

Morbid Polarization: Exposure to COVID-19 and Partisan Disagreement about Pandemic Response

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The COVID-19 pandemic has affected the lives of all Americans, but the severity of the pandemic has been experienced unevenly across space and time. Some states saw sharp rises in COVID-19 cases in early March, whereas case counts rose much later in the rest of the country. In this article, we examine the relationship between exposure to COVID-19 and citizens' views on what type of measures are required to deal with the crises and how experience with and exposure to COVID-19 is associated with greater partisan polarization. We find consistent evidence of partisan divergence in pandemic-response policy preferences across the first six months of the COVID-19 pandemic: Republicans support national control measures whereas Democrats support welfare policies, and interparty differences grow over time. We find only limited evidence that exposure or experience moderates these partisan differences. Our findings are consistent with the view that Americans interpret the COVID-19 pandemic in fundamentally partisan manner, and that objective pandemic conditions play at most a minor role in shaping mass preferences.

KEY WORDS: COVID-19, partisanship, polarization, pandemic policies, risk avoidance, terror management

INTRODUCTION

A Tale of Two Pandemics?

The COVID-19 pandemic hit the United States at a moment of near-historic levels of partisan polarization. The Republican administration's response to COVID-19 was marked by repeated denial that the pandemic was a threat to American public health: "It's going to disappear. One day—it's like

a miracle—it will disappear” (Wolfe & Dale, 2020). Congressional Democrats, by contrast, sounded the alarm early and often, anticipating what would later arrive as lockdown measures across most of the U.S. states (and, in particular, early lockdown by states led by Democratic governors; Adolph et al., 2021).

This early, elite-level partisan divide on the seriousness of and potential responses to COVID-19 politicized the pandemic for American citizens (Green et al., 2020; van Green & Tyson, 2020). There were partisan divides in people’s beliefs, such as factual claims about the virus (Imhoff & Lamberty, 2020; Jiang et al., 2020; Miller, 2020) and belief accuracy (Stekelenburg et al., 2021). Opinions on the policy responses of political and health authorities also differed by partisanship, including trust in scientists and evaluations of politicians (Druckman et al., 2020; Evans & Hargittai, 2020). And, in behavioral terms, studies measuring self-reported and observed behaviors both show partisan differences in acts like wearing face masks, socially distancing, or reducing mobility, with Democrats more likely to report these behaviors than Republicans (Allcott et al., 2020; Gadarian et al., 2021; Grossman et al., 2020).

This body of evidence suggests that Democrats and Republicans are subjectively experiencing different pandemics. But we lack a good understanding of whether individuals’ objective experience with COVID-19—either direct exposure (own diagnosis or that of family or friend) or context of exposure (local rate of COVID diagnoses or deaths)—affect how the mass public thinks the government responded to it. What we do know is that the *experience* of the pandemic exhibited significant spatial and temporal heterogeneity. Does the experience of COVID-19—measured by one’s own exposure to COVID-19, confirmed cases at the state-level, or number of deaths—affect or override partisan attitudes about COVID-related policy preferences?

To ground our discussion on how exposure to disease shapes individual attitudes about the role of government during a health crisis, we draw on literature in social psychology—social identity, pathogen avoidance (PA), and threat management theory (TMT). Social identity theory predicts that partisanship—as a social identity—will lead to partisan differences in health-related attitudes that persist even in the face of changing levels of exposure. We weigh this expectation against the latter two theories, which suggests that direct experiences of the pandemic may override partisan positions, as exposure to disease should lead to more risk-minimizing preferences. We test these hypotheses using an original longitudinal panel survey that includes a battery of items on attitudes about three types of policy response to the COVID-19 pandemic: welfare policies (e.g., paid sick leave), national control policies (e.g., border closures, trade barriers to control the spread of the disease), and what we term “extreme measures” (e.g., delaying elections).

We find consistent evidence that partisan differences in opinion emerge early, continue to diverge over the first six months of the pandemic (March through June 2020), and remain largely unrelated to personal experience with COVID-19. Whereas Republicans express support for COVID-19 measures that invest the federal government with strong national control, Democrats support welfare-oriented policies. We find only limited evidence that exposure or experience moderates these partisan differences. For example, we find no evidence that Republicans became more supportive of welfare-oriented policies in states where virus caseloads rose over time. The only exception to this pattern is when it comes to support for extreme measures: Whereas partisan differences over measures like delaying elections were large among those affected by COVID-19 in the earliest wave of the pandemic, those partisan differences had evaporated by early summer.

Our main result suggests that exposure to the COVID-19 pandemic—either personally or in one’s community—does not moderate partisan differences in health policy attitudes. This implies that partisan dynamics, and not objective conditions, may continue to drive individual policy views on the proper responses to national crises and health emergencies.

Can Exposure Override Social Identity? Theories From Social Psychology

Social identity argues that individuals favor social ingroups to maximize their self-esteem (Tajfel and Turner, 1979). Group categorization leads to intergroup social differentiation and ultimately to positive social identification. As a group's salience increases, individuals begin to identify with it and use it to guide attitudes and behavior. In times of uncertainty, individuals tend to reassure themselves by stronger identification with their ingroup, through a firmer endorsement of group norms and support for harder punishment for group deviants (Abrams et al., 2021; Packer et al., 2021).

Partisan self-identification increasingly acts as a social identity in the United States (Mason, 2018), providing partisans with cues through which they interpret events, especially those relevant to their own ingroup goals (Abrams et al., 1990). Partisanship is part of a suite of opinions, experiences, and characteristics that define not just who you vote for, but also, increasingly, *who you are*. Partisanship has been described as a “mega-identity, with all the psychological and behavioral magnifications that implies” (Mason, 2018, p. 14). As partisanship in the United States occurs in a highly conflictual intergroup context, these identities are meaningful and salient.

In a context of high levels of partisan polarization, individuals already have well-formed expectations about what sorts of views would be consistent with their partisan identity, and strong partisans can select sources of information that confirm their own ideological views (Garrett & Stroud, 2014; Rodriguez et al., 2017). The implication is that in an environment of preexisting polarization, the perception of a massive collective event, such as a global pandemic, may simply uncover partisan differences in health policies that are unmoved in any direction by greater exposure to the virus itself (Conway et al., 2021). Empirically, this approach rooted in social identity theory makes predictions that are nearly indistinguishable from a purely partisan interpretation of the pandemic: Members of different parties have different policy preferences that shape how they interpret the pandemic, and so Republicans and Democrats have different policy attitudes. This forms the theoretical foundation of our null hypothesis, that social identities determine COVID-19 policy attitudes.

H_0 (null hypothesis): There will be no relationship between COVID exposure and level of partisan difference in attitudes.

Now we ask: What might override strong social identities? Our overarching expectation is that the pandemic experience—perhaps individual exposure to COVID-19, or local caseloads and death counts—can push individuals in their political identities and policy positions *or* can metastasize existing policy views and further entrench individuals in their priors. As exposure to disease forces individuals to confront the reality of the pandemic, and their own mortality, they may also reevaluate whether that reality aligns or conflicts with their worldview.

Disease outbreaks have psychological impacts on individuals as people are exposed to information about the disease, even among those who do not become sick. COVID-19 had just this impact. As infection rates and death tallies climb, there is an aggregate increase in worries and concerns (Gallup, 2021; Jurkowitz, 2021), and people in counties with higher death counts report greater health concerns related to COVID-19, regardless of political identification (Pew Research Center, 2020). These concerns are not only about the threat of becoming infected but also a reminder of death and human finitude (Silva et al., 2021). Here, we consider two explanations for how exposure to COVID-19 might shape public-policy attitudes: pathogen avoidance (PA), which predicts attitudinal change, specifically in a conservative direction, and terror management (TMT), which predicts attitudinal divergence as a consequence of exposure.

PA theories are situated in an evolutionary framework, proposing that humans developed a series of adaptive mechanisms to minimize the exposure to disease (Schaller, 2006; Schaller & Park, 2011). Specifically, the behavioral immune system is activated by cues indirectly signaling the existence

of pathogens, which in turn trigger a series of emotional reactions, like disgust; cognitions such as focusing on disease-related thoughts; and behaviors, such as avoidance or rejection. To wit, a series of recent studies have found higher avoidance-related traits, such as disgust sensitivity or perception of vulnerability to disease, are associated with increased COVID-related concerns and more frequent protective behaviors (Bacon & Corr, 2020; Shook et al., 2020). Similarly, higher perceived vulnerability to disease during the pandemic is linked to higher anxiety, more vigilant behaviors, and fewer social interactions and trips to grocery stores, after controlling for personality traits (Makhanova & Shepherd, 2020).

Political and social leaders use the threat of contamination and disease to differentiate between which groups are worthy of help and rights and draw boundaries around who is part of the political community, advocating for more socially conservative policies. Studies in the context of COVID-19 have shown an increase in conservative and right-leaning views, such as traditional gender values (Rosenfeld & Tomiyama, 2021) as well as prejudice and xenophobia (Croucher et al., 2020; Dhanani & Franz, 2021). Building on these insights, we hypothesize that being exposed to COVID-19 will be associated with support for more conservative policies (*conservative shift hypothesis*). Individuals become more risk-averse and deferential to authority, both of which align with a conservative shift to positions on the political right (as economic protectionism, stronger surveillance measures, and harder immigration control).

H1: Higher levels of exposure to COVID-19 will correspond to more conservative views overall: That is, both Republican and Democrats will be more supportive of conservative policies as exposure to COVID-19 rises.

By contrast, TMT predicts that the existential threat of death leads individuals not to update their views but to hunker down and protect their predispositions, meaning that threats should lead to an *entrenchment* and *divergence* across preexisting policy preferences. TMT (Greenberg et al., 1990; Rosenblatt et al., 1989) proposes that the death awareness produces generalized outgroup hostility by propping up views of the ingroup, self-esteem (Solomon et al., 1991), and derogation of outsiders (Castano et al., 2002; Greenberg & Kosloff, 2008; Reiss & Jonas, 2018). From a motivational perspective, when people are reminded of their own mortality, they are more likely to desire to punish more severely those who violate their worldview (Rosenblatt et al., 1989) or who threaten their cultural values (Greenberg et al., 1990).

During the COVID-19 pandemic, individuals with increased attention to disease-related news are more attuned to death than they would otherwise be (Mitchell & Baxter, 2020). Moreover, after the declaration of COVID-19 as a national emergency, there was an increase in death-related search terms (i.e., cemetery, bury, death) on social media and in Internet searches (Evers et al., 2021). Prior evidence from the Ebola and Zika virus crises shows that information related to the ongoing health crises triggers more death-related thoughts, increasing worldview defense (Arrowood et al., 2017) as well as polarization of trust in scientists (Safford et al., 2017).

Because TMT proposes that death awareness motivates greater aversion to outgroups, it follows that political conflict will be also affected by mortality salience. Death awareness (Greenberg et al., 1992) and family death experiences (Chatard et al., 2010) motivate greater dislike for outgroups, leading to more extreme moral judgments among liberals and conservatives (Bassett et al., 2015). Greater exposure to COVID-19 may heighten these distinctions further (*partisan divergence hypothesis*).

H2: Higher levels of exposure to COVID-19 will correspond to greater partisan differences between Democrats and Republicans: That is, Republicans will be more supportive of conservative policies, and Democrats more supportive of liberal policies, as exposure to COVID-19 rises.

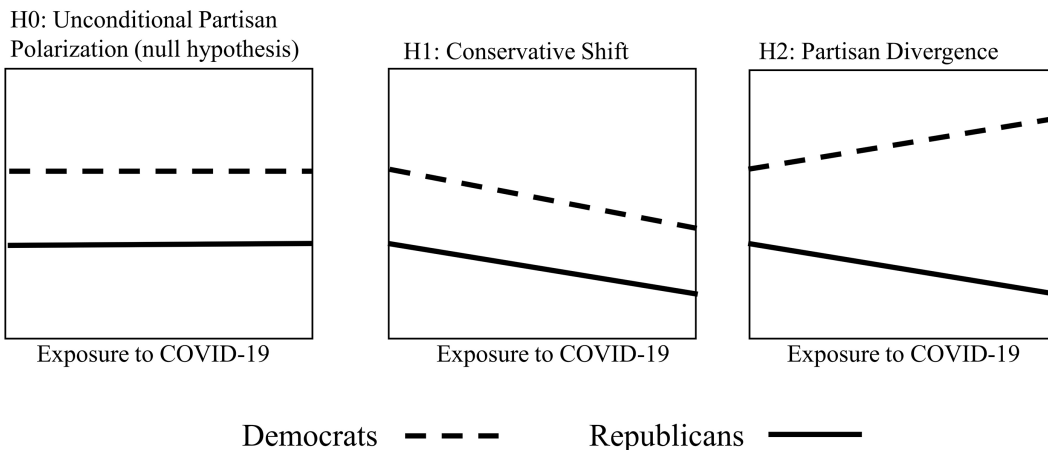


Figure 1. Visual representation of the hypotheses. The Y-axis represents the support for policies typically endorsed by Democrats.

Figure 1 summarizes these hypotheses.

DATA AND METHODS

Our study draws on three waves of a nationally representative panel survey of Americans, conducted by the polling company YouGov. Our first survey wave (Wave 1) included 3,000 participants from YouGov’s panel of respondents matching a sampling frame on gender, age, race, and education based on the 2016 American Community Survey and weighted using propensity scores.

Wave 1 of the survey was fielded between March 20 and 23, 2020, as the COVID-19 crisis had begun to produce state-wide lockdowns in the United States. Wave 2 was fielded between April 20 and May 5, when some states began to ease restrictions ($n = 2,401$, response rate = 80%). Wave 3 was fielded from June 6 to 25, as cases began to spike once again in states such as Arizona, California, and Florida ($n = 2,104$, response rate = 87.6%).¹ The three waves therefore capture Americans’ views on responding to COVID-19 at three very different moments in the course of the pandemic (see AMJC, 2021; Thebault et al., 2021 for detailed timelines of the events in this time frame). It also exposed patterns of significant regional heterogeneity over time, which we exploit to study whether exposure exacerbated or overrode attitudinal priors.

We operationalized exposure to COVID-19 in three ways: having a family member or oneself infected with COVID-19, number of cases within a state, and number of deaths by states. We use state-level count of casualties and infection cases as an indirect measure of exposure to the virus. Recent studies have shown how actual local COVID-related statistics (death and infection rates) were significantly correlated with concerns about the virus (Ruisch et al., 2021), avoidance behaviors (Schmidt et al., 2021), and survival concerns (Greenfield et al., 2021). Variation in conditions over time across and within

¹We analyzed the pattern of attrition across waves in order to check for differential follow-up across survey waves. A full discussion can be found in the online supporting information. Our analyses reveal differential rates of attrition, particularly with respect to demographic covariates that are not our main theoretical interest, in particular marital status and employment status. We do find that in Wave 3, Democrats dropped out of the sample more frequently than Republicans. However, our main analyses use only complete cases across the three samples, and we account for differential responses across groups using population weights. This increases our confidence that our results are not due to differential partisan patterns in attrition across waves.

states produced variation in risk perception and death awareness (Pyszczynski et al., 2021).² We therefore hold that respondents in states relatively more affected by COVID-19, in terms of cases and related deaths, are exposed to more cues that increase death awareness.

Before proceeding, we acknowledge the limitations of our approach. We lack precise and direct measures of mortality salience and death exposure, as well as potential mechanisms for PA to move opinion, for example, through disgust. What we do here instead is use these social psychological theories that predict attitude directionality (conservative shifts versus continuity) *to descriptively map continuity or change*, not test the mechanisms for *how these outcomes occur*. And while we use three different, triangulating measures of exposure (see below) *to establish* but not directly measure threat, our results must be interpreted with the caveat that more precise and direct measures of mortality salience and death exposure might yield different results.

Measures

COVID-19 Exposure

We measure exposure to COVID-19 using three different metrics. First, using publicly available data provided by the *New York Times*, we calculated the (1) cumulative number of deaths due to COVID-19 and (2) the cumulative number of positive cases of coronavirus infection for each state during the time of data collection for each wave. Third, Waves 2 and 3 of the survey included two questions of self-reported direct exposure to COVID: asking “Have you had COVID-19, either currently or in the past?” and “Do you have a friend or family member affected by COVID-19?” Responses were collapsed in a single, dichotomous variable, where participants were counted as having direct exposure if they responded “yes” to either question (Wave 2, Yes = 23.78%; Wave 3, Yes = 29.37%)

Party Identification

Participants were asked to situate themselves in a seven-level party-identification item, ranging from “Strong Democrat” to “Strong Republican.” Respondents indicating the two outer alternatives—for example, “Strong Democrat” and “Not very strong Democrat”—were collapsed into one category for each party (39.28% Democrats, 25.83% Republicans, 26.70% Independents, 4.33% Other, 3.93% Not sure). Respondents identified with a third party or as Independents (including Leaners) were excluded from the analysis.

Policy Attitudes

We presented respondents with a list of various policy statements, thematically ranging from topics like health to trade and immigration, each of which was based on proposals and opinions that emerged in the public debate in the United States. The number of statements varied by wave (Wave 1 = 21, Wave 2 = 30; Wave 3 = 19, see [Table 1](#) for the complete list and question wordings). Respondents were asked to indicate their agreement on a 5-point Likert scale.

As these policies spanned a variety of subjects—from health to executive power consolidation—we begin exploring whether there is a latent structure to policy support using exploratory factor analysis. It produced a set of three policy preference clusters: (1) welfare policies; (2) national control policies; and, (3) extreme policies, that is, items we identify as ultimatums and democratic lines in the sand. [Table 1](#) denotes which policies fall into each dimension and on which waves those items appeared.

²Counts of deaths and cases were used to facilitate the interpretation of the results. We replicated the analyses using death and cases rate by 100,000 inhabitants, and the patterns of results were similar (see the online supporting information)

Table 1. Policy Statements and Waves that included them

	W1	W2	W3
<i>Welfare policy responses</i>			
We have enough coronavirus tests in my state (R).	•	•	•
The government should close all schools in order to contain the spread of coronavirus.	•	•	
The government should make all testing for coronavirus free for all Americans.	•	•	•
The government should waive insurance costs and hospital fees for treating coronavirus.	•	•	•
The government should grant paid leave to anyone diagnosed with coronavirus to encourage them to stay home until they are fully healthy.	•	•	•
Sporting and other public events should continue to take place. Cancelling hurts local businesses and is bad for morale. (R)	•	•	
The United States must strengthen its economic ties and increase trade with other countries in order to strengthen our economy.	•	•	•
The government should ban public events in order to contain the spread of coronavirus.	•	•	•
State governments and governors should lead policy responses and decide how best to fight coronavirus in their state.	•	•	
The federal government should direct American companies to produce necessary medical equipment (e.g., tests, ventilators, masks).		•	
Americans should be given the opportunity to vote-by-mail as an alternative to voting in person.		•	•
<i>National Control policy responses</i>			
Elected leaders have a right to investigate their political opponents.		•	
The United States must increase taxes on foreign imports in order to stimulate the growth of our own domestic industry.	•	•	
The United States should not be so reliant on other countries, but should make more things at home.	•	•	•
The United States must halt <i>all</i> international air travel.	•	•	
The United States must continue to ban the entry of citizens of [<i>China/Italy/Great Britain</i>] into the United States. [<i>randomize choice</i>].	•	•	•
The United States should impose entry restrictions at the U.S.-Mexico border to control the spread of the coronavirus in the United States.	•	•	
The President should be given more powers to address the crisis quickly, without Congressional oversight or other Washington politics.		•	•
We need to come together in a time of crisis. Criticizing the people in charge and questioning their decisions only divides us further.		•	•
The news media are allowed too much freedom in criticizing elected leaders.		•	•
<i>Extreme measure responses</i>			
Elections should be delayed [if it means protecting people][because a crisis is not the time for politics].	•	•	•
The federal government should take over businesses and private property, where necessary, to safeguard American public health.		•	
The government should monitor people’s movement by collecting cell phone information.		•	•

The welfare factor (Cronbach’s $\alpha = .78$) has questions related to governmental support in terms of health care, paid leave, and measures actively involving the federal government in minimizing the risk of contagion (“The government should ban public events in order to contain the spread of coronavirus”). Some of these items (closing school, cancelling sports, ban public events, and producing medical equipment) sound like types of restriction, not welfare, but observe that each contains a type of care frame (mentioning coronavirus, connotating children, alluding to morale), indicating why respondents group this with welfare and not acts of national control.

By contrast, the national control factor (Cronbach’s $\alpha = .77$) includes measures that suggest support for autocratic consolidation and use of power by the federal government. These include antiglobal positions on policies like trade and immigration, as well as support for undermining traditional democratic

institutions (free press, checks and balances, accountability). Specifically, trade items make references to policies like tariffs and import substitution, which are traditional economic strategies of autocratic regimes, while anti-immigration policies is a hallmark authoritarian and populist signature policy.

Last, the extreme-measures factor (Cronbach's $\alpha = .66$) captures support for civil liberties restrictions such as suspending core liberal democratic rights: voting, autonomy, and private property. "Delaying elections" echoed real rhetoric of then-President Trump at the time, about the need to delay elections due to the pandemic. Likewise, government monitoring of cellphones (i.e., contract tracing without invoking the policy name) might be viewed as either government interference in individuals' private lives or as a technological solution to an acute policy problem. Trump's political positions did not fit squarely into a traditional liberal-conservative ideological frame, but given Trump's role as head of the conservative party, these policy positions were imbued with an extreme valence in context of the pandemic.

How should we interpret support for these factors, given our theoretical expectations? Taken in isolation, some of the policy items do not map cleanly onto a liberal-conservative ideological dimension (e.g., "the government should ban public events in order to contain the spread of coronavirus"), but collectively they capture a central policy divide in the COVID crisis. Greater support for welfare policies, in the context of the COVID-19 pandemic, is a Democratic position. Greater support for national control policies, in the context of the COVID-19 pandemic, is a Republican position. And extreme measures—the most heterogeneous of all measures—are difficult to map cleanly onto a single ideological dimension, so we refrain from interpreting support for such measures as inherently conservative or liberal (and indeed, our results will show that partisans are divided on this dimension are small).

We therefore operationalize our theory by examining greater or reduced support for each factor, where, for example, Democrats may—consistent with Hypothesis 1—decrease support for welfare and care policies and increase support for national control or—consistent with Hypothesis 2—increase support for welfare policies, consistent with prepandemic policy orientation preferences. For reasons described just above, we do not make predictions about how Hypotheses 1 and 2 relate to support for extreme measures. Respondents' scores for each factor were derived from factor analytic models (for further technical details, see Factor Analysis section in the online supporting information).

RESULTS

We model the relationship between partisan identity and policy preferences (*Welfare*, *National Control*, and *Extreme Measures*) across states and survey waves. We employ on a multilevel modeling approach that allows us to flexibly capture both individual and contextual factors, as well as the interactions among them.

Statistical Framework

Our main estimating equation is a multilevel random-effects model with cross-level interactions. We start with a level-1 model in which individual responses Y_{ist} , where i indexes individuals, s indexes states, and t indexes time (or wave), are a function of partisanship and wave, plus covariates X_{ist} (age, gender, ethnicity, and education) and error:

$$Y_{ist} = \beta_{0j} + \beta_{1j} \text{Partisanship}_{ist} + \beta_{2j} \text{Wave}_{ist} + \beta_{3j} \text{Partisanship}_{ist} \times \text{Wave}_{ist} + X_{ist} + \varepsilon_{ist} \quad (1)$$

The intercept and each of the slope parameters, in turn, are a function of state-level COVID prevalence:

$$\begin{aligned}
\beta_{0j} &= \gamma_{00} + \gamma_{01} \text{COVID} + \eta_{0j} \\
\beta_{1j} &= \gamma_{10} + \gamma_{11} \text{COVID} + \eta_{1j} \\
\beta_{2j} &= \gamma_{20} + \gamma_{21} \text{COVID} + \eta_{2j} \\
\beta_{3j} &= \gamma_{30} + \gamma_{31} \text{COVID} + \eta_{3j}
\end{aligned} \tag{2}$$

Substituting (2) into (1), we then have

$$\begin{aligned}
Y_{ist} &= \gamma_{00} + \gamma_{01} \text{COVID} + \eta_{0j} \\
&\quad + (\gamma_{10} + \gamma_{11} \text{COVID} + \eta_{1j}) \text{Partisanship}_{ist} \\
&\quad + (\gamma_{20} + \gamma_{21} \text{COVID} + \eta_{2j}) \text{Wave}_{ist} \\
&\quad + (\gamma_{30} + \gamma_{31} \text{COVID} + \eta_{3j}) \text{Partisanship}_{ist} \times \text{Wave}_{ist} \\
&\quad + X_{ist} + \varepsilon_{ist} \\
&= \gamma_{00} + \gamma_{01} \text{COVID} + \gamma_{10} \text{Partisanship}_{ist} + \gamma_{11} \text{COVID} \times \text{Partisanship}_{ist} \\
&\quad + \eta_{1j} \text{Partisanship}_{ist} + \gamma_{20} \text{Wave}_{ist} + \gamma_{21} \text{COVID} \times \text{Wave}_{ist} \\
&\quad + \eta_{2j} \text{Wave}_{ist} + \gamma_{30} \text{Partisanship}_{ist} \times \text{Wave}_{ist} \\
&\quad + \gamma_{31} \text{COVID} \times \text{Partisanship}_{ist} \times \text{Wave}_{ist} \\
&\quad + \eta_{3j} \text{Partisanship}_{ist} \times \text{Wave}_{ist} \\
&\quad + X_{ist} + \eta_{0j} + \varepsilon_{ist}
\end{aligned} \tag{3}$$

Because substantive quantities of interest can be difficult to infer from complex interactive models such as this, we adopt a graphical approach to test our hypotheses, plotting the predicted values of our outcome variables and their associated confidence intervals across the observed values of our exposure variables, separating out predictions by party and survey wave.³

Welfare Policies

We test our null hypothesis—exposure has no substantive impact on policies—against a *conservative shift* hypothesis—supported by PA theories—that exposure will push all respondents towards more conservative positions, and a *partisan divergence* hypothesis—supported by TMT—that exposure will increase partisan differences in policy attitudes.

We modeled support for welfare policy statements, using alternatively our three operationalizations of exposure to COVID-19. Results for the three regressions can be found in [Table 2](#) (see Table S4 in the online supporting information for complete estimates for all models). In each case, we start with models that operationalize exposure using state death toll.

As expected, we find that Republicans reported less support for welfare policies than Democrats on average. We also find that the deaths toll is slightly yet significantly correlated with support for welfare policies ($b = .02$, $t_{(483)} = 2.25$, $p = .025$, 95% CI [.00, .03]), suggesting that participants in states with higher casualties reported slightly higher support for welfare policies. In average, the size of relationship also decreases over time, as shown by the time \times death interaction term ($b = -.01$, $t_{(483)} = -2.20$, $p = .028$, 95% CI [-.02, -.00]). However, we find no significant differences of this association by party ($b = -.01$, $t_{(483)} = -1.18$, $p = .239$, 95% CI [-.04, .01]), nor does this association vary over time ($b = .01$, $t_{(483)} = 1.55$, $p = .121$, 95% CI [-.00, .03]). Visual inspection of plotted margins (see [Figure 2](#)) reveals little variation in slopes

³Mindful of the dangers of extrapolation, we only calculate these predictions for the observed ranges of our exposure variables in each wave. In doing so, we avoid the risk that—for example—predictions made from maximum observed levels of COVID-19 exposure in Wave 3 would shape our predictions about exposure in Wave 1.

Table 2. Multilevel Linear Mixed Models Predicting **Support for Welfare Policies** by Waves, Party Identity, and Type of Exposure to COVID-19 (Controlling for Individual- and State-Level Random Effects and Adjusted Population Weights).

Predictors	Death Toll (State)				COVID-19 Cases (State)				Direct Exposure			
	<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>
(Intercept)	.20	.06	.09 to .31	<.001	.14	.08	-.02 to .30	.093	.26	.04	.17 to .34	<.001
Wave	.13	.05	.04 to .22	.005	.17	.07	.03 to .31	.016	.06	.01	.03 to .09	<.001
Party (1 = Republican)	-.44	.08	-.61 to -.28	<.001	-.40	.12	-.63 to -.16	.001	-.53	.06	-.66 to -.41	<.001
Party × Wave	-.23	.07	-.36 to -.10	.001	-.29	.11	-.50 to -.08	.007	-.15	.02	-.19 to -.11	<.001
Deaths (log)	.02	.01	.00 to .03	.025								
Deaths (log) × Wave	-.01	.01	-.02 to -.00	.028								
Deaths (log) × Party	-.01	.01	-.04 to .01	.239								
Deaths (log) × Party × Wave	.01	.01	-.00 to .03	.121								
Cases (log)					.02	.01	-.00 to .03	.063				
Cases (log) × Wave					-.01	.01	-.02 to .00	.052				
Cases (log) × Party					-.01	.01	-.04 to .01	.385				
Cases × Party × Wave					.01	.01	-.00 to .03	.149	.28	.08	.13 to .44	<.001
Direct Exposure (1 = Yes)									-.08	.03	-.14 to -.03	.004
Exposure × Wave									-.09	.14	-.35 to .18	.512
Exposure × Party									.08	.05	-.02 to .17	.103
Exposure × Party × Wave									4,845			
Observations	4,845				2,687,842				4,506			
Marginal R^2 /Conditional R^2	.268/.844				.268/.842				.301/.836			

Bold values indicate $p < .05$

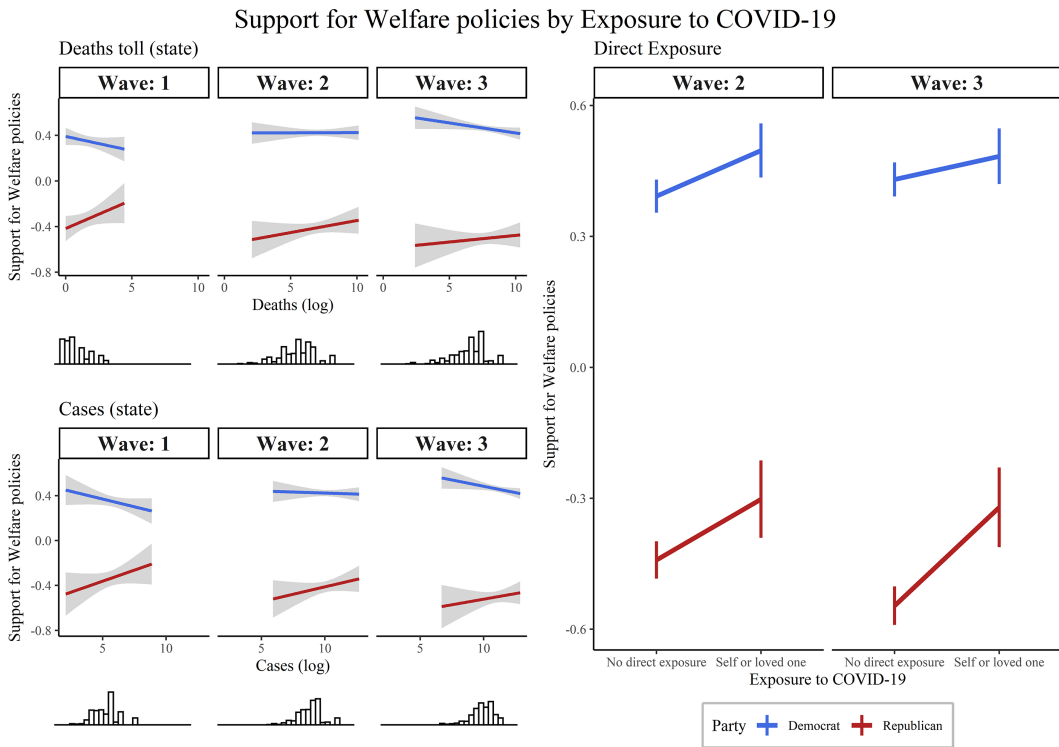


Figure 2. Predicted values for welfare policies by party, exposure, and waves.

over time (time × death interaction). However, partisan differences do increase over time, as the gap between the lines widens (time × party interaction, $b = -.23$, $t_{(483)} = -3.28$, $p = .00$, 95% CI [-0.36, -0.10]).

The number of confirmed cases of COVID-19 by the time of the survey is not significantly correlated with welfare policy support ($b = .02$, $t_{(483)} = 1.86$, $p = .063$, 95% CI [-0.00, .03]), neither alone or in interaction with party identity ($b = -.01$, $t_{(483)} = -.87$, $p = .385$, 95% CI [-0.04, .01]) or time ($b = -.01$, $t_{(483)} = -1.94$, $p = .052$, 95% CI [-0.02, .00]). Figure 2 shows the marginal effects by wave, revealing that the pattern of influence of COVID-19 cases on welfare policies resembles the trends that we uncovered when using death tolls to measure exposure, even as it does not reach statistical significance.

Finally, the experience of being sick of COVID-19 or having a close friend or family member sick with COVID-19 is correlated with support for welfare policies ($b = .28$, $t_{(4493)} = 3.52$, $p < .001$, 95% CI [.13, .44]), yet this correlation decreases over time ($b = -.08$, $t_{(4493)} = -2.92$, $p = .004$, 95% CI [-0.14, -0.03]). We find no differences in experience by partisan identification, either alone or in the three-way interaction with time (time × party × exposure). As suggested by Figure 2, the associations seem to be driven by the differences in exposure between Democrats in Wave 2 and in Republicans in Wave 3.

National Control Policies

As expected, we find that Republicans reported, on average, more support for national control policies than Democrats. We also find that a negative main effect for COVID deaths ($b = -.10$, $t_{(438)} = -10.86$, $p < .001$, 95% CI [-0.11, -0.08]) which, in turn, is qualified by time ($b = .04$, $t_{(438)} = 7.16$,

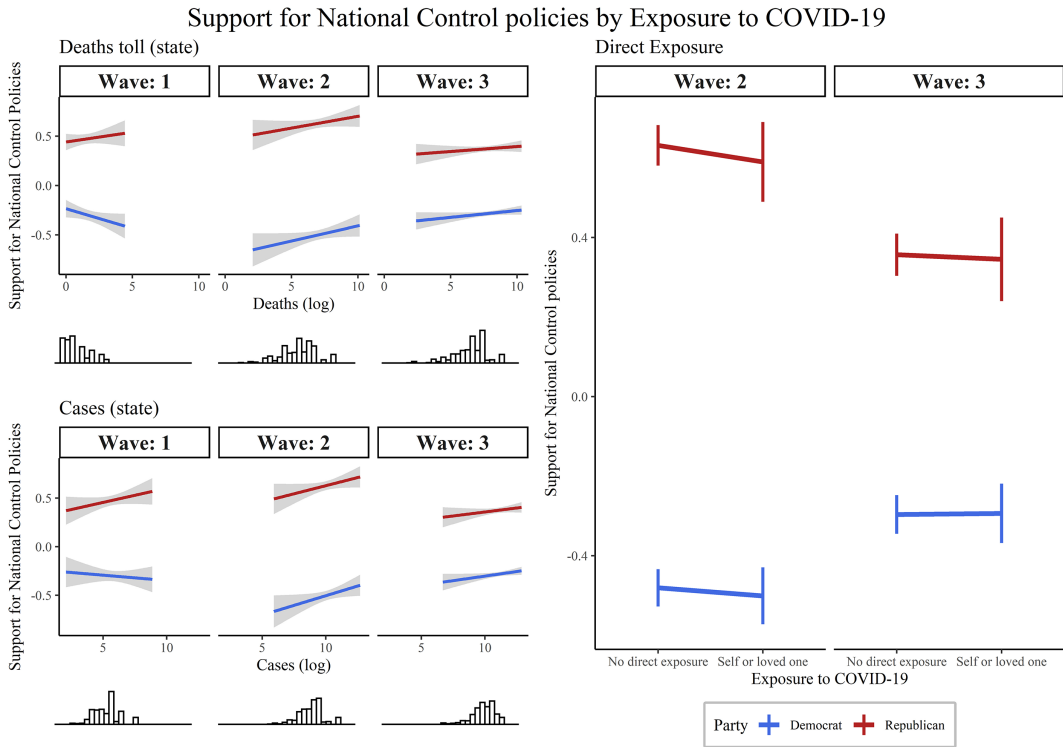


Figure 3. Predicted values for National Control policies by party, exposure, and waves.

$p < .001$, 95% CI [.03, .05]) and differs by party ($b = .20$, $t_{(438)} = 15.31$, $p < .001$, 95% CI [.17, .22]). These coefficients suggest that as state-level death numbers increase, support for national control policies decrease, but the size of this association declines over time (death \times time interaction). Also, the large interaction term (death \times party interaction) suggests that for Republicans, the correlation with deaths is positive—but note that this coefficient implicitly evaluates this difference at a “Wave 0,” which does not appear in our data. Finally, the three-way interaction term is also significant ($b = -.07$, $t_{(438)} = -9.35$, $p < .001$, 95% CI [-.09, -.06]), which implies that the interactive effect of party and death declines over time. [Figure 3](#) shows how the patterns for Democrats and Republicans evolved over the three waves: Only in Wave 1 do we see evidence consistent with the partisan-divergence hypothesis.

Using the number of COVID-19 cases in a state showed a similar pattern of conditional associations: Higher numbers of cases are correlated with lower support for national control ($b = -.11$, $t_{(438)} = -10.84$, $p < .001$, 95% CI [-.13, -.09]), but this correlation shrinks over time ($b = .04$, $t_{(438)} = 7.51$, $p < .001$, 95% CI [.03, .06]) and differs for Republicans ($b = .24$, $t_{(438)} = 15.68$, $p < .001$, 95% CI [.20, .26]). Similarly, the three-way interaction term suggest that this pattern evolves over the three waves ($b = -.08$, $t_{(438)} = -9.20$, $p < .001$, 95% CI [-.10, -.06]), as [Figure 3](#) reveals.

We find no relationship between individual experience and support for national control policies ($b = -.02$, $t_{(2957)} = -.61$, $p = .543$, 95% CI [-.09, .05]), nor do the interactions suggest any type of conditional relationship (all b s $< .04$; all p s $> .500$; see [Table 3](#) for brief regression summary and [Table S5](#) in the online supporting information for complete coefficients).

In all, these results for national control policies do not support either conservative convergence nor the partisan-divergence hypotheses; that is, exposure is unrelated to the degree of partisan

Table 3. Multilevel Linear Mixed Models Predicting **Support for National Control Policies** by Waves, Party Identity, and Type of Exposure to COVID-19 (Controlling for Individual- and State-Level Random Effects and Adjusted Population Weights).

Predictors	Death Toll (State)					COVID-19 Cases (State)					Direct Exposure				
	<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>		<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>		<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>	
(Intercept)	-.11	.06	-.22 to .00	.055		.37	.09	.20 to .54	<.001		-.79	.01	-.98 to -.61	<.001	
Wave	-.10	.04	-.18 to -.02	.016		-.29	.06	-.42 to -.17	<.001		.18	.02	.14 to .23	<.001	
Party (1 = Republican)	.48	.08	.32 to .64	<.001		-.49	.12	-.73 to -.24	<.001		2.07	.08	1.92 to 2.23	<.001	
Party × Wave	.11	.06	-.01 to .22	.082		.42	.10	.22 to .61	<.001		-.47	.03	-.53 to -.41	<.001	
Deaths (log)	-.10	.01	-.11 to -.08	<.001											
Deaths (log) × Wave	.04	.01	.03 to .05	<.001											
Deaths (log) × Party	.20	.01	.17 to .22	<.001											
Deaths (log) × Party × Wave	-.07	.01	-.09 to -.06	<.001											
Cases (log)						-.11	.01	-.13 to -.09	<.001						
Cases (log) × Wave						.04	.01	.03 to .06	<.001						
Cases (log) × Party						.23	.01	.20 to .26	<.001						
Cases × Party × Wave						-.08	.01	-.10 to -.06	<.001						
Direct Exposure (1 = Yes)											-.02	.03	-.09 to .05	.543	
Exposure × Wave											.02	.04	-.06 to .10	.570	
Exposure × Party											-.00	.06	-.12 to .11	.955	
Exposure × Party × Wave											.04	.07	-.09 to .18	.547	
Observations	4,845					4,845					2,968				
Marginal <i>R</i> ² /Conditional <i>R</i> ²	.285/.797					.285/.799					.405/.779				

Bold values indicate *p* < .05

differences in health policy attitudes in Waves 2 and 3. These results instead are consistent with the null hypothesis, confirming the enduring strength role of social identity.

Extreme Measures

State-level COVID-19 deaths are correlated with the support for extreme measures ($b = .04$, $t_{(483)} = 4.06$, $p < .001$, 95% CI [.02, .05]), and this correlation does not vary across waves (death \times time interaction: $b = -.01$, $t_{(483)} = -1.32$, $p = .185$, 95% CI [-.02, .00]). This correlation does vary by party ($b = -.11$, $t_{(483)} = -8.95$, $p < .001$, 95% CI [-.14, -.09]) and changed over time, as the three-way interaction shows ($b = .04$, $t_{(483)} = 4.70$, $p < .001$, 95% CI [.02, .06]). The margins plots from Figure 4 reveal that in Wave 1, Republicans were more likely to support extreme measures in the context of higher numbers of COVID cases, but by Wave 3 partisan differences have disappeared. By Wave 3, higher death counts are associated with more support for extreme measures for both parties, but these differences across levels of exposure are not statistically significant (Table 4).

We find similar results using state-level cases as the measure of exposure: As cases increase, support for extreme measures, on average, increases ($b = .04$, $t_{(483)} = 4.26$, $p < .001$, 95% CI [.02, .06]). This association does not vary over time ($b = -.01$, $t_{(483)} = -1.08$, $p = .279$, 95% CI [-.02, .01]), but it does by party ($b = -.13$, $t_{(483)} = -9.09$, $p < .001$, 95% CI [-.16, -.10]). The three-way interaction is also significant, suggesting that the differences in the slopes change over time.

Experiencing the disease personally or by a loved one is associated with higher support for extreme measures to fight COVID-19 ($b = .19$, $t_{(2957)} = 2.10$, $p = .036$, 95% CI [.01, .37]), and this correlation did not vary over time (exposure \times time interaction: $b = -.11$, $t_{(2957)} = -.69$, $p = .491$, 95% CI [-.42, .20]). The association with direct exposure was larger for Democrats than for Republicans ($b = -.07$, $t_{(2957)} = -2.04$, $p = .042$, 95% CI [-.14, -.00]), and this relationship did not vary over time ($b = .07$, $t_{(2957)} = 1.09$, $p = .278$, 95% CI [-.05, .18]). Visual inspection of the predicted values reveals that between Waves 2 and 3, both parties tended to converge, but

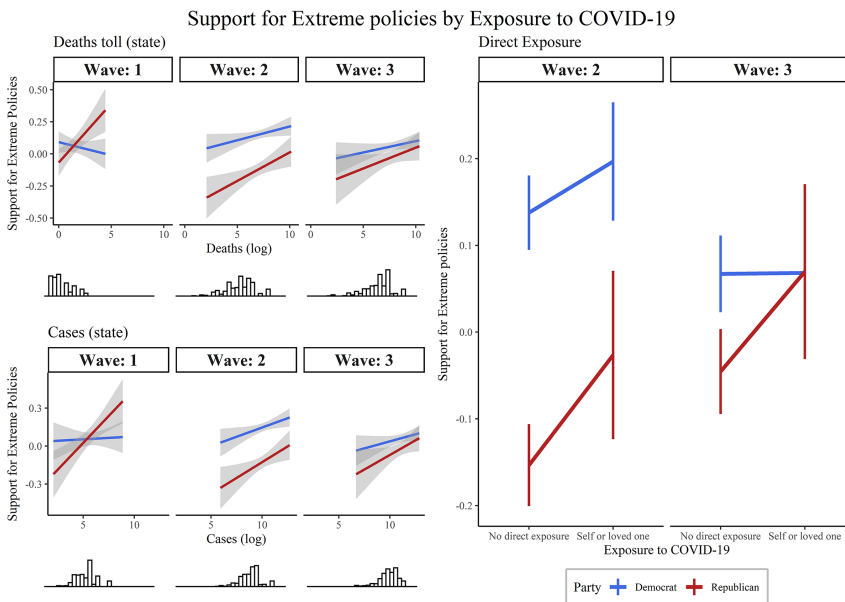


Figure 4. Predicted values for extreme measures by party, exposure, and waves.

Table 4. Multilevel Linear Mixed Models Predicting **Support for Extreme Measures** by Waves, Party Identity, and Type of Exposure to COVID-19 (Controlling for Individual- and State-Level Random Effects and Adjusted Population Weights).

Predictors	Death Toll (State)					COVID-19 Cases (State)					Direct Exposure				
	<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>		<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>		<i>b</i>	<i>SE</i>	<i>CI</i>	<i>p</i>	
(Intercept)	.20	.10	-.00 to .04	.005		.02	.09	-.22 to .27	.840		.49	.10	.30 to .67	<.001	
Wave	.00	.05	-.09 to .09	.999		.03	.08	-.12 to .18	.694		-.07	.02	-.10 to -.04	<.001	
Party (1 = Republican)	.33	.09	.16 to .51	<.001		.90	.13	.65 to 1.15	<.001		-.60	.07	-.73 to -.47	<.001	
Party × Wave	-.17	.07	-.31 to -.03	.016		-.40	.11	-.63 to -.18	<.001		.18	.02	.13 to .23	<.001	
Deaths (log)	.04	.01	.02 to .05	<.001											
Deaths (log) × Wave	-.01	.01	-.02 to .00	.104											
Deaths (log) × Party	-.11	.01	-.14 to -.09	<.001											
Deaths (log) × Party × Wave	.04	.01	.03 to .06	<.001											
Cases (log)						.04	.01	.02 to .06	<.001						
Cases (log) × Wave						-.01	.01	-.02 to .00	.124						
Cases (log) × Party						-.13	.01	-.16 to -.10	<.001						
Cases × Party × Wave						.05	.01	.03 to .07	<.001						
Direct Exposure (1 = Yes)											.18	.09	.01 to .35	.039	
Exposure × Wave											-.06	.03	-.12 to .01	.083	
Exposure × Party											-.04	.15	-.33 to .25	.765	
Exposure × Party × Wave											.04	.06	-.07 to .15	.437	
Observations	4,845			4,845							2,968				
Marginal <i>R</i> ² /Conditional <i>R</i> ²	.198/.611			.199/.776							.099/.733				

Bold values indicate *p* < .05

Republican respondents without direct exposure to COVID-19 were the ones with lower endorsement for extreme measures.

Finally, we explored whether the dynamics that we have uncovered might be moderated by state-level differences in partisanship. To do this, we rerun our analyses, interacting Wave, Partisanship, and Exposure with a binary variable that captures whether a state voted for Trump in the 2016 presidential election. We found no systematic differences in our main results between red and blue states, suggesting that our findings do not generally depend on the general political orientation of the state (see details and discussion in the online supporting information).

DISCUSSION

These results paint a nuanced picture of how exposure moderates the partisan politics of COVID-19 in the United States. Our results are not wholly consistent with any single hypothesis derived from the theoretical frameworks: Our inferences depend on how we measure exposure and the types of policies in question.

Our results for support for welfare policies are broadly consistent with the null hypothesis. Taken as a whole, we find no strong relationship between COVID-19 exposure and the strength of partisan differences over welfare policies. We do find that people living in states with greater death counts or family exposure to COVID-19 are more likely to support welfare policies, regardless of their party identity. However, this association declines over time. Moreover, we do find that over time, partisan differences in support for welfare policies grow, which is consistent with partisan divergence but does not appear to be driven by exposure to or experience with COVID-19, as Hypothesis 2 suggests.

We find limited support for Hypothesis 2 in the context of national control policies. Specifically, we find evidence consistent with the partisan-divergence hypothesis in Wave 1, but that exposure-related partisan divergence shrinks over time towards a purely partisan model in which exposure is unrelated to support for national control policies. This is consistent with the experience of the pandemic: the United States entered the summer months, most states dropped COVID emergency orders and reopened their economies, meaning that the salience of the pandemic declined for many Americans.

Results for extreme measures also differ over time: In the earliest waves, we find strong differences across parties associated with high rates of COVID-19 deaths, but by later waves we find no partisan differences at all. As we noted in our theoretical discussion above, however, the absence of clear partisan valence for these more extreme measures means that these are particularly useful for identifying how exposure interacts with partisanship in shaping attitudes about COVID-19 response. Although this finding generally supports the interpretation that when there is no clear partisan valence to policy responses, a global pandemic can overcome partisanship, yet it cannot be interpreted as convergence toward traditional conservative policies.

Conway et al. (2021) suggest that the partisan interpretation of the COVID-19 outbreak should “become less pronounced as the direct experiential impact of the pandemic grows” (p. 8). The pattern of results we have identified in this article suggests that the associations between exposure and attitudes are, however, conditional on the policies involved and the time period in which they are measured: Exposure is more polarizing in the cases of welfare policies, but has little or no relationship with national control policies or extreme measures. Although none of these results should be given a strong causal interpretation given that our data are observational and the contextual factors such as risk are not randomly assigned, these results are inconsistent with an account in which exposure or experience with COVID-19 has robust and systematic relationship with policy preferences.

In terms of the theoretical perspectives that motivated our inquiry, our results are broadly consistent with a purely partisan interpretation of mass policy responses to COVID-19, in which policy

preferences drive partisan differences in health policy attitudes. This pattern—consistent with social identity theory—means that partisans are resistant to change in the face of novel information or experiences. To the extent that we find support for the alternatives theoretical frameworks reviewed here, they are more consistent with TMT than with a focus on conservative shifts as predicted by PA. These findings contribute to the broader debate in social psychology about the tension between these two approaches. Researchers have criticized the concept of conservative shift for suggesting that uncertainty would lead to “political conservatism,” rather than a politically unspecific “psychological conservatism” (Kosloff et al., 2016). Moreover, studies have shown that the effects of death anxiety and uncertainty leading towards conservatism are overridden by making salient personal and social identities (Burke et al., 2013). This is consistent with our results: We almost always find that partisan differences exist, even if their size is sometimes attenuated, when policy measures in question have a clear partisan valence.

Last, our findings are consistent with related research on COVID-19 and health attitudes during the pandemic. Relying on the terror management health model, Courtney et al. (2020) argue that death thoughts triggered by messages that conveyed the risks related to COVID-19 might motivate a threat-avoidant, denialist response or engage in health protective behaviors to decrease death anxiety. Our findings present an additional layer of complexity: People’s political identities may play a crucial role in reinforcing one of the two possible pathways. An avenue for future research could address the question of whether and how partisan cues impact how people deal with anxiety-provoking information about the pandemic.

This study has several limitations. Throughout the study we use exposure to COVID-19 as a proxy for death awareness or mortality salience. Although the present research did not assess directly this connection nor exposure to news coverage about the pandemic, the connection between exposure to COVID-19 and mortality salience has been tackled by other researchers (Evers et al., 2021; Pyszczynski et al., 2021; Silva et al., 2021). Moreover, our varied findings might be a product of the coarseness of our exposure measures (i.e., state-level rates). For instance, Schmidt and colleagues reported effects of both perceived and actual infection rates at the county level on worries about COVID-19 (Schmidt et al., 2021). Further studies using more spatially granular or more direct measures of COVID-19 exposure can be used to examine the robustness of our findings.

In an electoral year and a highly polarized environment, Americans’ political identities were highly salient and consistently reinforced. Interpreting partisanship as the core identity dimension in conflict reveals that outgroup antipathy and ingroup favoritism dominate in the case of COVID-19. But it also reveals the limits of exposure and experience in shaping attitudes: Our most consistent finding is that Democrats support welfare and Republicans support national control, regardless of survey wave or how exposed they are to COVID-19. When a virus is politicized to the extent that COVID-19 has been in the United States, policy attitudes about the virus ultimately are more closely tied to the partisan valence of the dimensions of assessment than to the objective conditions of the pandemic itself. This has troubling implications for the state of American democracy: Even in the context of the worst global pandemic in a century, Americans’ understanding of and reaction to policies designed to mitigate—despite experience—appear to be thoroughly partisan.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

Figure S1. Attrition ratio for demographics categories.

Figure S2. Parallel analyses corresponding to the exploratory factor analyses of Wave 1 ($n = 3,000$) and Wave 2 ($n = 800$).

Figure S3. Robustness analyses: linear mixed models for each item in the constructs present in all three waves.

Figure S4. Support for welfare policies, modeled on death and cases rates, waves and party.

Figure S5. Support for National Control policies, modeled on death and cases rates, waves and party.

Figure S6. Support for extreme measures, modeled on death and cases rates, waves and party.

Figure S7. Support for National Control policies, predicted by case rates, wave, broken by party identity (lines) and state political tendency, according to the 2016 presidential elections.

Figure S8. Histograms of state-level case counts by wave 1 (March 2020), in red and blue states.

Table S1. Attrition Analysis (Wave 2)

Table S2. Attrition Analysis (Wave 3)

Table S3. Factor Loadings and Uniqueness Estimates for Solutions with 2,3 and 4 Factors (Wave 1, $n = 3,000$)

Table S4. Factor Loadings and Uniqueness Estimates for Solutions with 2,3 and 4 Factors (Wave 2, $n = 800$)

Table S5. Comparative Fit Measures and Residuals from Confirmatory Factor Analyses (Waves 2 and 3)

Table S6. Multi-Level Linear Mixed Models Predicting Support for Welfare Policies by Time, Party and Type of Exposure to COVID-19

Table S7. Multi-Level Linear Mixed Models Predicting Support for National Control Policies by Time, Party and Type of Exposure to COVID-19

Table S8. Multi-Level Linear Mixed Models Predicting Support for Extreme Measures by Time, Party and Type of Exposure to COVID-19