prevention and relief, by order condition

	Prioritize Prev.	Prioritize Relief
	(1)	(2)
Order: Prev. Second	−0.078***	
	(0.013)	
Order: Relief Second		−0.064***
		(0.015)
Constant	0.796***	0.613***
	(0.009)	(0.010)
N	2,711	2,719
R^2	0.019	0.010
Adjusted R^2	0.019	0.010
Residual Std. Error	0.277	0.318

*p < .05; **p < .01; ***p < .001

Table A.17: Likelihood of voting for candidate, by prior vote and spending position

	Likelihood of voting for candidate	
	(1)	(2)
Voted for in last election: Yes	0.041***	0.041***
	(0.008)	(0.008)
Increased spending: Yes	0.039***	0.129***
	(0.010)	(0.011)
Spending type: Prevention	−0.005	
	(0.006)	
Increased spending: Yes X Spending Type: Prevention	0.090***	
	(0.011)	
Spending type: Relief		0.005
		(0.006)
Increased spending: Yes X Spending Type: Relief		−0.090***
		(0.011)
Constant	0.424***	0.419***
	(0.008)	(0.008)
N	9,835	9,835
R^2	0.037	0.037
Adjusted R^2	0.037	0.037
Residual Std. Error	0.284	0.284

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table A.18: Likelihood of voting for first candidate, by prior vote and spending type

	Likelihood of voting for candidate
Voted for in last election: Yes	0.062***
	(0.014)
Type of spending increase: Prevention	0.092***
	(0.014)
Constant	0.447***
	(0.012)
N	2,459
R^2	0.036
Adjusted R^2	0.036
Residual Std. Error	0.287
F Statistic	46.435***

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table A.19: Support for main outcomes, by exposure type

	More on relief (five-point scale, 0-1)		More on prev. (five-point scale, 0-1)		Prioritize prev. (binary)	
	(1)	(2)	(3)	(4)	(5)	(6)
Age: 40-59	−0.033**	−0.030*	−0.020	−0.016	0.021	0.021
	(0.013)	(0.013)	(0.013)	(0.013)	(0.026)	(0.026)
Age: 60 or older	−0.040**	−0.037*	−0.023	−0.019	0.019	0.018
	(0.015)	(0.015)	(0.015)	(0.015)	(0.029)	(0.029)
Race: Black	0.051**	0.050**	0.001	0.0004	−0.022	−0.024
	(0.017)	(0.017)	(0.017)	(0.017)	(0.036)	(0.035)
Race: Asian	−0.023	−0.024	0.009	0.009	0.050	0.048
	(0.021)	(0.020)	(0.022)	(0.022)	(0.050)	(0.050)
Race: Multiple and Other	−0.027	−0.027	−0.039	−0.039	−0.050	−0.048
	(0.020)	(0.020)	(0.022)	(0.022)	(0.038)	(0.038)
Gender: Female	0.024*	0.026*	−0.002	−0.001	−0.032	−0.032
	(0.011)	(0.011)	(0.011)	(0.011)	(0.022)	(0.022)
Gender: Other	0.113**	0.110**	0.089*	0.084*	−0.073	−0.071
	(0.036)	(0.035)	(0.043)	(0.041)	(0.110)	(0.111)
Party: Independent	0.026	0.025	0.035*	0.032*	0.030	0.031
	(0.015)	(0.015)	(0.015)	(0.015)	(0.030)	(0.030)
Party: Democrat	0.123***	0.124***	0.147***	0.148***	0.161***	0.162***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.029)	(0.029)
Exposure: Covid	0.037**		0.039***		0.010	
	(0.011)		(0.011)		(0.022)	
Exposure: Disaster		0.046***		0.061***		−0.014
		(0.013)		(0.012)		(0.026)
Constant	0.623***	0.624***	0.661***	0.660***	0.627***	0.634***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.032)	(0.032)

N	2,641	2,641	2,642	2,642	2,642	2,642
R^2	0.078	0.080	0.079	0.085	0.024	0.024
Adjusted R^2	0.075	0.076	0.076	0.082	0.020	0.020
Residual Std. Error	0.228	0.228	0.231	0.230	0.461	0.461

$^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table A.20: Effect of mentioning concept on preferences, by concept mentioned

	More on relief	More on prevention
	(1)	(2)
Mention only relief	0.039***	0.045***
	(0.011)	(0.011)
Mention only prevention	0.049***	0.116***
	(0.011)	(0.011)
Mention both	0.054***	0.123***
	(0.014)	(0.013)
Constant	0.676***	0.684***
	(0.007)	(0.007)
Observations	2,883	2,884
R^2	0.010	0.047
Adjusted R^2	0.009	0.046
Residual Std. Error	0.228	0.228

Note: $^{*}p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

Table A.21: Effect of mentioning concept on preferences, by concept mentioned (with controls)

	More on relief	More on prevention	Prioritize prevention	
	(1)	(2)	(3)	(4)
Age: 40-59	−0.020*	−0.009	0.006	0.012
	(0.010)	(0.010)	(0.020)	(0.020)
Age: 60 or older	−0.023*	−0.007	0.014	0.016
	(0.011)	(0.011)	(0.022)	(0.022)
Gender: Female	0.015	0.005	−0.004	0.002
	(0.008)	(0.008)	(0.017)	(0.017)
Gender: Other	0.084*	0.046	−0.051	−0.062
	(0.033)	(0.038)	(0.086)	(0.085)
Race: Black	0.035**	−0.005	−0.020	−0.013
	(0.013)	(0.013)	(0.027)	(0.027)
Race: Asian	−0.029	−0.005	0.084*	0.077*
	(0.018)	(0.017)	(0.036)	(0.036)
Race: Multiple and Other	−0.003	−0.020	−0.064	−0.058
	(0.019)	(0.019)	(0.038)	(0.037)
Party: Independent	0.035**	0.049***	0.046	0.037
	(0.012)	(0.012)	(0.025)	(0.025)
Party: Democrat	0.113***	0.142***	0.176***	0.163***
	(0.011)	(0.011)	(0.024)	(0.024)

Mention relief	0.025**		0.002	
	(0.009)		(0.018)	
Mention prevention		0.090***		0.100***
		(0.009)		(0.018)
Constant	0.636***	0.632***	0.601***	0.572***
	(0.012)	(0.013)	(0.026)	(0.026)
Observations	2,883	2,884	2,884	2,884
R^2	0.058	0.103	0.028	0.038
Adjusted R^2	0.055	0.100	0.025	0.035
Residual Std. Error	0.223	0.222	0.457	0.455

Note: *p<0.05; **p<0.01; ***p<0.001

Table A.22: Effect of mentioning concept on preferences, by concept mentioned (logistic regression)

	More on relief		More on prevention		Prioritize prevention			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age: 40-59	−0.241*		−0.147		0.026		0.057	
	(0.094)		(0.100)		(0.096)		(0.097)	
Age: 60 or older	−0.195		0.022		0.066		0.079	
	(0.104)		(0.112)		(0.108)		(0.108)	
Gender: Female	0.032		0.001		−0.020		0.009	
	(0.080)		(0.086)		(0.083)		(0.083)	
Gender: Other	0.990*		0.689		−0.238		−0.299	
	(0.478)		(0.502)		(0.384)		(0.386)	
Race: Black	0.272		−0.149		−0.105		−0.074	
	(0.141)		(0.145)		(0.137)		(0.139)	
Race: Asian	−0.247		0.069		0.455*		0.425*	
	(0.185)		(0.211)		(0.217)		(0.216)	
Race: Multiple and Other	0.070		−0.115		−0.289		−0.268	
	(0.169)		(0.170)		(0.166)		(0.165)	
Party: Independent	0.239*		0.292**		0.197		0.157	
	(0.104)		(0.108)		(0.106)		(0.107)	
Party: Democrat	0.880***		1.221***		0.842***		0.791***	
	(0.108)		(0.118)		(0.112)		(0.114)	
Mention relief	0.204*	0.211*			0.007	0.026		
	(0.085)	(0.083)			(0.087)	(0.085)		
Mention prevention			0.850***	0.920***			0.506***	0.556***
			(0.101)	(0.098)			(0.094)	(0.092)
Constant	0.187	0.515***	0.114	0.577***	0.405***	0.788***	0.264*	0.636***
	(0.115)	(0.048)	(0.120)	(0.047)	(0.118)	(0.050)	(0.118)	(0.047)
Observations	2,883	2,883	2,884	2,884	2,884	2,884	2,884	2,884
Log Likelihood	−1,816.878	−1,875.932	−1,649.519	−1,723.949	−1,745.246	−1,787.005	−1,730.199	−1,767.883
Akaike Inf. Crit.	3,655.757	3,755.864	3,321.038	3,451.899	3,512.493	3,578.010	3,482.398	3,539.766

Note: *p<0.05; **p<0.01; ***p<0.001

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