Political polarization and cooperation during a pandemic

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Abstract

In this paper, we examine the relationship between political polarization and individuals' willingness to contribute to the public good by engaging in preventative behaviors against COVID-19. Using a sample of individuals from states where the last gubernatorial election was close, we first show that individuals engage in fewer preventative behaviors when the governor of their state is from the opposite party. We also show that this effect is concentrated among moderate individuals who live in polarized states, and that it is strongest when the state has been relatively forceful in combating COVID-19. The results appear to be driven by opposite-party supporters reducing compliance, rather than own-party supporters increasing compliance. We estimate that the opposite-party effect increased COVID cases by around 1%. Keywords: polarization, COVID-19.

JEL codes: I1, H4, Z1

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1 Introduction

Republicans and Democrats in the U.S. are becoming increasingly hostile to one another. For example, Gentzkow (2016) reports that, as of 2008, nearly half of Americans classified members of the other party as "selfish", up from around 20% in 1960. The same report shows that 20-30% of Americans would be upset if their son or daughter married a member of the other party, up from around 5% in 1960. The difference in individual's warmth towards their own party and their warmth towards the other party, each on a scale of 0-100, has increased from around 25 points in 1980 to 45 points today (Boxell et al., 2020).

There are many reasons to be concerned about political polarization, both as an intrinsic "bad" and because of its consequences for the effective functioning of society. As economists have long argued in the context of ethnic fractionalization, social divisions can lead to inefficient outcomes by limiting individuals' willingness to contribute to public goods (e.g., Alesina et al. (1999),Algan et al. (2016).) This willingness underpins, for example, the ability of governments to raise taxes to pay for roads, schools, and other public infrastructure, to keep streets clean and free from crime, and (as in our setting) the ability to coordinate collective action in a crisis.[1]

In this paper, we examine whether political polarization has undermined the response to the COVID-19 pandemic in the United States. Social distancing poses a classic collective action problem: while the costs of preventative behavior accrue entirely to the individual, the benefits are diffused across a large number of people. In the absence of a government-enforced lock-down, society's ability to combat the pandemic critically hinges on the willingness of people to incur these costs for the greater good. Does polarization undermine individuals' willingness to stay home for the good of others?

A simple comparison of social distancing across more or less polarized individuals or states will not identify the impact of polarization, because both polarization and willingness to comply with social distancing may be related to other, unobserved variables (such as an individual's general agreeableness, or a state's demographic composition). We instead attempt to infer the impact of political polarization indirectly, by using quasi-randomization in a feature of an individual's environment: the party of their state governor. Using both survey and cell-phone location data in the set of states with close gubernatorial elections, we show that individuals comply significantly less with social distancing measures when the other party has narrowly won the election. This effect is bigger when the state government has mounted a stronger policy response against the pandemic, and seems to be driven by opponents of the governor

[1]While there is little empirical work examining the consequences of political fragmentation specifically, Perez-Truglia (2018) shows that individuals are more politically active (a type of contribution to public goods) after they have moved to more politically homogeneous communities.

reducing their compliance behavior (rather than supporters of the governor increasing their behavior). Reduced trust in the state government among opponents explains some, but not all, of our results.

Clearly, this response must be driven by political fragmentation to some degree. The effect of an opposite party governor could not have this type of effect if political parties were not salient to individuals. Given that political parties are a feature of most democracies, however, is this type of response inevitable? Or is the opposite-party response exacerbated by the uniquely high level of political polarization in the United States today?

While we cannot answer these questions definitively without a source of random variation in polarization, we show that the patterns in the data are most consistent with the opposite-party effect being exacerbated by polarized environments - but only for individuals who are themselves more moderate. The most polarized individuals show no opposite-party response, in either polarized or non-polarized states. Moderate individuals, however, show a limited opposite-party response in unpolarized states and a very strong opposite-party response in polarized states. We believe that this is due to the fact that less polarized individuals have weaker prior beliefs over the correct course of action, and are therefore more easily influenced by their environments. Overall, the effect of an opposite-party governor is about twice as strong in polarized states.

While the relationship between the opposite-party response and political polarization is correlational, and should therefore be interpreted with caution, it does suggest an answer to the question of whether an opposite party response is inevitable. The answer is no. Polarized individuals show no response to an opposite party governor, nor do moderate individuals who live in non-polarized states. This response does not seem to be an immutable feature of human nature, therefore, but one that arises under particular conditions - conditions which are unusually prevalent in the United States at this moment in time.

2 Data

2.1 MTurk sample

We ran a survey of MTurk workers in March of 2020.[2] We recruited approximately 2,000 workers from 24 states that had close election results (Republican share of the votes for the two major parties between 45% and 55%) in the last gubernatorial election.[3] We oversampled from the smaller states in order to

[2]See Appendix for exact dates and sampling procedure.

[3]Alaska also had a close elections. However, we were unable to recruit a sufficient number of respondents from Alaska, so dropped this state from the sample.

ensure that we could calculate sample means with precision in each state. After dropping respondents who do not report voting consistently for either party, along with some respondents with missing or irregular data, our main analysis sample is made up of 1,753 MTurk workers.[4]

As in all research using MTurk, it is important to note that our sample is not representative of the U.S. population. The sample is younger, more highly educated, more likely to be white and/or non-Latinx, and is more heavily concentrated in the South than the American population at large. We would also expect that they are more internet-literate than the rest of the population. This is a key reason why we also show that the opposing-party result holds in cell-phone based travel data from Unacast, which is more representative.

2.2 Unacast sample

Because our MTurk sample may not necessarily be representative of the wider U.S. population, we supplement our analysis with a more broad-reaching Social Distancing Dataset, made available to us by Unacast (2020). This dataset leverages GPS locations from mobile phones to identify the changes in the average time spent in and around the home, and more importantly for our analysis, changes in the average distance traveled.

To proxy social distancing compliance, we use two measures provided by Unacast: the percent difference in daily total distance traveled, and the percent difference in daily visitation of non-essential points of interest[5], both averaged across all devices in the county. To estimate these distance metrics, Unacast first calculates the average visitation for each day of the week before the COVID-19 outbreak[6]. Each day of the week during the outbreak is then compared to a corresponding pre-COVID day of the week to account for underlying travel patterns, and this difference captures the change to daily distance traveled.

2.3 Election data

Data on gubernatorial election outcomes was gathered from the website Ballotopedia.com. Of the 24 states with close elections, 14 had narrowly-elected Democratic governors: Connecticut, Kansas, Kentucky, Louisiana, Maine, Michigan, Montana, Nevada, North Carolina, Oregon, Virginia, Washington,

[4]Results are similar but slightly smaller if we include the respondents who do not vote consistently for either party, or if we code these respondents as Democrats or Republicans based on their reported left/right orientation.

[5]Non-essential venues include (but are not limited to) restaurants, department and clothing stores, jewelers, consumer electronics stores, cinemas and theaters, office supply stores, spas and hair salons, gyms and fitness/recreation facilities, car dealerships, hotels, and craft, toy, and hobby shops. Additional detail on categorization of non-essential business is provided through Unacast.

[6]Unacast defines the pre-COVID period as March 8th and prior.

West Virginia, and Wisconsin.[7] The remaining 10 states with narrowly-elected Republican governors are: Florida, Georgia, Indiana, Iowa, Mississippi, Missouri, New Hampshire, Ohio, South Carolina, and South Dakota.

2.4 Political orientation and polarization

We ask MTurk survey respondents to indicate which party they usually vote for: Democrats, Republicans, or neither. We use this variable to classify respondents as Democrats or Republicans. We drop around 250 respondents who do not consistently vote for either party.[8]

We also want to examine whether our results differ across respondents who are more or less polarized. We use a standard measure of affective polarization, which is the difference in the degree of "warmth" the respondents feel towards their own party and towards the other party.[9] Respondents were asked to rate their level of warmth for each party on a scale of 0-100, and we measure the difference in the ratings between the respondent's own party and the other party. We drop approximately 40 respondents who report higher warmth towards the other party. We create an indicator for "polarized individual" if this difference exceeds 40, which is the national median from the American National Election Survey in 2016.[10]

Because the COVID-19 epidemic may have affected political polarization, we also attempted to re-contact a set of respondents who were included in a previous survey on political polarization in the fall of 2019. We were successful in re-surveying approximately 150 of these respondents. The results are qualitatively similar, but numerically stronger, using pre-COVID measures of polarization in this sample. The details of this analysis are included in the Appendix.

2.5 State polarization

The willingness to contribute to a public good may depend not only on a respondent's polarization, but also on their perceptions of the polarization of their community. We therefore also examine whether the response to an opposite party governor differs by state polarization prior to the COVID outbreak. To capture state polarization, we use measures taken from the American National Election Study in 2016.

[7] West Virginia's Governor, Jim Justice, was elected as a Democrat and later switched to the Republican Party. Excluding West Virginia makes no difference to the results.

[8] See Appendix for the remaining sample restrictions, which eliminate a further 52 individuals.

[9] See, for example, Boxell et al. (2020).

[10] Our sample is more polarized than the typical American, with a median of approximately 50. Results are quite similar if we classify respondents as polarized when they are in the upper half of our sample. However, we choose the threshold of 40 so that we are consistent with our measures of state polarization taken from the ANES.

The ANES contains a variable that is identical to our measures of warmth towards the two parties. We use this to construct the fraction of people in each state who are above the national median (40) in the difference between warmth to their own and the other party. We create an indicator for "polarized state" for states that are in the top half of this variable within our sample.

2.6 Outcomes

Our key outcomes are measures related to compliance with recommended measures to combat the spread of COVID-19. We first asked whether the respondent had left their house in the previous 48 hours, and whether this was for reasons classified as essential (work, groceries, pharmacy, medical care) or non-essential (everything else). We use this to create our first outcome variable, "left home - non-essential", which is an indicator for visiting any location other than work, the grocery store or pharmacy, the doctor's office, or the hospital.

Secondly, we ask individuals whether they are continuing to work outside the home, and if so, whether this was by choice. We use this question to construct an indicator for "working outside the home" for the population that had worked outside the home before the pandemic, as well as an indicator for "working outside the home - by choice" for the population that indicated having a choice in the matter. Note that the population that indicates having a choice in the matter is relatively small, around 200 people, which is why we present results for both variables.

Finally, we ask individuals directly about the measures they had taken in the past week to limit the spread of COVID-19. We presented a list of six measures and asked them to indicate any that applied. The six measures were: washing hands or using hand sanitizer more frequently, staying home more often, canceling planned travel, limiting contact with elderly or more high-risk friends and family, wearing gloves or a mask while outside of the house, and "other". We create an indicator variable for each answer, as well as a variable indicating the number of responses the individual reported.

Table 1 shows the means of our outcome variables for Democrats and Republicans living in states with a Democratic/Republican governor. Approximately 30% of the sample reported having left their home in the previous 48 hours, which was similar across different groups. Around 40% of the sample who worked outside the home before the crisis was continuing to do so as at the time of the survey. For Democrats, this number was larger in Republican states, while the reverse was true for Republicans. The raw difference-in-difference estimate is large, at around 11 percentage points, although it is not statistically significant. The estimate is similar among people who report having a choice in the matter,

although we should note that this is a relatively small sample of individuals (approximately 200).

For the preventative measures, the results are much clearer. For three of the six preventative measures - washing hands, staying home more frequently, and canceling travel - Democrats show reduced compliance in Republican states, while Republicans show greater compliance in Republican states. The differences are statistically significant, and range from around 8% of the mean for washing hands or staying home to 25% of the mean for canceling travel. There are no significant differences in the other three variables. On net, the raw difference in the number of behaviors for an individual in an opposing-party state is around -0.3 on a base of around 3. In our regression results, we explore whether these differences are robust to the inclusion of controls and fixed effects, and how they vary with individual and state polarization.

Table 1 also shows the mean of the Unacast travel variables, and how these differ across Democratic/Republican counties in Democratic/Republican states. Both Democratic and Republican counties show less of a reduction in daily distance traveled when the governor is Republican, although this difference is larger for Democrats. The difference-in-difference estimate is around 2.2 percentage points (compared to an average of around 25 percentage points), although it is not statistically significant. The non-essential visitation variable shows similar patterns, although the effects are quantitatively much smaller.

3 Empirical strategy

We begin by estimating the effect of an opposing-party governor on the likelihood of engaging in social distancing measures and other preventative behavior. We estimate the following regression using the MTurk data:

$$Y_{ips} = \alpha + \beta_1 Opposing_{ips} + \beta_2 Democrat_i + \beta_3 \mathbf{X}_i + \gamma_s + \epsilon_{ips} \tag{1}$$

where Y_{ips} is a dummy variable equal to 1 if individual i, with political party/ideology p, in state s, engaged in each of the outcome measures. $Opposing_{ips}$ takes the value of 1 if the respondent's political party p is different from the party of the state governor, and 0 otherwise. $Democrat_i$ takes the value 1 if individual i aligns themselves with the Democratic party and 0 otherwise. $\mathbf{X}_i$ is a vector of demographic characteristics including age, age squared, an indicator for 4 education levels (high school or less, some college, bachelor's degree, post-graduate degree), 4 racial categories (white, black, Asian, and other),

indicator for Latinx and an indicator for female.[11] Because our key dependent variable varies with state and party, we cluster standard errors at the state by party level.[12]

For this regression to capture a causal effect of having an opposing party governor, it must be that there is no other reason for individuals who are in the political minority in their state to show reduced compliance with social distancing. This might not be the case if, for example, political minorities are unusually contrarian, or are more likely to have moved from out of state (and therefore have fewer social ties in the state). If either of these stories was true, we might see reduced compliance for political minorities, but this would not be the result of having an other-party governor.

This concern is the reason we focus on the set of states with close elections. The strategy of comparing close elections was first made by Lee (2008), who used a regression discontinuity design in Congress elections to estimate the causal effect of incumbency on future election. Because we are examining outcomes at the state level (rather than at the congressional seat level), we have a much smaller number of observations in our sample than a typical close-election comparison; for this reason, we do not use a formal regression discontinuity design in our main results. However, the Appendix shows that results using an RD methodology remain statistically significant and are larger in magnitude than the OLS results we present here.

The underlying assumption in our regressions is that individuals who live in states where the Republican party won by a narrow margin are otherwise similar to members of the same party who live in states where the Democratic party won by a narrow margin. In support of this, we show in Table 7 that there are no significant differences in demographics across individuals within our sample who come from opposing-party vs own-party states. Eggers et al. (2015) provides additional evidence that this strategy is valid for estimating treatment effects in most contexts.

Finally, a potential concern with the MTurk data is that, as noted previously, the MTurk sample is not representative of the general population. Additionally, the measures we examine are self-reported and potentially subjective. Perhaps MTurk respondents who live in opposing party states are simply less motivated to report that they undertake preventative measures, even if they are actually behaving the same way as everyone else. To allay this concern, we also present results using the Unacast social

[11] We do not control for the number of cases of COVID-19 in a state, because this outcome is endogenous to compliance behavior. Adding this control does not alter the results, however.

[12] We have confirmed that clustering at the state by party level does not lead to over-rejection of the null hypothesis, which is an issue in many difference-in-difference applications (Bertrand et al., 2004). If we randomly assign each state to be Democratic or Republican, and run our main regression, the coefficient on "opposing" is significant at the 5% level slightly less than 5% of the time. Note that our difference-in-difference design does not rely on a time dimension, and therefore does not suffer from auto-correlation of errors, which is the key argument for clustering standard errors at a higher level in Bertrand et al. (2004).

distancing scoreboard at the county level. Our regression equations in this dataset are:

$$Y_{cps} = \alpha + \beta_1 Opposing_{cps} + \beta_2 Democrat_c + \beta_3 \mathbf{X}_c + \gamma_s + \epsilon_{cps} \tag{2}$$

and

$$Y_{cs} = \alpha + \beta_1 OpposingShare_{cs} + \beta_2 Democrat_c + \beta_3 \mathbf{X}_c + \gamma_s + \epsilon_{cps} \tag{3}$$

The first equation is exactly analogous to Equation 1. We regress a social distancing measure for county c, with a dominant political affiliation p, in state s, on an indicator for whether the state's governor is of the opposite political affiliation to the majority of the county. We assign counties to be Democrat or Republican based on which party dominated during the previous gubernatorial election. County-level controls are taken from MIT's Election Data and Science Lab's 2018 dataset, which contains information on the population and age, educational, race, and gender distribution of each county in 2016. We weight these regressions by county population and cluster standard errors at the state by party level.

In the second version of this regression, we use the fact that, based on the individual relationship we document in our MTurk sample, counties with more political opponents should see bigger reductions in compliance. Rather than classifying counties as Democrat or Republican, we simply measure the fraction of each county that voted for the other party in the previous gubernatorial election. Because our key independent variable now varies within state by party cells, we no longer cluster the standard errors at this level. All other details of these regressions are the same as in Equation 2.

4 Results

4.1 Results on preventative behaviors

The results in Panel 1 of Table 2 show the coefficients from a regression of preventative measures in our MTurk sample on an opposing party indicator, using regression equation 1. The results are quite similar to those shown by the summary statistics in Table 1. Individuals in opposing-party states are 5-9 percentage points more likely to work outside the home (by choice or otherwise), although this difference is only marginally statistically significant. They are significantly less likely to report washing their hands or staying home more often than usual and to have canceled planned travel. On net, they report about

0.1 fewer behaviors than their counterparts living in same-party states.[13] This is approximately 10% of a standard deviation in the independent variable.

Panel 2 of Table 2 shows the results from regressions of Unacast social distancing measures at the county level on indicators for an "opposing"county, and the vote share for the opposing party to the governor, respectively. The first two columns have the percentage change in daily distance traveled as the dependent variable. The coefficient on "opposing" shows that counties where the majority of people voted for the non-winning party reduced their daily distance traveled by about 0.8 percentage points less than counties where the winning party dominated, with the difference significant at the 10% level. In the second column, which uses regression specification 3, the coefficient on "opposing share" is around 3.6 and is significant at the 1% level. This coefficient implies a difference of around 1 percentage point between the 25th and 75th percentiles of opposing share in our data (0.35 and 0.61), which is similar to the estimate in column (1). This is approximately 10% of a standard deviation in the independent variable.

Columns (3) and (4) use an alternative measure, which is the percentage change in visits to non-essential locations. Note that this measure is available for a smaller set of counties than the daily distance measure. The results are qualitatively similar to the daily distance regressions, although statistically insignificant for the opposing indicator, and marginally significant for the opposing share. Using the opposing share version of the regression, moving from the 25th to 75th percentile on opposing share increases the daily visitation change by around 0.6 percentage points.

How economically significant are the effect sizes that we document here? To answer this question, we perform a back-of-the-envelope calculation relating our coefficients from the daily distance traveled regressions to growth in the number of COVID-19 cases. We first relate county-level growth in cases to social distancing behavior two weeks earlier, and then use this to estimate how many fewer cases there would be if every "opposing" county instead behaved like a non-opposing county.[14] The details of this calculation are in the Appendix. We estimate that between March 30-April 27th, there would have been approximately 2,000 fewer cases in close-election states in this case. The total number of cases in these states over this time period was around 250,000, implying that eliminating the opposite-party effect would have reduced cases by around 1%.

The MTurk and Unacast data tell a strikingly similar story: supporters of the party that lost the

[13]We applied both Bonferroni and Sidak corrections to adjust our p-values for multiple comparisons. While the results on working outside of the home are no longer significant, the rest of our results remain robust.

[14]This calculation assumes that the coefficients in Table 2 arise because opponents of the governor reduce their social distancing behavior, rather than supporters of the governor increasing their behavior. We provide support for this interpretation below.

most recent gubernatorial election are less likely to comply with social distancing and other preventative measures, with effect sizes of around 10% of standard deviation. As we discuss below, the welfare and policy implications of this finding depend on why this effect occurs (i.e., are winning parties inducing better behavior among their supporters, or are opponents reducing their behavior?) and under what conditions (i.e., are there things we could do to ensure better compliance among political opponents of the governor?). We turn to these questions in the following subsections.

4.2 Mechanisms

Why do people in opposite-party states comply less with social distancing measures? We begin by examining whether opposite-party status influences potential intermediate variables, such as the perceived importance of social distancing, trust in government and health organizations, or exposure to information skeptical of social distancing. Table 3 provides this analysis. In the first two columns, we examine whether opposite-party governance affects individual's perception of the seriousness of the COVID-19 crisis. The dependent variable in the first column is a respondent's 0-10 rating of the importance of social distancing, while the second is an indicator for whether the respondent indicated being unworried about either getting or transmitting the virus. These coefficients are insignificant and close to zero.

In the third and fourth columns, we examine whether individuals report less trust in either medical organizations or the state government.[15] There is no significant impact on trust in medical organizations (although the coefficient is negative), but a large impact on trust in the state government. This variable does seem to explain some, but not all, of our main result: including it as a control in our main regressions reduces the coefficients on working outside of the house and the number of behaviors by around 25% in both cases (see Appendix Table 9 for the results).

In the fifth column, we examine a respondent's estimation of other people's compliance in their community. This variables ranges from 0-100. While there is a slight decline in estimated compliance in opposing-party states, this is small and insignificant. Finally, we examine whether people in opposing-party states receive different information about the COVID-19 epidemic. In the sixth column, the dependent variable is an indicator for whether the respondent has seen any information skeptical about the importance of social distancing. There is no effect of opposite party-status on this variable.[16]

[15] The specific organizations we ask about are the CDC, the AMA, and the WHO. The dependent variable is an average of the three. Effects on all three variables are in the same direction, and are statistically insignificant.

[16] We also ask about the respondent's key source of COVID-19 related information, to examine whether individuals are less likely to rely on governmental or health organization information when they are in opposite-party states. This does not appear to be the case.

In sum, respondents living in states where the other party narrowly won the election show little difference in attitudes towards the COVID-19 crisis or social distancing, do not appear to trust medical organizations less, do not believe their neighbors are "cheating", and do not get exposed to more skeptical information about the social distancing. They do, however, report lower levels of trust in their state governments, which seems to explain around 25% of our total effect size.[17] Most of our effect, however, appears to be unexplained by these intermediate variables. Why, then, do opposing-party supporters cooperate less?

We believe that the most likely explanation for our results is that individuals simply respond less to requests to stay home when those requests come from an out-group member. In support of this interpretation, Table 4 shows that our result is concentrated in states that had stronger policy responses to the pandemic. In these regressions, we use the summary variable "number of behaviors" as our dependent variable. The first column of Table 4 shows that the response to an opposite party governor is stronger in states that declared emergencies earlier; while the interaction of "opposing" and date of emergency is not significant, the response at zero (the state with the earliest date of emergency declaration) is roughly twice as large as our main estimate. The next five columns interact "opposing" with indicators for school closures, bans on large gatherings, bar/restaurant closures, non-essential business closures, and mandatory quarantine measures. The coefficients on the interaction terms are somewhat mixed, with negative and significant interactions on school closures and quarantine measures, but mixed and insignificant results for the other variables. In order to summarize these results, we take the first principal component of the six policy measures and create an indicator for being above average on this measure; this indicates that a state had a relatively strong policy response. The interaction of "opposing" and "strong policy response" is -0.136 and significant at the 10% level, indicating that our result is bigger in the states with stronger policy responses.

The fact that our results are concentrated in states where the governing party took strong action against the pandemic is consistent with the interpretation that individuals are less likely to comply with state directives when the leader of their state - and the person who is typically the public face of efforts to combat COVID-19 - is from the other party. It is not immediately obvious from these results whether this occurs because the winning party is able to induce their supporters to comply, or whether opponents of the winning party reduce their efforts when the governor encourages preventative measures. Some evidence on this point comes from looking at mean behaviors among supporters and opponents of the

[17] After applying both Bonferroni and Sidak corrections, the p-value for this result remains below 0.01.

winning party, in states with a stronger or weaker policy response. For supporters of the winning party, the mean number of behaviors is approximately 3.25, regardless of whether the state has a strong policy response. For supporters of the losing party, the number of behaviors is also around 3.25 when the state has a relatively weak policy response. When the state has a strong policy response, however, this number falls to 3.10. These results are more consistent with the idea that opponents of the governor reduce their behavior when an out-group member encourages compliance.[18]

If our interpretation is correct, it would clearly be preferable that opponents of the governor did not behave in this way. Is this type of response to a political opponent inevitable? Or is this a feature of the uniquely polarized environment in the United States? In the next section, we attempt to answer this question.

4.3 Polarization and the opposite-party effect

In Table 5, we examine how the response to an opposite party governor varies with an individual's level of affective polarization, as well as the state's level of polarization. As in Table 4, we focus here on the dependent variable "number of behaviors". The first column of Table 5 shows that our main result changes little when we include a control for whether the individual is above the national mean in our measure of affective polarization (which we include in all other regressions in this table.)

In the second column of Table 5, we examine how the effect of an opposing party governor varies with an individual's relative hostility to the other party. Somewhat surprisingly, the effect of an opposing party governor is significantly *weaker* among more polarized respondents. Respondents in the bottom half of the polarization index show a response of -0.25 behaviors to an opposite party governor, while more polarized respondents show a response of around -0.02. We suspect that this result is driven by the fact that less polarized respondents have less strong political beliefs generally, and have weaker prior beliefs about the appropriate course of action. They are therefore likely to be more susceptible to environmental influences on their behavior. Because we cannot separate these two variables - hostility to the other party, and certainty about one's political beliefs - it is difficult to say whether individual polarization would increase the opposite-party response *ceteris paribus*.

Even if individually polarized respondents show weaker responses, it is still possible that a polarized environment helps create the opposite-party response that we see. Column (3) provides some evidence

[18]Because the policy response is endogenous to voter preferences, an alternative explanation is that governors pursue stronger policies when opponents dislike social distancing. This policy would alienate opposite-party voters, and would make sense only if it mobilized own-party supporters. However, given that own-party supporters behave similarly in strong and weak policy states, this does not appear to be a likely explanation for the result.

for this by examining how the response to an opposite party government varies in states that are more or less polarized. The point estimates suggest that the response is about twice as strong in more polarized states (although the difference is not statistically significant).

If our hypothesis about less polarized individuals being more responsive to their environment is correct, we should see a stronger response to state-level polarization among this group. Columns (4) and (5) confirm this fact. In these columns, we repeat the state-level polarization regressions from column (3), splitting the sample into more- and less-polarized individuals. For polarized individuals, there is no effect of an opposing party governor, regardless of the level of polarization in the state. This is consistent with the idea that these individuals are relatively fixed in their behaviors, and do not respond strongly to the environment. For less polarized individuals, however, the opposing-party effect is strongly concentrated in more polarized states. The effect of an opposing-party governor for a moderate individual living in a non-polarized state is around -0.08; for a moderate individual in a polarized state, it is around -0.4. This is approximately one-third of a standard deviation of the independent variable.

Again, a comparison of means is informative here. For polarized individuals, and non-polarized individuals living in non-polarized states, the number of behaviors reported ranges from 3.17-3.28, depending on whether the individual opposes the state government and whether the state is polarized. For the group that shows an opposite-party effect - non-polarized individuals living in polarized states - the number of behaviors is slightly higher than this when their own party wins, at 3.34. When their party loses, however, the number of behaviors drops to 3.00. Again, these results are most consistent with the interpretation that these individuals reduce their behavior in response to an opposite-party governor.

While these results are correlational, they are suggestive of the interpretation that polarized environments help create the opposite-party response - but only among individuals whose prior beliefs about the appropriate response are relatively weak. These individuals appear to reduce cooperative behavior when the governor is from the other party, and do so more in polarized environments. The effects of polarization therefore appear to "spill over" to individuals who remain relatively moderate.

5 Conclusion

In this paper, we have shown that individuals reduce compliance with social distancing measures when the other party holds the state governorship. This appears to be driven by individuals reducing their compliance behavior when the other party is in charge, rather than increasing behavior in response to their own party's efforts, which is consistent with the negative partisanship view of Klein (2020). The

most likely explanation appears to be that individuals are simply less willing to comply with efforts to combat the pandemic when the effort is led by an out-group member.

Clearly, this result implies that political identity plays some role in individuals' decisions to contribute to the public good. This is consistent with theories that relate social fragmentation to difficulty in resolving collective action problems (e.g., Alesina et al. (1999),Algan et al. (2016).) In support of this interpretation, we also show that the effects are stronger in more polarized states (although not among more polarized individuals, whose behavior appears to be relatively less susceptible to environmental influences.) Most importantly, we show the opposing-party effect is present only in certain conditions: among moderate individuals who live in polarized states. This implies that the tendency to reduce compliance in response to an opposing-party leader is not an immutable feature of human nature, but one that can be reduced or eliminated in favorable conditions.

6 Tables

Table 1: Preventative health measures, by political party and governor's political party (close election sample)

				MTurk Data			
Respondent:	Dem.	Dem.		Rep.	Rep.		Diff. in.
Governor:	Dem.	Rep.	Diff.	Dem.	Rep.	Diff.	Diff.
Left house - non-essential	30.0%	28.6%	-1.4%	33.3%	31.6%	-1.7%	0.3%
Work outside of home *	37.7%	40.2%	2.5%	46.3%	37.3%	-9.0%	11.5%
Work outside of home by choice*	28.0%	12.3%	-15.7**%	47.0%	20.9%	-26.1%***	10.4%
Wash hands	95.3%	92.7%	-2.6%**	86.1%	91.1%	4.9%**	-7.6%***
Stay home	94.0%	92.3%	-1.7%	83.6%	88.8%	5.2%**	-6.9%**
Cancel planned travel	42.7%	39.5%	-3.1%	35.0%	43.1%	8.2%**	-11.3%**
Limit contact w. high-risk	76.3%	74.3%	-2.0%	69.4%	65.8%	-3.6%	1.5%
Wear PPE	21.3%	24.6%	3.2%	22.4%	27.2%	4.8%	-1.5%
Other	3.4%	3.1%	-0.4%	3.3%	1.9%	-1.4%	1.0%
Number of preventative behaviors	3.3	3.3	-0.1	3.0	3.2	0.2**	-0.3***
N	553	521	1,074	366	313	679	1,753
				Unacast Data			
County:	Dem.	Dem.		Rep.	Rep.		Diff. in.
Governor:	Dem.	Rep.	Diff.	Dem.	Rep.	Diff.	Diff.
Change: daily distance	-24.8%	-21.6%	3.2%	-20.2%	-19.2%	1.0%	2.2%
N	234	142	376	638	661	1,299	1,675
Change: non-essential visits	-50.3%	-49.1%	1.3%	-40.5%	-40.0%	0.5%	0.8%
N	177	107	284	395	453	848	1,132

This table shows summary statistics for preventative behavior during the COVID-19 pandemic, by the political party of the respondent (in the MTurk data) or of the county (in the Unacast data), and by the political party of the state's governor. An observation in the MTurk data is an individual respondent, all of whom come from "close election" states (where the Republican vote share in the previous gubernatorial election was between 45-55%.) An observation in the Unacast data is a county, and the sample is the set of counties that are in close-election states. A county is classified as "Democrat" if more than 50% of voters voted Democrat in the previous gubernatorial election. The statistical significance of differences in columns (3) and (6) is based on regressions with standard errors clustered at the state level, while the statistical significance of the differences in column (7) are based on regressions with standard errors clustered at the state by party level.
The sample for the work outside of the house measure is restricted to the respondents who indicated that they worked outside the home before the pandemic. The sample size for this variable is 932. The sample for the work outside by choice measure is restricted to respondents who worked outside the home prior to the pandemic, and who indicated that they had a choice in working from home or working outside of the home. The sample size for this variable is 201.

Table 2: Regression results, MTurk and Unacast Samples

	Panel 1: Mturk Data				
	Dependent variable:				
	Left home, non-ess.	Work outside home	Work outside home, by choice	Wash hands	Stay home
Opposing	0.003	0.055*	0.085*	-0.036***	-0.036***
	(0.015)	(0.029)	(0.042)	(0.008)	(0.011)
N	1,753	932	201	1,753	1,753
R^2	0.051	0.089	0.247	0.051	0.061
	Dependent variable:				
	Cancel travel	Limit contact	Wear PPE	Other	Number of behaviors
Opposing	-0.049***	0.008	-0.008	0.005	-0.115***
	(0.016)	(0.021)	(0.018)	(0.006)	(0.043)
N	1,753	1,753	1,753	1,753	1,753
R^2	0.029	0.066	0.051	0.066	0.050
	Panel 2: Unacast data				
	Dependent variable:				
	% change, daily distance	% change, daily distance	% change, non-ess. visits	% change, non-ess. visits	
Opposing	0.836*		0.528		
	(0.468)		(0.582)		
Opposing share		3.662***		2.606*	
		(1.076)		(1.555)	
N	1,675	1,675	1,132	1,132	
R^2	0.678	0.679	0.639	0.640	

The first panel of this table shows the results of OLS regressions of the indicated preventative measures on an indicator that the opposing party holds the governorship in a respondent's state, using the MTurk data. Respondents are classified as Democrat or Republican based on self-reported responses. These regressions also include a control for being a Democrat, state fixed effects (which absorb the effect of having a Republican governor, as well as the Republican vote share), and the following demographic controls: age, age squared, indicators for 4 education levels, indicators for 3 racial categories, an indicator for Latinx, and an indicator for female. Standard errors are clustered at the state by party level. All results are robust to Bonferroni and Sidak corrections, except for those on working from home.
The second panel of this table shows the results of OLS regressions of the indicated measures on measures of county-level opposition to the governor's party, using the Unacast county-level data. In columns (1) and (3), the key independent variable is an indicator that the majority of a county's voters voted for the opposing party to the governor in the last gubernatorial election. In columns (2) and (4), the key independent variable is the share of the county's voters who voted for the opposing party, which ranges from 0 to 1. These regressions include a control for being a Democratic county (Democrat vote share $> 50\%$), state fixed effects (which absorb the effect of being in a Republican state, as well as the overall Republican vote share), county population, the share of the population that is female, white, black, Hispanic, has less than a high school education, has less than a college education, is under age 29, or is over age 65. Regressions are weighted by the county population, and standard errors are clustered at the state by party level in columns (1) and (3). $***\ p < 0.01$, $**\ p < 0.05$, $*\ p < 0.1$

Table 3: Regression results, potential mechanisms

	Imp. of SD	Unworried	Trust in med. orgs.	Trust in state govt.	Est. compliance	Skeptical info
Opposing	-0.019	-0.019	-0.050	-0.722***	0.424	-0.010
	(0.018)	(0.013)	(0.080)	(0.123)	(0.747)	(0.023)
N	1,753	1,753	1,753	1,753	1,753	1,753
R^2	0.080	0.054	0.096	0.103	0.043	0.051

This table shows the results of OLS regressions of the indicated measures on an indicator that the opposing party holds the governorship in a respondent's state, using the MTurk data. Respondents are classified as Democrat or Republican based on self-reported responses. In the top panel, the regressions include controls for being a Democrat and state fixed effects. In the bottom panel, we also add demographic controls. Standard errors are clustered at the state by party level. The results on trust in state government remain after Bonferroni and Sidak corrections. $***\ p < 0.01$, $**\ p < 0.05$, $*\ p < 0.1$

Table 4: The effect of opposing party status, by the strength of state policy responses

	Dependent variable: number of behaviors						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Opposing	-0.248**	0.064	-0.024	-0.212**	-0.144***	-0.058	-0.034
	(0.102)	(0.073)	(0.059)	(0.086)	(0.040)	(0.044)	(0.044)
Opposing x date emerg. declared	0.015						
	(0.010)						
Opposing x schools closed		-0.191*					
		(0.094)					
Opposing x bars/restaurants closed			-0.102				
			(0.077)				
Opposing x gatherings banned				0.140			
				(0.093)			
Opposing x non-ess. business closed					0.092		
					(0.078)		
Opposing x mandatory quarantine						-0.131*	
						(0.076)	
Opposing x strong response							-0.136*
							(0.073)
N	1,753	1,753	1,753	1,753	1,753	1,753	1,753
R^2	0.051	0.051	0.050	0.051	0.051	0.051	0.051

This table shows the results from a regression of the number of preventative behaviors an individual reports on an indicator for having an opposing party governor, and on this indicator interacted with variables measuring the policy response of the state at the time of the survey. All states in our sample had declared emergencies as of the survey date; the variable "Date emerg. declared" is the date of the declaration relative to March 1st. The policy variables used in columns (2)-(6) are indicators for the policy described. The variable used in column (7) is an indicator that the state is above average in the first principal component of the six policy variables, indicating a relatively strong policy response. $***$ $p < 0.01$, $**$ $p < 0.05$, $*$ $p < 0.1$

Table 5: Regression results, by level of polarization

	Dependent variable: number of preventative behaviors				
	(1)	(2)	(3)	(4)	(5)
Opposing	-0.116***	-0.250***	-0.079	-0.098	-0.085
	(0.043)	(0.076)	(0.051)	(0.078)	(0.088)
Opposing x polarized individual		0.234***			
		(0.105)			
Opposing x polarized state			-0.060	0.141	-0.327***
			(0.075)	(0.110)	(0.121)
Sample	All	All	All	Polarized individuals	Non-polarized individuals
N	1,753	1,753	1,753	1,014	739
R^2	0.050	0.053	0.050	0.052	0.141

This table shows the results of regressions of the number of preventative behaviors an individual in the MTurk sample reports on an indicator for being of the opposing party to the state's governor, and this variable interacted with measures of individual and state polarization. The variable "polarized individual" is an indicator that the individual in our sample is above the national median (taken from the 2016 ANES) on a measure of affective polarization. The variable "polarized state" is an indicator that the state is above the median in the fraction of polarized individuals, as measured in the 2016 ANES. The variable "both" is the interaction between the two. The first column differs from our regression in Table 2 (panel 2, column (5)) only in that we have added the variable "polarized individual" as a control. This variable is added as a control in all regressions in this table. Otherwise, the controls and sample are identical to those used in Table 2, and we continue to cluster standard errors at the state by party level. $***$ $p < 0.01$, $**$ $p < 0.05$, $*$ $p < 0.1$

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A Pandemic Response

One possible concern in this empirical strategy could stem from the potential for delayed reaction in policy intervention by more polarized states. If states facing more political gridlock as a result of polarization are also slower to implement social distancing directives, this could bias us to finding lower compliance. To address this, we have collected data on the timing of three important COVID response policies, and their timing. We focus specifically on the timing of declarations of a state of emergency (or public health emergency declarations), school closures, and limits to bar and restaurant operations.

Table 6 demonstrates that with limited exceptions, each of our sample states implemented each of these measures within the same week. One notable exception is Florida, which declared a state of emergency two weeks ahead of the last state in the sample to do so (Georgia).[19]

[19] We further note close states in particular do not seem to differ systematically from the broader set of states. All states had declared a state of emergency between 2/29/2020 (Washington) and 3/16/2020 (Utah).

Table 6: State COVID Response Policies and Timing

State	Public State of Emergency Declared	School Closures	Bar/Restaurant Limits	Mandatory Quarantine	Gatherings Banned	Non-ess. Bus. Closed
Connecticut (D)	3/10/2020	3/17/2020	3/16/2020		3/12/2020	3/23/2020
Florida (R)	3/01/2020	3/17/2020	3/17/2020	3/23/2020		
Georgia (R)	3/14/2020	3/16/2020	3/23/2020		3/23/2020	
Indiana (R)	3/06/2020	3/19/2020	3/16/2020			3/23/2020
Iowa (R)	3/09/2020		3/17/2020			
Kansas (D)	3/12/2020	3/17/2020			3/17/2020	
Kentucky (D)	3/06/2020	3/16/2020	3/16/2020		3/17/2020	3/22/2020
Louisiana (D)	3/11/2020	3/13/2020	3/17/2020	3/22/2020	3/13/2020	
Maine (D)	3/15/2020		3/18/2020		3/18/2020	3/25/2020
Michigan (D)	3/10/2020	3/16/2020	3/16/2020	3/24/2020	3/17/2020	3/24/2020
Mississippi (R)	3/14/2020	3/19/2020				
Missouri (R)	3/13/2020	3/23/2020	3/23/2020		3/23/2020	
Montana (D)	3/12/2020	3/15/2020	3/20/2020			
Nevada (D)	3/13/2020	3/15/2020	3/17/2020		3/19/2020	3/20/2020
New Hampshire (R)	3/13/2020	3/15/2020	3/16/2020		3/16/2020	
North Carolina (D)	3/10/2020	3/16/2020	3/17/2020		3/14/2020	
Ohio (R)	3/09/2020	3/16/2020	3/15/2020	3/22/2020	3/17/2020	
Oregon (D)	3/08/2020	3/16/2020	3/17/2020	3/23/2020	3/12/2020	3/23/2020
South Carolina (R)	3/13/2020					
South Dakota (R)	3/13/2020	3/13/2020	3/23/2020			
Virginia (D)	3/12/2020	3/24/2020	3/24/2020		3/24/2020	
Washington (D)	2/29/2020	3/13/2020	3/15/2020	3/23/2020	3/25/2020	3/25/2020
West Virginia (D)	3/04/2020	3/13/2020	3/18/2020	3/24/2020		3/24/2020
Wisconsin (D)	3/12/2020	3/18/2020	3/20/2020	3/25/2020	3/17/2020	3/25/2020

This table shows the close timing of COVID response across the 24 main states in our sample. All schools in Iowa went under voluntary closure on 3/15/2020 (eliminating the need for explicit mandate).

B Robustness Checks and Supporting Tables

Table 7: Balancing tests

	Age	College	Female	Non-white	Latinx
Opposing	0.781	-0.014	0.011	-0.012	0.011
	(0.508)	(0.014)	(0.018)	(0.022)	(0.010)
N	1,753	1,753	1,753	1,753	1,753
R^2	0.031	0.017	0.021	0.061	0.044

This table shows the results from regressions of demographic variables on an indicator for "opposing", an indicator for "Democrat", and state fixed effects, within the MTurk sample.

Table 8: Regression discontinuity results, MTurk and Unacast Samples

	Panel 1: Mturk Data				
	Dependent variable:				
	Left home, non-ess.	Work outside home	Work outside home, by choice	Wash hands	Stay home
Opposing	0.042	0.118**	0.090***	-0.049***	-0.002
	(0.062)	(0.055)	(0.033)	(0.018)	(0.026)
N	1,753	932	201	1,753	1,753
	Dependent variable:				
	Cancel travel	Limit contact	Wear PPE	Other	Number of behaviors
Opposing	-0.076*	-0.144***	-0.036	0.014**	-0.333***
	(0.045)	(0.021)	(0.051)	(0.005)	(0.083)
N	1,753	1,753	1,753	1,753	1,753
	Panel 2: Unacast data				
	Dependent variable:				
	% change, daily distance	% change, non-ess. visits			
Opposing	-0.350		5.591*		
	(2.310)	(3.385)			
N	1,675	1,132			

This table shows regression discontinuity estimates of the effect of an opposing party on preventative behavior, using the MTurk and Unacast data. The running variable is opposing party share, which by construction is symmetric and there shows no bunching at the cutoff. We implement these regressions using the Stata package rdrobust (Calonico et al., 2014), which optimally selects the bandwidth. There are no controls in the regression. Standard errors are clustered at the state by party level. $***$ $p < 0.01$, $**$ $p < 0.05$, $*$ $p < 0.1$

Table 9: Regression results, MTurk sample: The effects of trust in state government

	Dependent variable:									
	Left home, non-ess.	Work outside home	Work outside home, by choice	Wash hands	Stay home	Cancel travel	Limit contact	Wear PPE	Other	Number of behaviors
Opposing	0.000	0.0409	0.085*	-0.035***	-0.031***	-0.041***	0.011	0.004	0.003	-0.088**
	(0.0154)	(0.031)	(0.043)	(0.008)	(0.011)	(0.016)	(0.019)	(0.020)	(0.005)	(0.041)
N	1,753	932	201	1,753	1,753	1,753	1,753	1,753	1,753	1,753
R^2	0.050	0.099	0.248	0.052	0.063	0.031	0.066	0.058	0.028	0.055

The first panel of this table shows the results of OLS regressions of the indicated preventative measures on an indicator that the opposing party holds the governorship in a respondent's state, using the MTurk data. Respondents are classified as Democrat or Republican based on self-reported responses. These regressions are identical to those presented in Table 2, and add a control for trust in state government. They also include a control for being a Democrat, state fixed effects (which absorb the effect of having a Republican governor, as well as the Republican vote share), and the following demographic controls: age, age squared, indicators for 4 education levels, indicators for 3 racial categories, an indicator for Latinx, and an indicator for female. Standard errors are clustered at the state by party level. $***$ $p < 0.01$, $**$ $p < 0.05$, $*$ $p < 0.1$

Table 10: Results with pre-existing measures of polarization: re-contacted sample

	Dependent variable: number of behaviors	
Opposing	-0.321	-0.192
	(0.281)	(0.310)
Opposing x	0.441	0.272
polarized individual	(0.450)	(0.310)
N	146	146
R^2	0.232	0.234
Polarization measured in:	Nov 2019	Mar 2020

This table shows the results from a regression of the number of preventative behavior an MTurk respondent engages in on an indicator for living in an opposing party state, and this indicator interacted with an indicator for being above the national median in a measure of affective polarization. The sample is a set of individuals who were initially surveyed for a separate project in November 2016, and who we were able to recontact for this project. These individuals do not necessarily live in close election states, but details of sample restriction and the regressions are otherwise identical to those in the main analysis tables. $***$ $p < 0.01$, $**$ $p < 0.05$, $*$ $p < 0.1$

C The Effect of Polarization on COVID-19 Cases

In order to understand how the social distancing effects we find translate to disease burden, we provide a quick back of the envelope calculation below. We first want to estimate the effect of mobility on COVID-19 cases. To do this, we use case and Unacast mobility data for the weeks from 03/30/2020 to 04/27/2020 and estimate the following equation:

$$Y_{cst} = DistanceTraveled_{cs,t-2} + DistanceTraveled_{cs,t-2} * Population_{cs} + NumCases_{cs,t-1} + \beta_3 \mathbf{X}_c + \gamma_s + \epsilon_{cps} \quad (4)$$

where the outcome of interest, Y_{cst} is new COVID-19 cases in county c, in state s, in week t. We regress this on a measure of the change in distance traveled (relative to a pre-COVID benchmark) in week $t-2$. [20] Because new cases are likely dependent on the existing number of cases, we further control for the number of cases in a county in the previous week. The remainder of our controls mirror those used in our main Unacast specification, in Equation 2, however we cluster our standard errors at the county level.

Our results show that an additional 1 percentage point reduction in distance traveled is associated with an additional 0.8 cases per 100,000 population, which is significant at the 5% level. We use this relationship, along with our estimated coefficient on "opposing" in the daily distance traveled regressions, to predict the number of avoidable cases for each opposing county, each week. Specifically, this number

[20] Lauer et al. (2020) suggest that cases in the 99th percentile will present with symptoms within 14 days.

is $CasesAvoidable_{cst} = 0.836 * (-0.052 + 0.841 * Population_{cs})$. We then collapse this number across all opposing counties in our sample to arrive at our estimate of around 2,000 avoidable cases.

D MTurk Survey Details

D.1 Sampling and dates

We recruited workers from MTurk between March 24th and March 26th, 2020. The vast majority (around 99%) of workers answered on the 24th and 26th. However, because we allowed the survey to be posted for 1 week, there are a small number of respondents who answered later. Approximately 1200 of our respondents came from tasks that restricted respondents to those living in our close-sample states; the number of respondents by state in this part of the sample approximately mirrors the population distribution across states. The remaining respondents were recruited from state-specific tasks, in order to ensure a minimum number of respondents from each state. We were not always successful in recruiting the desired number of participants in each state, which is why we dropped Alaska and why we have a small number of respondents in states such as Maine or New Hampshire.

D.2 Sampling restrictions

We were able to recruit 2,088 participants who had non-missing data on all essential variables. We first drop respondents who report that they do not vote consistently for either party. This eliminates 287 respondents. We next eliminated state x party cells with fewer than five observations; this eliminated a total of 8 respondents. Finally, we dropped respondents who reported higher warmth towards the other party than the party they typically voted for. This eliminated 40 observations. This left us with our final sample of 1,753 participants.

D.3 Survey text

ABOUT THIS RESEARCH: You are being asked to participate in a research study. Scientists do research to answer questions and learn new information. Some research might help change or improve the way we do things in the future. This consent information will tell you more about the study to help you decide whether you want to participate. Please read this information before agreeing to be in the study.

TAKING PART IN THIS STUDY IS VOLUNTARY: You may choose not to take part in the study or may choose to leave the study at any time. Deciding not to participate, or deciding to leave the study later, will not result in any penalty and will not affect your relationship with the University of

Notre Dame.

As an alternative to participating in the study, you may choose not to take part.

WHY IS THIS STUDY BEING DONE?: The purpose of this study is to understand more about individuals responses to the COVID-19 (Corona virus) epidemic.

You were selected as a possible participant because you chose to fulfil this task on MTurk.

The study is being conducted by Kirsten Cornelson at the University of Notre Dame and Boriana Miloucheva at the University of Toronto.

HOW MANY PEOPLE WILL TAKE PART?: If you agree to participate, you will be one of 1000 participants taking part in this study.

WHAT WILL HAPPEN DURING THE STUDY?: If you agree to be in the study, you will be asked to do the following things:

- You will be asked to complete a survey which will take approximately 5 minutes of your time.
- The survey will ask for some basic demographic information and about your attitudes on a variety of issues. It will also ask about how your behavior and attitudes have changed as a result of the epidemic.
- You will be compensated $1.00 for completing the survey.

WHAT ARE THE RISKS OF TAKING PART IN THE STUDY?: While participating in the study, the potential risks include:

- Discomfort answering some of the questions in the survey. If you do feel uncomfortable at any time, you may discontinue the survey or skip any question.
- Loss of confidentiality in the data. To avoid this risk, responses to this survey are collected anonymously; no information that could identify you will be requested during the data collection phase. A limited number of research team members will have access to the data during data collection.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THE STUDY?: We dont expect you to receive any benefit from taking part in this study but we hope to learn things that will help scientists in the future.

HOW WILL MY INFORMATION BE PROTECTED?: Efforts will be made to keep your survey responses confidential. We cannot guarantee absolute confidentiality, but we have guarded against this risk by not asking for any information that could identify you. The data collected in this study will be stored in a secure location and will be accessible only to a limited number of researchers.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates, the University of Notre Dame Institutional Review Board or its designees, and (as allowed by law) state or federal agencies, especially the Office for Human Research Protections (OHRP), who may need to access the research records.

Your Mechanical Turk Worker ID will be used to distribute payment to you but will not be stored with the research data we collect from you. Please be aware that your MTurk Worker ID can potentially be linked to information about you on your Amazon public profile page, depending on the settings you have for your Amazon profile. We will not be accessing any personally identifying information about you that you may have put on your Amazon public profile page.

WILL MY INFORMATION BE USED FOR RESEARCH IN THE FUTURE?: Information collected in this study may be used for future research studies or shared with other researchers for future research. Since identifying information will not be stored with the data, we will not ask for your additional consent.

WILL I BE PAID FOR PARTICIPATION?: You will be paid $1.00 for the survey upon completion.

MTurk does not allow for prorated compensation. In the event of an incomplete HIT, you will not receive any compensation.

This study contains a number of checks to make sure that participants are finishing the tasks honestly and completely. As long as you read the instructions and complete the tasks, your HIT will be approved. If you fail these checks, your HIT will be rejected and you will not receive any compensation.

WHO SHOULD I CALL WITH QUESTIONS OR PROBLEMS?: For questions about the study, contact the lead researcher, Kirsten Cornelson, at 574-631-3461.

For questions about your rights as a research participant, to discuss problems, complaints, or concerns about a research study, please contact Notre Dame Research Compliance at 574-631-1461 or at compliance@nd.edu.

PARTICIPANTS CONSENT: In consideration of all of the above, I give my consent to participate in this research study. By proceeding, I confirm that I am 18 years old, and agree to take part in this study

Questions:

1. In which state do you currently reside?

2. What is your year of birth?
3. What is the highest level of school you have completed or the highest degree you have received?
    (a) Less than high school degree
    (b) High school graduate (high school diploma or equivalent including GED)
    (c) Some college but no degree
    (d) Associate degree in college (2-year)
    (e) Bachelor's degree in college (4-year)
    (f) Master's Degree
    (g) Doctoral Degree
    (h) Professional degree (JD, ND)
4. Are you Spanish, Hispanic, or Latino or none of these?
    (a) Yes
    (b) None of these
5. Choose one or more races that you consider yourself to be:
    (a) White
    (b) Asian
    (c) Black or African American
    (d) Native Hawaiian or Pacific Islander
    (e) American Indian or Alaska Native
    (f) Other
6. What is your sex?
    (a) Male
    (b) Female
7. How would you rate your political views on the following scale?
    (a) Extremely left-wing
    (b) Left-wing
    (c) Somewhat left-wing
    (d) Neither left- nor right-wing
    (e) Somewhat right-wing
    (f) Right-wing
    (g) Extremely right-wing
8. Which party do you vote for most often?

(a) Democratic Party
(b) Republican Party
(c) Other
(d) Prefer not to say

9. On a scale of 0-100, please indicate how warmly you feel towards each of the following political parties. 0 indicates that you feel very coldly towards the party, while 100 indicates that you feel very warmly. If you do not know how you feel about a party, do not enter a number.

   The Democratic Party

10. On a scale of 0-100, please indicate how warmly you feel towards each of the following political parties. 0 indicates that you feel very coldly towards the party, while 100 indicates that you feel very warmly. If you do not know how you feel about a party, do not enter a number.

    The Republican Party

11. Which of the following statements do you agree with more?

    (a) People can generally be trusted
    (b) You can't be too careful when dealing with people

12. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **The people who live in your neighborhood**

    (a) 1
    (b) 2
    (c) 3
    (d) 4
    (e) 5
    (f) 6
    (g) 7
    (h) 8
    (i) 9
    (j) 10

13. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **The federal government**

    (a) 1

(b) 2
(c) 3
(d) 4
(e) 5
(f) 6
(g) 7
(h) 8
(i) 9
(j) 10

14. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **Your state government**

(a) 1
(b) 2
(c) 3
(d) 4
(e) 5
(f) 6
(g) 7
(h) 8
(i) 9
(j) 10

15. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **Your local government**

(a) 1
(b) 2
(c) 3
(d) 4
(e) 5
(f) 6
(g) 7
(h) 8
(i) 9
(j) 10

16. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **Large corporations**

(a) 1
(b) 2
(c) 3
(d) 4
(e) 5
(f) 6
(g) 7
(h) 8
(i) 9
(j) 10

17. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **The American Medical Association (AMA)**

(a) 1
(b) 2
(c) 3
(d) 4
(e) 5
(f) 6
(g) 7
(h) 8
(i) 9
(j) 10

18. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **The Center for Disease Control (CDC)**

(a) 1
(b) 2
(c) 3
(d) 4
(e) 5
(f) 6
(g) 7
(h) 8
(i) 9

(j) 10

19. Please indicate how much you trust the following group on a scale of 1-10. A rating of "1" indicates a high level of distrust, while a rating of "10" indicates a high level of trust. **The World Health Organization (WHO)**

    (a) 1
    (b) 2
    (c) 3
    (d) 4
    (e) 5
    (f) 6
    (g) 7
    (h) 8
    (i) 9
    (j) 10

20. During this pandemic, I am most worried about

    (a) Getting COVID-19
    (b) Spreading COVID-19
    (c) Neither

21. I think social distancing is

    (a) Extremely important: No one should be outside of their home except to go to work (if they must), the doctor, or the grocery store.
    (b) Very important: I understand that people sometimes leave their house, but they should be taking extra precautions
    (c) Somewhat overblown: As long as people wash their hands, I dont really see the problem
    (d) Completely overblown: People need to just live their life as usual, and it will all die down

22. Have you left your home in the past 48 hours?

    (a) Yes
    (b) No

23. If so, what places did you visit? Please check all that apply.

    (a) The homes of family or friends
    (b) Work

(c) Grocery store or pharmacy
(d) Doctors office/hospital
(e) Other stores
(f) Restaurants, bars, or other entertainment venues
(g) Outdoors (walk, jog, playground, etc)
(h) Other
(i) I have not left my home in the past 48 hours

24. Have any of your family members left their homes (for reasons other than work or visiting the doctor) in the past 48 hours?

(a) Yes
(b) No
(c) I have no family members, or do not know

25. What percentage of people in your community do you think have left their homes in the past 48 hours?

(a) 0-10%
(b) 10-20%
(c) 20-30%
(d) 30-40%
(e) 40-50%
(f) 50-60%
(g) 60-70%
(h) 70-80%
(i) 80-90%
(j) 90-100%

26. Please describe your current work situation.

(a) I did not work outside the home prior to the COVID-19 pandemic, and this has continued.
(b) I worked outside the home prior to the COVID-19 pandemic, and am continuing to do so at the request or requirement of my employer.
(c) I worked outside the home prior to the COVID-19 pandemic, and am continuing to do so by choice.
(d) I worked outside the home prior to the COVID-19 pandemic, and am now working remotely at the request or requirement of my employer.
(e) I worked outside the home prior to the COVID-19 pandemic, and am now working remotely by choice.

(f) I worked outside the home prior to the COVID-19 pandemic, and have lost my job.

(g) Other.

27. Please indicate whether you have taken any of the following step **in the past week** to limit the spread of COVID-19. (Select all that apply).

    (a) Washing hands or using hand sanitizer more frequently
    (b) Wearing gloves or a mask while out of the house
    (c) Staying home more often
    (d) Limiting contact with elderly or high-risk friends and family
    (e) Cancel ling planned travel
    (f) Other

28. Please indicate whether you have taken any of the following step **since the pandemic first began** to limit the spread of COVID-19. (Select all that apply).

    (a) Washing hands or using hand sanitizer more frequently
    (b) Wearing gloves or a mask while out of the house
    (c) Staying home more often
    (d) Limiting contact with elderly or high-risk friends and family
    (e) Canceling planned travel
    (f) Other

29. When did you begin taking these measures?

    (a) This week
    (b) Last week
    (c) More than 2 weeks ago

30. My main source of information on COVID-19 has been:

    (a) Local government
    (b) State government
    (c) Federal government
    (d) Health organization (CDC, WHO, etc)
    (e) Newspaper or television news
    (f) Social media: friends and family
    (g) Social media: others

31. At any point since the pandemic began, have you received any information or social media posts that said social distancing was an unnecessary precaution?

(a) Yes

(b) No

32. At any point since the pandemic began, have you received any information that social distancing is a good way to prevent getting and spreading COVID-19?

(a) Yes

(b) No