

Health Risks and Voting: Emphasizing Safety Measures Taken to Prevent COVID-19 Does Not Increase Willingness to Vote in Person

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Abstract:

The COVID-19 pandemic made salient to potential voters the risks posed by an infectious disease when congregating at a polling place. To what degree did such risks, as with other health issues and changes to the cost of voting more generally, affect the willingness to vote in person? Could highlighting polling place safety measures reduce the association between COVID fears and unwillingness to vote in person? Using both a representative survey of Connecticut voters and a survey experiment of Americans, we examine whether concerns about one's health diminish one's willingness to vote in person. We find correlational evidence that people who are more worried about COVID-19 are less likely to report that they will vote in person, even when considering the risk mitigation efforts of election officials. We then present causal evidence that mentioning the safety measures being taken by election officials does little to offset the negative effect of priming COVID-19 risk on willingness to vote in person. These results contribute to a growing literature that assesses how perceptions of health risks affect in person voting.

Health Risks and Voting: Emphasizing Safety Measures Taken to Prevent COVID-19 Does Not Increase Willingness to Vote in Person

The spread of COVID-19 throughout the United States made the conduct of the 2020 presidential election a public health issue. In a large scale national survey, worry about COVID-19 was reported as the most common reason for why people chose to vote by mail instead of in person, suggesting that beliefs about COVID-19 may have kept people away from polling places and potentially explaining why half of the electorate chose to cast their ballots by mail (Stewart 2021). Although there are robust literatures on how the costs of voting affect turnout (e.g., Sigelman and Berry 1982) and who prefers mail to in-person voting (e.g., Plescia, Sevi, and Blais 2021), as well as work on how health affects voter turnout (e.g. Burden et al. 2017; Gollust and Rahn 2015; Mattila et al. 2013; Ojeda and Pacheco 2019; Pacheco and Ojeda 2020), less is known about whether potential exposure to an infectious disease affects people's willingness to vote in person and whether election officials communicating their plans for mitigating the risks posed by an infectious disease is sufficient to assuage voters' concerns about going to the polls and their willingness to vote in person.

We conducted a representative survey of registered voters in Connecticut to assess the relationship between reported concerns about COVID-19 and preference for voting in person. As part of Study 1, we gathered information about support for potential COVID-19 risk mitigation efforts that could be taken to reduce the risk of in-person voting. This survey provides correlational evidence about the relationship between fear of COVID-19 and preference for mode of voting, preferred risk mitigation efforts, and stated willingness to vote in person if those steps were taken. We find that voters who report being more concerned about COVID-19 are less willing to vote in person, even if risk mitigation measures are taken.

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This observational data motivated Study 2, a survey experiment fielded on a national sample in the days leading up to the November 2020 election. This allows us to assess the causal relationship between outreach communicating COVID-19 risk reduction efforts and stated willingness to vote in person among a sample that had not already voted at the time the survey was conducted and may not have been able to substitute to another form of voting. The specific risk mitigation efforts we described are drawn from items ranked as important at high rates in Study 1. This is therefore an informative test of the effect of outreach about risk mitigation efforts. Despite high levels of stated support for COVID-19 risk reduction efforts in our first survey, we find that communications about risk reduction do not appear to increase willingness to vote in person, while merely mentioning the risks associated with COVID-19 may depress in person voting.

Overall, these results show that concerns about contracting an infectious disease decrease voters' willingness to vote in person and that emphasizing safety measures may not be sufficient to get voters to the polls during pandemics. We discuss the implications of our finding for theoretical models of participation and efforts to address public health concerns that may affect how and if individuals vote.

Theoretical Motivation and Prior Literature

There is a vast observational and experimental literature documenting the relationship between the costs and benefits of voting and whether and how individuals turn out to vote. A core finding of this empirical work is that factors that make voting in general, or a specific method of voting in particular, more costly reduce turnout or the use of that method. For example, polling places that are harder to locate (Brady and McNulty 2011) or rules that make mail ballots harder to obtain (Yoder et al. 2021) reduce overall turnout and mail voting

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respectively. In some cases, interventions that reduce the costs of voting, for example by providing information about how to convert to mail balloting (Monroe and Sylvester 2011), can increase both overall participation and the use of specific means of voting.

A related literature considers the relationship between beliefs about the costs of voting and participation. Perceptions of such costs can of course comport closely with objective measures of them, such as the time needed to travel to a polling place, but may also vary across individuals in psychologically meaningful ways despite a common reality. For example, (Gerber et al. 2013a) documents that individuals who have concerns about ballot secrecy, including the possibility they might be harassed or intimidated at the polls, report being less likely to vote. Gerber et al. (2013b) shows that it appears these beliefs can be altered by providing voters with information. In a field experimental test, individuals provided with assurances about ballot secrecy were more likely to vote in a population most likely to harbor beliefs that their ballot would not be kept secret. Of course, the correlation between reported beliefs and turnout may be misleading or immutable. For example, reported beliefs and being less likely to vote may be caused by a common factor (e.g., low political efficacy), or beliefs may be so firmly held that they resist efforts to change them. Thus, an important empirical question in any domain is whether providing information addressing stated beliefs about the high costs of voting can reduce perceptions of those costs and increase voting in general or using a particular means to cast a ballot.

Turning to issues of health, poor individual-level health (cognitive functioning, overall health, and physical health) is associated with being less likely to turn out and vote (Burden et al. 2017). But, of course, the COVID-19 pandemic was not simply an issue of whether a given person was healthy or not, but rather whether a person would become sick with COVID-19 as a

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consequence of voting, particularly if they voted in person at a polling place. Accordingly, several studies have shown that many individuals were concerned about the risk of in-person voting in 2020 and therefore preferred to have the option to vote by mail (Kousser et al. 2021). This preference was more common among those who were more concerned about COVID-19, and there were salient partisan differences in these preferences; Democrats were both more concerned about COVID-19 risks and more interested in having the option to vote by mail (Lockhart et al. 2020). Kortum et al. 2020 surveyed registered Wisconsin citizens and found Democrats were more likely to desire mail voting, while Republicans favored traditional polling place voting with social distancing. At the same time, there also appeared to be widespread support for polling place safety measures like social distancing, mask wearing, and sanitization (Douglas and Zilis 2021).

Coll (2022a) found that among those who voted in person in 2020, polling place safety measures increased perceptions of safety, although it is not clear if those who did not vote in person were aware these measures were in place or would have been made to feel safer by them. Additionally, Coll (2022b) finds that polling place safety measures increased the amount of time people took to vote, suggesting an important potential downside to these measures if the possibility of longer waits decreased turnout.

Showing the potential downside of emphasizing COVID-19 risks, Kousser et al. (2021) reports results from an April 2020 survey experiment that finds providing factual information about the expected path of the pandemic (a spring or fall peak condition) reduced feelings about the safety of waiting in line and increased interest in voting by mail. However, the manipulation of pandemic timing had no effect on safety perceptions if respondents were instead asked about a polling place that was “reconfigured to adhere to social distancing protocol[s]... and to take

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other measures to protect the public's health." This finding suggests highlighting COVID-19 reduces the interest in person voting, but that such fears could be remedied. Similarly, a national survey experiment conducted with Americans in April 2020 found that mentioning potential COVID-19 exposure that may have occurred during the Wisconsin primary election caused people to be less willing to vote in person in the upcoming November presidential election, an effect that was only partially offset by an increase in intended mail voting (Safarpour and Hanmer 2022). Notably, both of these studies took place relatively early in the pandemic, raising the question of how views changed as the pandemic evolved and as partisan differences in the perceived risk of COVID-19 and the appropriateness of mail voting became starker.

Outside of the US context, Merkley et al. (2022) found in a series of survey experiments conducted in the fall of 2020 that Canadians reported lower turnout intentions after being primed with information about COVID-19, and that this reduction in the intention to vote in person was only partially offset by providing people with information about the measures that election officials would be taking to mitigate COVID-19 risks. It is uncertain whether similar patterns would arise in the United States.

Overall, it remains important to understand whether COVID-19 fears that might dissuade participation could be addressed, both because those fears differed by partisanship and because the most salient alternative to in-person voting, mail voting, is viewed more skeptically by Republicans as well as by certain racial and demographic groups (Plescia, Sevi, and Blais

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2021).¹ However, additional evidence is needed to develop a more comprehensive understanding of how potential health risks affect voters' willingness to vote in person.

Our inquiry was therefore focused on three questions. First, we seek to assess the relationship between stated COVID-19 fears and willingness to vote in person, as well as whether fears about COVID-19 would prompt a substitution to mail voting. This provides a correlational test of the argument that fears about COVID-19 are akin to other costs of voting in that they may decrease participation overall and/or cause a shift to an alternative means of participation. We therefore expect that greater fears about COVID-19 will be associated with less willingness to vote in person.

Second, we seek to measure stated public support for a variety of different risk mitigation efforts that could be taken to reduce the risk of getting COVID-19 from voting. This both provides a menu of potential actions government officials could take and also provides us with an opportunity to directly elicit whether individuals, particularly those most concerned about COVID-19, report being willing to vote in person if such measures are taken. This is therefore a preliminary test of whether perceptions of the potential health risks (costs) of voting can be remedied by government action. Past work does not provide clear expectations about whether describing steps to address health risks will increase willingness to vote in person.

Finally, we seek to understand the net effect on in person voting of directly communicating information about COVID-19 risk reduction efforts. Given that past work finds priming COVID-19 risks appears to decrease willingness to vote in person, while discussing

¹ Indeed, many voters who receive mail ballots nonetheless choose to return them in person (Menger and Stein 2020).

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safety efforts may counteract some or all of those perceived risks, we seek to understand the net effect of communication about COVID-19 risk reduction efforts on in-person voting. In light of extant research, it remains uncertain whether merely priming COVID-19 concerns offsets the potential in-person turnout effects of providing information about how in person voting is being made safer (e.g., less costly). Additionally, it remains unclear whether such communication changes how people vote or overall participation.

Study 1

In the lead up to the 2020 election, we contracted the survey firm YouGov to conduct a representative survey of registered Connecticut voters ($N = 1,215$).² Respondents were asked about their past political participation, their desire to vote in the 2020 presidential election, and concerns that they had about COVID-19 and voting, both in person and by mail. We also asked respondents about which steps they would like to see taken to make in-person voting safer. This survey was fielded between August 28, 2020 and September 11, 2020 (see the Appendix for demographic information, question wording, and coding). YouGov provided sampling weights to allow us to match the target population (Connecticut Registered Voters) and because this is

² Restricting our attention to registered voters was done for reasons of cost and efficiency. While Connecticut has same day registration, relatively few individuals register on Election Day and those who registered on Election Day cannot vote absentee (by mail). YouGov constructed a target frame derived from the 2016 American Community Survey and restricted to registered Connecticut residents. They then sampled from their existing panel and new recruits matching stratification by age, race, gender, education. Weights match the completed interviews to the target frame.

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descriptive analysis, all analysis is weighted to this target frame using inverse probability weights.

We chose Connecticut because, at the time, it was one of the sixteen states that did not allow for universal (no-excuse) absentee voting.³ For the 2020 election, however, the governor issued an executive order that expanded the reasons someone could vote by mail on grounds of the public health emergency created by COVID-19, providing a unique setting for understanding how a population with a voting history focused heavily on in-person voting would react to potential polling place health risks. In this sample, approximately 95% of respondents who voted in the 2016 and 2018 elections reported that they did so in-person.⁴ Therefore, Connecticut provides a useful setting for understanding how citizens who do not regularly vote by mail viewed the option during the COVID-19 pandemic.

Results

Descriptive Results

Of surveyed Connecticut voters, 63% preferred to cast their ballot at a polling place in the 2020 presidential election compared to 30% who preferred to cast their ballot by mail with 7% not sure about their preferred method of voting (all reported percentages are weighted to the target population). Partisans were, however, divided about their preferred mode of voting. Still, a

³ <https://www.ncsl.org/research/elections-and-campaigns/vopp-table-1-states-with-no-excuse-absentee-voting.aspx>.

⁴ This sample of registered voters participated in previous elections at a high level with 87% of respondents reporting having voted in the 2016 presidential election and 82% reporting that they voted in the 2018 midterm elections.

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majority of both Democrats (51%) and Republicans (81%) preferred to vote in person, as has been observed in past work (Lockhart et al. 2020).⁵

Voters recognized the comparatively higher risk of contracting COVID-19 from in-person voting compared to mail voting. Overall, about 40% of voters were very or somewhat worried about contracting COVID-19 if they voted at a polling place compared to approximately 17% if they voted by mail. Democrats were more concerned at this level about voting in person than Republicans, by about 2 to 1. (Throughout we include partisan “leaners” in the coding of partisan subgroups because recent work finds leaners are often more partisan in their views than weak partisans (e.g., Pew Research Center 2019, Theodoridis 2017). Results excluding leaners for subsequent analysis are shown in the appendix. Focusing on risk perceptions, excluding leaners reduces the ratio of concern at this level for Democrats compared to Republicans to about 1.5 to 1.)

Beyond general worries about COVID-19 at polling places, it is important to understand specifically what voters were fearful about because unaddressed fears about in person voting, coupled with doubts about mail voting, could cause someone to skip voting altogether. Figure 1, Panel A, displays overall and by party the proportion of respondents who were “Very” or “Somewhat” worried about specific features of in person voting. The figure shows that more than 45% of respondents were concerned about waiting in line near other voters, more than 40% were worried about being near others when filling out their ballot, and more than 35% were

⁵ Notably, 43% or more of all voters and partisan subgroups believed that their vote was less likely to be counted if it was cast by mail compared to cast in person, suggesting one factor unrelated to COVID-19 that might dissuade a move to mail voting.

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worried about using shared equipment, being near poll workers, and touching door handles. Except in the case of travel to the polls, where overall concern was low, Democrats were more worried than Republicans about each activity, but the relative ordering of concerns was largely the same across partisan subgroups. Figure A1 in the appendix shows that excluding leaners modestly reduces these partisan differences.

[Figure 1 about here]

We also elicited voters' assessments of the importance of specific remedies that could reduce the risk of contracting COVID-19 when voting in person. We plot the proportion of respondents who thought each remedy was "very" important in Panel B of Figure 1, again overall and by respondent party. 70% of respondents believe it is very important that poll workers were masked and symptom free, and about 2/3 of respondents believed personal protective equipment should be made available to voters, voting booths should be socially distanced, and voters should wait in line in boxes at least 6 feet apart. Democrats wanted these measures more than Republicans, but the ordering of importance was again largely the same across parties and once again partisan differences are modestly smaller when excluding leaners. Notably, the only item that received less than majority support was being sent a safety plan, despite the fact that there was widespread support for the items likely to be communicated in such a plan.

Regression Results

Were voters' worries about in-person voting sufficient to reduce their willingness to vote in person, particularly among a sample of voters who had limited experience with voting by mail? We explore this possibility using observational analysis of survey data in Table 1, where we report the results of weighted OLS regression models testing whether worries about COVID-

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19, operationalized as voters' generic worries about contracting COVID-19 at a polling place on Election Day, are correlated with three measures of willingness to vote in person. (We use OLS regression because of the ease of interpretation, but report (ordered) Logit results in Appendix Table A2; results are substantively similar.) This baseline model also controls for other pre-treatment covariates to address concerns that differences associated with views about COVID-19 and willingness to vote in person instead originate in other factors (age, gender, race [indicators for Black or Hispanic], education [4 category indicators], and income [6 category indicators]) correlated with both.

Our key independent variable is measure of concern about COVID-19 exposure, which is coded from responses to the item "For each of the options listed below for casting a ballot in November, how worried are you about contracting COVID-19 by voting?" where the option specified was "In person at a polling place on Election Day." Response options were scaled linearly to range from 0 to 1: "Not at all worried" (coded 0), "A little bit worried" (coded .33), "Somewhat worried" (coded .67), and "Very worried" (coded 1).⁶ The measure has a mean of .40 and a standard deviation of .36.

The first outcome variable was each registrant's reported preference for voting in person. This was coded from responses to the item "If you did vote in the November election, how would you prefer to vote?" with listed response options of "In person at a polling place on Election Day," "By mail/absentee ballot," and "Not sure." We coded the first response as 1 and the others as 0 to create a binary measure which has a mean of .63. This is therefore not a

⁶ Unscaled responses (entering each response option as an indicator) produces substantively similar interpretations. Results available upon request.

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measure of turnout intentions, but instead of mode of voting, and we rely on the assumption that stated preferences are accurate. Per the Column (1) specification shown in Table 1, being very worried about contracting COVID-19, as opposed to not worried at all, was associated with 62 point decrease ($p < .001$) in preference for voting in person. One concern is that partisanship may have affected both reported concerns about COVID-19 and preferred mode of voting, so in the Column (2) specification we also control for partisanship with separate indicators for each of the 7 point partisanship scale levels (excluded category is pure independents) and find that the effect of COVID-19 concerns was only slightly smaller, (-56 points, $p < .001$), meaning that the relationship was not driven solely by average differences across party in fear and preferred mode of voting.

The pattern of results is similar when the outcome is how voters believed that they would end up voting in the 2020 election (Coded from responses to the item “There is a lot of uncertainty in the world right now and we are often unable to do things that we would like to for reasons beyond our control. In thinking about voting this November, how do you expect that you will ultimately cast your vote?” with listed response options of “In person at a polling place on Election Day,” coded 1, “By mail/absentee ballot,” coded 0, and “I probably won’t end up voting,” coded 0. The mean of this measure is .68.), with an 55 point decrease ($p < .001$) without controlling for partisanship (column 3) and a 48 point decrease ($p < .001$) when doing so (column 4). The advantage of this measure is that allows respondents to reflect on how they would end up voting despite their previously stated preferred mode of voting.

The earlier survey data showed that there were some measures that election officials could take that voters reported were important for alleviating their COVID-19 concerns associated with voting in person. But would taking these steps eliminate the association between

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general fear of COVID-19 and willingness to vote in person? Our final outcome measure is the reported likelihood of voting in person in November (on a five-point linear scale ranging from “very unlikely” (0) to “very likely” (1)) in response to an item that asked “Suppose all of the measures listed before that you thought were somewhat or very important were followed to prevent the spread of COVID-19 at the polling place. How likely would you be to vote in person at a polling place?” (The mean of this measure is .79.) Here, we assume that people can forecast their behavior under a counterfactual state of the world. Even when stipulating that the concrete steps to address COVID-19 risks would be taken, we still find that fear of COVID-19 is associated with decreased willingness to vote in person (note the scale here is different than in columns 1-4), so magnitudes are not directly comparable across models). Specifically, being very worried about contracting COVID-19 when voting in person as compared to not worried at all is associated with an 33 scale point decrease ($p < .001$) in the likelihood of voting in person, an effect that was nearly identical in magnitude when controlling for partisanship (column 6). This result shows that despite both a desire for election officials to take steps to address public health risks and COVID-19 worries being associated with a reported unwillingness to vote in person, asking people to assume those risks were addressed does not entirely remove the correlation between COVID-19 fears and reported unwillingness to vote in person. (Because the dependent variables are different in columns 1 and 2 from 5 and 6 we urge caution in interpreting the smaller effects in the latter as indicating a weaker relationship.)

Overall, Study 1 provides correlational evidence about the relationship between COVID-19 fears and stated willingness to vote in person, as well as descriptive evidence about what steps voters believe would address their concerns about in person voting. The correlations we find are consistent with existing survey evidence that fear of COVID-19 is associated with a reduced

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desire for in-person voting. Those who are most concerned about COVID-19 report being least likely to vote at the polls, but this correlation is not eliminated when respondents were told to assume their preferred risk mitigation steps had been taken. Together, this raises the question of whether directly communicating information about COVID-19 risk reduction efforts would cause people who were previously concerned about COVID-19 to nonetheless be willing to vote in person. In Study 2, we bring to bear causally informative evidence on this question.

Study 2

Study 1 provides initial evidence that even concrete COVID-19 risk reduction steps may be insufficient to overcome voters' worries about the pervasive threat of contracting COVID-19 when voting on Election Day. That analysis is correlational. To gain causal leverage, we conducted a survey experiment using a sample provided by the survey vendor Lucid, which has been shown to produce high quality convenience samples of respondents for experimental research (Coppock and McClellan 2019; see also Peyton, Huber, and Coppock 2022). The survey was fielded just before Election Day from October 29, 2020 to November 2, 2020. Prior to participation, respondents read a short article with content unrelated to COVID-19 and those who did not answer a comprehension question exited the study prior to random assignment (see appendix for details). The 3,402 remaining respondents were then asked whether they had already voted in the election and whether they were registered to vote. Those who had already voted ($N=1,744$) exited the study while those who were not registered ($N=382$) proceeded to the study but were excluded from the analysis because, given the timing of the survey, they were ineligible to register in many states. The final analysis dataset is composed of the remaining 1,276 registered respondents who had not already voted, of whom 1,263 responded to at least

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one outcome question. Importantly, the timing of the survey meant that most people who had not already voted likely did not have the option to vote by mail unless they already had a mail ballot.

Sample demographics are shown in Appendix Table A3. While this is a non-probability sample, it is roughly balanced on partisanship (39% Democratic and 47% Republican) and broadly reflects the general population. The mean age is 44, the sample is 48% female, 13% African American, has a median income (among those reporting) of \$50,000-54,000, and a median education of an Associate's degree. Because we focus exclusively on experimental estimates, we do not weight our analysis (See Franco et al. 2017) and instead present sample average treatment effects with covariate adjustment to improve precision as our primary analysis.⁷

Respondents were randomly assigned to one of five condition at equal rates.⁸ Full treatment text is shown in Table 2 and was comprised of 1) an untreated control, 2) a COVID-19 *risk* condition that emphasized how COVID-19 is spread in indoor spaces, 3) a COVID-19 *voting safety measures* condition that stated “Due to the risks created by COVID-19” election officials had been working to “ensure that voting in-person at the polls is going to be as low-risk as possible,” followed by lists of several specific safety measures that public health and election

⁷ Analysis without covariate adjustment yields similar results and is available upon request.

⁸ We conducted a randomization test that confirmed demographics do not predict treatment assignment, suggesting successful randomization. In particular, we cannot reject the null that a multinomial logit predicting treatment assignment with survey demographics (age, gender, income, education, and indicators for each of 7 partisanship categories) performs no better than a constant only model (Likelihood ratio Chi-squared statistic of 46.1, $p=.38$).

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officials were taking to ensure safe in person voting, 4) COVID-19 *risk + safety measures*, a combination of the previous two treatment, and 5) a *civil unrest* condition that highlighted the recent conflicts between protestors and counter-protestors. The civil unrest treatment was included to prime risk arising from a source unrelated to COVID-19 to assess whether only the risks associated with COVID-19 affected willingness to vote in person or if it is risk more generally. These treatments exposed people to information that was already receiving media attention, which we believed was important because we did not want to introduce novel content that might depress interest in voting.

After respondents read the treatment, they were asked “How likely is it that you vote in person in the upcoming November election?” on a five-point scale ranging from “extremely unlikely” to “extremely likely” and “How worried are you about voting in person” on a four-point scale ranging from “not at all worried” to “very worried”.⁹ From the scale outcome of likelihood of voting in person, we created a binary outcome in which respondents who were “extremely likely” or “somewhat” likely were coded 1 and all other responses were coded as 0. Thus, we had three outcomes measures in the analysis below: 1) likelihood scale of voting in person, 2) binary likelihood of voting in person, and 3) scale of worries about voting in person. Scale outcomes were coded to range from 0 to 1 for ease of interpretation. To reiterate from above, because this survey likely took place too late for these individuals to substitute into a form of voting apart from in-person on Election Day, we believe it is appropriate to interpret the effects as relevant for understanding whether these treatments affected both the willingness to

⁹ Because of a programming error when the survey was originally fielded, the worry item was not asked to the first 222 respondents.

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vote in person and the chances of voting by any means, although we cannot rule out the possibility that some individuals who had a mail ballot in hand chose to return it rather than going to a polling place on Election Day.

Results

Figure 2 Panel A present covariate-adjusted treatment effects for each outcome. These were estimated using ordinary least squares (OLS) regression with robust Huber-White standard errors for the full sample after controlling for age, gender (indicator for female), race (indicators for Black and Hispanic), income (scale, plus indicator for missing/refusal), indicators for 8 educational levels, and indicators for each of the 7 point partisanship categories. (Complete regression results appear in appendix Table A4. Appendix Table A5 displays Logit results.) Individually, none of the treatments produced a statistically significant effect on people's willingness to vote in person (left plot for scale outcome and center plot for binary outcome), although those that mentioned any risks (risk, risk + safety measures, and civil unrest) were negatively signed. Notably, respondents in the control condition were, on average, "somewhat likely" to vote in person with a scale mean of 0.82 (S.D. = 0.31).

[Figure 2 about here]

Our initial analysis treats each treatment separately, but one treatment is compound, including both information about COVID risk and safety measures. If we instead define treatment status for the COVID-related treatments by indicators for whether a treatment mentioned COVID-19 risk (risk and risk + safety measures treatments) or safety measures (safety measures and risk + safety measures treatments), we estimate that mentioning COVID-19 risk decreased intention to vote in person by 0.036 units ($p = .07$) for the likelihood scale and 0.046 ($p = .07$) for the binary measure. These results are shown in Figure 1 Panel B. By contrast,

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mentioning safety measures has a coefficient of $-.01$ ($p=.67$) and $.00$ ($p=.98$) for each outcome respectively. Put differently, merely mentioning COVID-19 risks may depress in person voting, while consistent with the survey analysis above, mentioning safety measures appears to do little to increase in-person voting.

Turning to concerns about voting in person, respondents were more worried about voting in person (rightmost plot of panel A) in the COVID-19 risks and COVID-19 risks + safety measures treatments by $.067$ points ($p<.05$) and 0.085 points ($p < .05$), respectively, compared to the control condition. This latter corresponds to a 28% increase in worry relative to the mean in the control condition ($.085/.302 = .272$). Notably, the safety measures treatment did not meaningfully alter worries about voting in person. If we again decompose the COVID-19 related treatments into their two component parts, the rightmost plot of panel B shows that we estimate that discussing COVID-19 risks increased worry by 0.065 units ($p < .05$) while mentioning safety measures had a statistically insignificant 0.02 effect on worry. Once again, it appears that mentioning COVID-19 risks increases fear while communication about steps to address those risks does not remedy these concerns. Overall, in the days immediately before Election Day, registered voters who had not already voted were more worried about voting in person and may have been less likely to vote when they received information about the risks of COVID-19, while providing information about the steps that were being taken to mitigate those risks did not on average increase their intention to vote or make them feel safer.

Finally, we examined treatment heterogeneity by respondent partisanship for Democrats and Republicans, with results presented in Figure 3 (the same specification is used as in Panel A of Figure 2, except for partitioning by partisanship instead of controlling for it. See appendix Table A6 for complete model results). For both groups, it appears there are modest statistically

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insignificant negative effects of the civil unrest treatment for likelihood of voting in person. For Republicans, none of the other treatment effects are large and all are far from statistically significant. Among Democrats, however, they were 0.09 scale points ($p = .06$) less likely to vote in person in the COVID-19 risks + safety measures condition relative to the control condition (top, left panel) and they were significantly more worried about voting in person when the risks of COVID-19 were emphasized either without mentioning the safety measures (0.15, $p < .05$; top, right panel) or when doing so (0.11, $p < .05$). As before, if we redefine the COVID-relevant treatments into their component parts (See Appendix table A6), no treatments are substantively important or statistically significant for Republicans while for Democrats we estimate negative effects of mentioning COVID-19 risks on likelihood of voting ($B = -0.08$ scale, $p < .05$; $B = -0.09$ binary, $p < .05$) and on worry about in person voting ($B = 0.08$, $p < .05$), but insignificant effects of mentioning safety measures compared to the untreated control.

[Figure 3 about here]

Discussion and Conclusion

Our results contribute to the growing literature on how potential risks to voters' health, and beliefs about the costs of voting more generally, affect preferences for voting in person. As with other objective factors and subjective circumstances that generate variation in perceptions of the costs of voting by a particular means, we document an association between concern about COVID-19 and unwillingness to vote in person. Additionally, we show that voters state a preference for election administrators taking specific steps to ameliorate those risks, although even in the survey context they are no more likely to report being likely to vote in person when stipulating that those actions have been taken to reduce the risk of COVID-19 exposure.

These descriptive results are confirmed in a causally informative survey experiment, where it appears merely reminding individuals about the risks of COVID-19 exposure when

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voting may reduce willingness to vote in person, an effect that is not entirely offset by mentioning steps to address those health risks. This suggests that election officials may be better off promoting voting by mail when the threat of infectious disease is substantial because information about how voting in person is being made safe appears to do little to offset the effect of priming concerns about those health risks in the first place. More generally, they suggest that not all health concerns, and not all differences across individuals in subjective perceptions of those threats, can always be remedied by telling potential voters that one is taking steps they report wanting to reduce health risks. In short, not all sources of concerns about the (health) costs of voting can be remedied.

These studies are not without limitations. First, Connecticut voters may be different than voters in other parts of the country. Second, the 2020 presidential election ended up having very high turnout, which may have mitigated the effect of health concerns on voting such that they may be more substantial in lower salience elections. While we focus on the outcome of voting in person, in circumstances in which mail voting is curtailed, fear of voting in person could instead produce differences in overall turnout. Third, the significant partisan polarization concerning COVID-19 (Druckman et al. 2021) may have caused partisans to react to information about risks in ways they would not have in a context with more partisan unity. Despite these limitations, this work provides important insight into how potential health risks affect in person voting that can be used to inform future investigations and policy decisions.

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	(1)	(2)	(3)	(4)	(5)	(6)
	Prefer in Person Voting		End up Voting in Person		Would Vote in Person if Safety Measures Taken	
Worry about COVID from in-person voting scale (0-1)	-0.62*** (0.04)	-0.56*** (0.04)	-0.55*** (0.04)	-0.48*** (0.04)	-0.33*** (0.03)	-0.32*** (0.03)
Age in years	-0.00 (0.00)	-0.00* (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Female (1=yes)	-0.00 (0.03)	0.03 (0.03)	-0.02 (0.03)	0.02 (0.03)	-0.01 (0.02)	0.00 (0.02)
Black (1=yes)	-0.02 (0.07)	0.03 (0.07)	-0.06 (0.07)	-0.01 (0.07)	-0.00 (0.04)	0.02 (0.04)
Hispanic (1=yes)	-0.09 (0.08)	-0.05 (0.08)	-0.03 (0.08)	0.02 (0.08)	-0.01 (0.06)	0.01 (0.06)
Education						
Some College	-0.08* (0.04)	-0.05 (0.04)	-0.08 (0.04)	-0.05 (0.04)	-0.03 (0.03)	-0.02 (0.03)
College	-0.14*** (0.04)	-0.10* (0.04)	-0.14*** (0.04)	-0.09* (0.04)	-0.06* (0.03)	-0.04 (0.03)
Postgrad	-0.20*** (0.05)	-0.15** (0.05)	-0.23*** (0.05)	-0.18*** (0.05)	-0.10*** (0.03)	-0.08** (0.03)
Income						
Less Than \$30,000	-0.07 (0.07)	-0.06 (0.07)	-0.03 (0.07)	-0.02 (0.07)	-0.06 (0.05)	-0.05 (0.05)
\$30,000 - \$59,999	-0.00 (0.06)	0.00 (0.06)	-0.02 (0.06)	-0.01 (0.06)	-0.02 (0.04)	-0.01 (0.04)
\$60,000 - \$99,999	-0.02 (0.06)	-0.02 (0.06)	0.00 (0.06)	0.00 (0.06)	0.01 (0.04)	0.01 (0.04)
\$100,000 - \$149,999	0.01 (0.06)	-0.00 (0.06)	0.02 (0.06)	0.01 (0.06)	0.00 (0.04)	-0.00 (0.04)
\$150,000+	0.05 (0.07)	-0.01 (0.07)	0.12 (0.06)	0.06 (0.06)	0.07 (0.04)	0.05 (0.04)

Health Risks and Voting

Strong Dem.	-0.05 (0.05)		-0.03 (0.05)		0.03 (0.03)	
Weak Dem.	0.01 (0.06)		0.02 (0.06)		0.00 (0.04)	
Lean Dem.	0.01 (0.07)		-0.00 (0.07)		0.06 (0.04)	
Lean Rep.	0.15** (0.05)		0.17** (0.05)		0.09* (0.04)	
Weak Rep.	0.09 (0.06)		0.13* (0.06)		0.02 (0.04)	
Strong Rep.	0.19*** (0.05)		0.23*** (0.05)		0.13*** (0.03)	
Constant	1.08*** (0.10)	0.98*** (0.11)	1.07*** (0.10)	0.94*** (0.11)	1.01*** (0.07)	0.94*** (0.07)
Observations	1211	1211	1211	1211	1211	1211
R-squared	0.21	0.24	0.19	0.23	0.16	0.18

Table 1. *** $p < .001$, ** $p < .01$, * $p < .05$. Unstandardized OLS regression estimates with robust Huber-White standard errors. Models include sample weights. Reference categories are political independent, male, white, high school graduate or less and missing income.

Table 2. Study 2 treatment messages.

1) COVID-19 Risk	The Center for Disease Control believes that COVID-19 is spread by being in close contact with people who are infected, even if they are not necessarily showing symptoms. More recent evidence suggests that the virus may also spread through the air in enclosed spaces because the virus remains in the air even after an infected person leaves the space. This means being near people who you do not live with you, especially in indoor spaces, increases your risk of contracting the virus and spreading it to others.
2) COVID-19 Safety Measures	Due to the risks created by COVID-19, public health and elections officials have been working around the clock to ensure that voting in-person at the polls is going to be as low-risk as possible. This means that the voting booths and lines will be socially distanced with voters strongly encouraged to stay six feet apart from each other at all times at the polls. Shared surfaces, like voting booths will be cleaned between voters. Hand sanitizer and other personal protective equipment are also likely to be made available at polling locations to be consistent with best public health practices. These steps mean voters can feel confident about going to the polls and safely casting their ballots.
3) COVID-19 Risk + Safety Measures	Combination of 1 and 2
4) Civil Unrest	Recent civil unrest has created a tense environment in cities around the country. In many places, people are worried about finding themselves in the middle of a heated exchange between protestors and counter-protestors, some of whom are out to incite violence and destroy property. This has created feelings of uneasiness around the country with people feeling that going about their lives is riskier than usual.

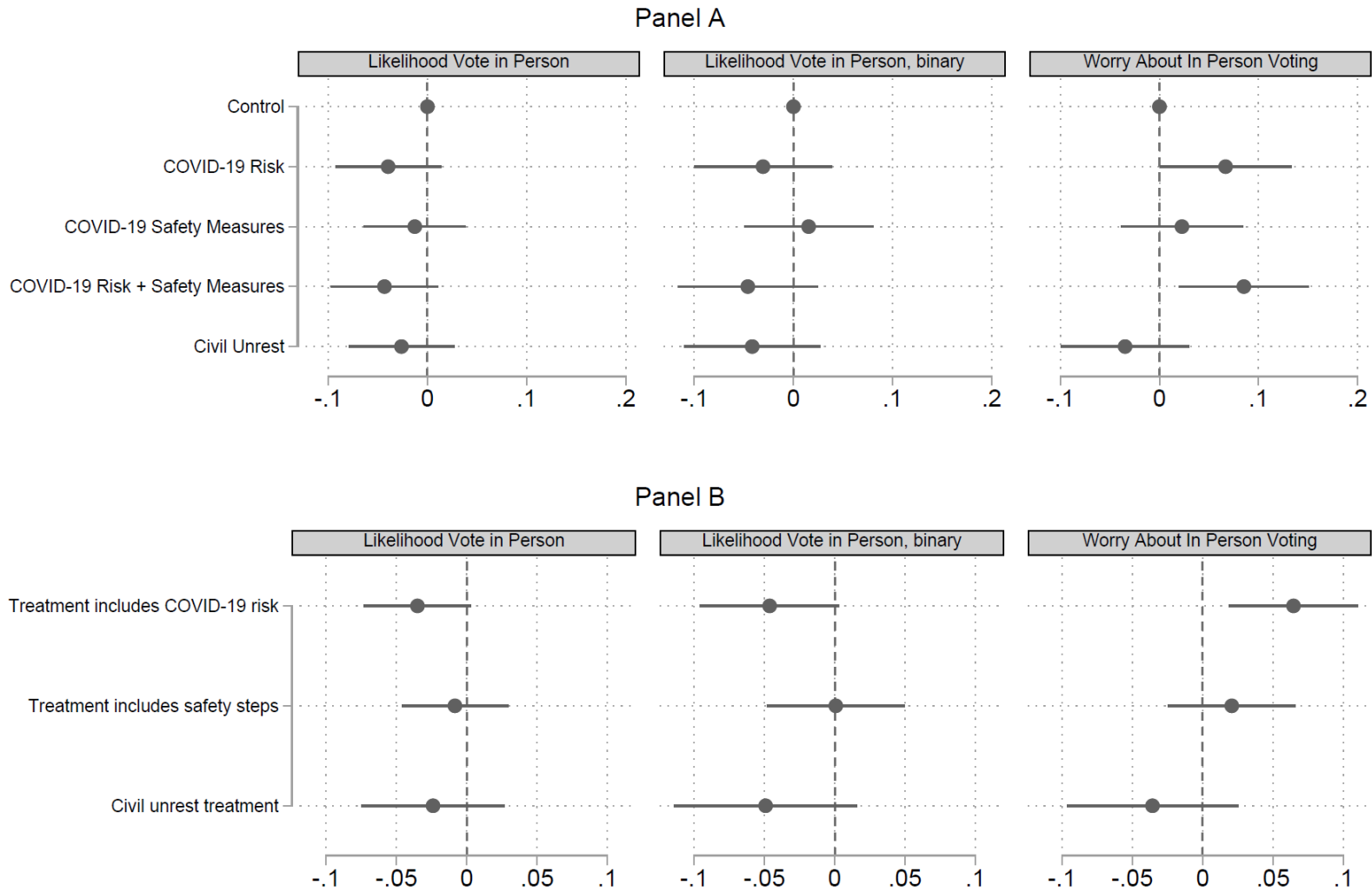
Note: Respondents in the untreated control condition received no information prior to the outcome measures.

Figure 1. COVID-Related voting concerns and preferred safety measures



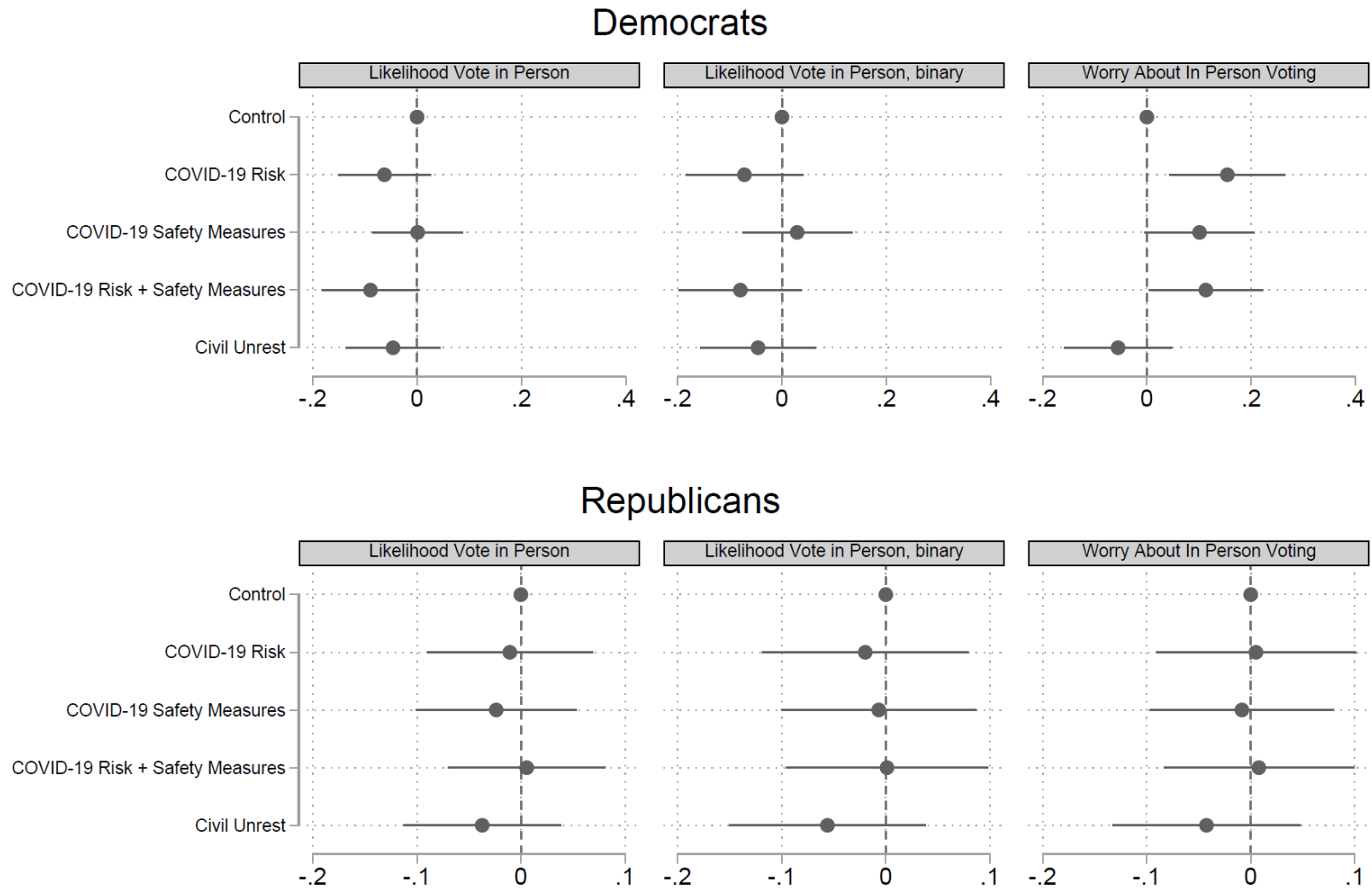
Note: Weighted analysis of Study 1 survey of Connecticut Registrants. Partisans include leaners.

Figure 2: Estimated Effects of Treatments on Intention for and Worry about in Person Voting.



Note: Estimates are covariate adjusted treatment effects with 95% confidence intervals for Study 2. Estimated using OLS regression with robust Huber-White standard errors. Complete regression results in appendix.

Figure 3: Estimated Effects of Treatments on Intention for and Worry about in Person Voting by Respondent Partisanship



Note: Estimates are covariate adjusted treatment effects with 95% confidence intervals for Study 2. Estimated using OLS regression with robust Huber-White standard errors. Complete regression results in appendix.

References

- Brady, Henry E. and John E. McNulty. "Turning Out to Vote: The Costs of Finding and Getting to the Polling Place." *The American Political Science Review*, vol. 105, no. 1, 2011, pp. 115–34.
- Burden, Barry C, Jason M Fletcher, Pamela Herd, Donald P Moynihan, and Bradley M Jones. 2017. "How different forms of health matter to political participation." *The Journal of Politics* 79 (1): 166-178.
- Coll, Joseph. 2022b. "Proper Protective (Voting) Equipment: How Covid-19 Safety Measures Shaped In-Person Voting Experiences During the 2020 Election." *American Politics Research* 50(6): 798–810.
- Coll, Joseph. 2022b. "Waiting to vote safely: How Covid-19 safety measures shaped in-person voter wait times during the 2020 election." *Social Science Quarterly* 103: 380– 398.
- Coppock, Alexander and Oliver A. McClellan. 2019. "Validating the Demographic, Political, Psychological, and Experimental Results Obtained from a New Source of Online Survey Respondents." *Research & Politics* 6(1): 1-14.
- Douglas, Joshua A. and Michael A. Zilis. 2021. "Bring the Masks and Sanitizer: The Surprising Bipartisan Consensus About Safety Measures for In-Person Voting During the Coronavirus Pandemic." *Georgia Law Review* 55:1585-1620.
- Druckman, James N, Samara Klar, Yanna Krupnikov, Matthew Levendusky, and John Barry Ryan. 2021. "Affective polarization, local contexts and public opinion in America." *Nature human behaviour* 5 (1): 28-38.
- Franco, Annie, Neil Malhotra, Gabor Simonovits, and L. J. Zigerell. 2017. "Developing Standards for Post-Hoc Weighting in Population-Based Survey Experiments." *Journal of Experimental Political Science* 4 (2): 161–72.
- Gerber, Alan S., Gregory A. Huber, David Doherty, and Conor M. Dowling. 2013a. "Is There a Secret Ballot? Ballot Secrecy Perceptions and Their Implications for Voting Behaviour." *British Journal of Political Science*, Vol. 43 (1 Jan.): 77-102.
- Gerber, Alan S., Gregory A. Huber, David Doherty, Conor M. Dowling, and Seth J. Hill. 2013b. "Do Perceptions of Ballot Secrecy Influence Turnout? Results from a Field Experiment." *American Journal of Political Science*, Vol. 57 (3 July): 537-51.
- Gollust, Sarah E, and Wendy M Rahn. 2015. "The bodies politic: chronic health conditions and voter turnout in the 2008 election." *Journal of Health Politics, Policy and Law* 40 (6): 1115-1155.
- Kortum, Philip, Robert Stein, Claudia Ziegler Acemyan, Dan S. Wallach, and Elizabeth Vann. 2020. "How Human Factors Can Help Preserve Democracy in the Age of Pandemics." *Human Factors*, 62(7): 1077–1086. <https://doi.org/10.1177/0018720820946896>
- Kousser, Thad, Seth Hill, Mackenzie Lockhart, Jennifer L. Merolla, and Mindy Romero. 2021. "How do Americans want elections to be run during the COVID-19 crisis?" *Research and Politics* April-June 2021: 1–12.
- Lockhart, Mackenzie, Seth J Hill, Jennifer Merolla, Mindy Romero, and Thad Kousser. 2020. "America's electorate is increasingly polarized along partisan lines about voting by mail during the COVID-19 crisis." *Proceedings of the National Academy of Sciences* 117 (40): 24640-24642.

- Mattila, Mikko, Peter Söderlund, Hanna Wass, and Lauri Rapeli. 2013. "Healthy voting: The effect of self-reported health on turnout in 30 countries." *Electoral Studies* 32 (4): 886-891.
- Menger, Andrew and Robert M. Stein. 2020. "Choosing the Less Convenient Way to Vote: An Anomaly in Vote by Mail Elections." *Political Research Quarterly*, 73(1), 196–207.
- Merkley, Eric, Thomas Bergeron, Peter John Loewen, Angelo Elias, and Miriam Lapp. 2022. "Communicating safety precautions can help maintain in-person voter turnout during a pandemic." *Electoral Studies* 75: 102421.
- Monroe, Nathan W. and Dari E. Sylvester. 2011 "Who Converts to Vote-By-Mail? Evidence From a Field Experiment." *Election Law Journal* 10(1): 15-27.
- Ojeda, Christopher, and Julianna Pacheco. 2019. "Health and voting in young adulthood." *British Journal of Political Science* 49 (3): 1163-1186.
- Pacheco, Julianna, and Christopher Ojeda. 2020. "A healthy democracy? Evidence of unequal representation across health status." *Political Behavior* 42 (4): 1245-1267.
- Peyton, Kyle, Gregory A. Huber, and Alexander Coppock. 2022. "The Generalizability of Online Experiments Conducted During The COVID-19 Pandemic." *Journal of Experimental Political Science* 9(3): 379-94.
- Pew Research Center. 2019. "Political Independents: Who They Are, What They Think." March. Available at <https://www.pewresearch.org/politics/wp-content/uploads/sites/4/2019/03/Independents-Report.pdf>, retrieved February 14, 2023.
- Plescia, C., Sevi, S., & Blais, A. (2021). Who Likes to Vote by Mail? *American Politics Research*, 49(4), 381–385.
- Safarpour, Alauna C, and Michael J Hanmer. 2022. "Information about Coronavirus Exposure Effects Attitudes Towards Voting Methods." *Journal of Experimental Political Science* 9 (1): 147-151.
- Sigelman, Lee, and William D. Berry. "Cost and the Calculus of Voting." *Political Behavior* 4, no. 4 (1982): 419–28.
- Stewart, Charles. 2021. *How We Voted in 2020: A Topical Look at The Survey of the Performance of American Elections*. Massachusetts Institute of Technology (Cambridge, MA, USA).
- Theodoridis, Alexander G. 2017. "Me, Myself, and (I), (D), or (R)? Partisanship and Political Cognition through the Lens of Implicit Identity." *The Journal of Politics* 79(4): 1253-67.
- Yoder, Jesse, Cassandra Handan-Nader, Andrew Myers, Tobias Nowacki, Daniel M. Thompson, Jennifer A. Wu, Chenoa Yorgason, and Andrew B. Hall. 2021. "How did absentee voting affect the 2020 U.S. election?" *Science Advances*. 7(52). <https://www.science.org/doi/abs/10.1126/sciadv.abk1755>.