The Costs of Polarizing a Pandemic: Antecedents, Consequences, and Lessons

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Abstract

Polarization has been rising in the United States of America for the past few decades and now poses a significant—and growing—public-health risk. One of the signature features of the American response to the COVID-19 pandemic has been the degree to which perceptions of risk and willingness to follow public-health recommendations have been politically polarized. Although COVID-19 has proven more lethal than any war or public-health crisis in American history, the deadly consequences of the pandemic were exacerbated by polarization. We review research detailing how every phase of the COVID-19 pandemic has been polarized, including judgments of risk, spatial distancing, mask wearing, and vaccination. We describe the role of political ideology, partisan identity, leadership, misinformation, and mass communication in this public-health crisis. We then assess the overall impact of polarization on infections, illness, and mortality during the pandemic; offer a psychological analysis of key policy questions; and identify a set of future research questions for scholars and policy experts. Our analysis suggests that the catastrophic death toll in the United States was largely preventable and due, in large part, to the polarization of the pandemic. Finally, we discuss implications for public policy to help avoid the same deadly mistakes in future public-health crises.

Keywords

polarization, psychology, COVID-19, pandemic, politics

> We have it totally under control. It's one person coming in from China. It's going to be just fine.
>
> —Donald Trump, January 22, 2020

> Trump's demonstrated failures of judgment and his repeated rejection of science make him the worst possible person to lead our country through a global health challenge.
>
> —Joe Biden, January 27, 2020

Over the past 4 decades, affective polarization—which denotes the gap between positive feelings for one's political party and disdain for the opposing party—has increased dramatically in the United States (Finkel et al., 2020; Iyengar et al., 2019; Mason, 2018b; but see Fiorina & Abrams, 2008). Although polarization appears to be rising among partisans in many countries around the world, it is more pronounced and increasing faster in the United States than in most other nations (Mounk, 2022). Polarization helps explain why Republicans and Democrats display markedly different reactions to news events—and even disagree on questions that would seem to be basic matters of fact, from crowd size to economics (Bullock et al., 2015; Peterson & Iyengar, 2021; Van Bavel & Pereira, 2018). Unfortunately, polarized beliefs are far more consequential in the domain of public health, in which differences of opinion can have deadly outcomes (Gadarian et al., 2021, 2022; Van Bavel, 2020).

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Since the earliest phase of the COVID-19 pandemic, American leaders have been polarized. While U.S. President Donald Trump (a Republican) publicly downplayed the threat, future President Joe Biden (a Democrat) expressed the dire seriousness of the risk and criticized Trump's leadership. This stark disagreement between political leaders was amplified by other party members, political elites, and media sources (Gadarian et al., 2022). The consequences were dire: According to the Centers for Disease Control (https://covid.cdc.gov/covid-data-tracker/#datatracker-home), COVID-19 has killed more people than any war or public-health crisis in American history (with 1.13 million deaths and one of the highest COVID-19 mortality rates in the world). Moreover, this death toll occurred despite early and widespread access to effective vaccines. We argue that the deadly toll of the pandemic was not inevitable—it was driven, at least in part, by political leaders like Trump, who denied the risks and politicized the pandemic, connecting beliefs and actions to party identity. In this article, we review the antecedents and consequences of polarizing a pandemic and lessons for future pandemics and public-health crises.

From the onset of the COVID-19 pandemic, discussion of the public-health risks was immediately polarized in the United States (Gadarian et al., 2021; Hegland et al., 2022). Republican President Donald Trump repeatedly downplayed the risks of the pandemic, saying that "We have it totally under control" and "The 15 (cases in the US) within a couple of days is going to be down to close to zero" (Keith, 2020). In contrast, Democrats harshly criticized his response, with future President Joe Biden (2020) arguing that Trump was the "worst possible person to lead our country through a global health challenge" in January 2020 (only 6 days after the first case was detected in the United States). Republican leaders and media figures echoed and amplified Trump's messages, whereas Democratic elites focused on the dire risks of COVID-19 and criticized Trump's response. For instance, popular Fox News TV host Sean Hannity called the coronavirus issue a "fraud" perpetrated by the "deep state," and the same network's Trish Regan accused Democrats of using the coronavirus crisis "to destroy and demonize this president." These different partisan messages were reflected in public opinion. In a series of polls during the first few months of the pandemic, far more Democrats were worried that someone in their family could catch the virus compared with Republicans (Van Bavel et al., 2020). These initial beliefs set in motion a polarized response to COVID-19 that persisted throughout the pandemic.

Here, we discuss the role of polarization as a major public-health risk factor during the COVID-19 pandemic in the United States and other nations. We argue that

downplaying and polarizing the pandemic undercut public-health efforts at every stage of the crisis and likely increased infections for millions of people and mortality rates for thousands. We also argue that polarization is a unique health-risk factor (beyond basic science denialism) and likely leads people who would otherwise follow public-health guidelines to distrust authorities and take unnecessary risks. For instance, it can lead to defiant reactions against experts or authorities and attempts to actively undercut public-health advice. Finally, we argue that everyone should care about the health risks of polarization given that COVID-19 and other diseases are transmitted through social contact. Thus, when large numbers of partisans engage in risky behavior, they are more likely to put their friends, family, colleagues, and neighbors at risk (eventually increasing risks for everyone in society). We believe that polarization should be treated as a serious risk factor in the context of future pandemics and other public-health crises.

Impact of Partisanship on the COVID-19 Response

In addition to the polarization of risk perceptions (Van Bavel et al., 2020), there is strong evidence that COVID-19 was polarized for the duration of the pandemic in the United States. In this section, we discuss research on partisan differences in physical distancing, masking, and vaccination. Moreover, we explain how these partisan differences were associated with increased infections and mortality that were predominantly experienced by Republicans (compared with Democrats) as the pandemic unfolded.

Physical distancing

In the early phase of the pandemic, one of the primary public-health recommendations was to decrease movement, stay at home, and avoid crowds. This was intended to reduce exposure to contagious individuals before the availability of effective vaccines. Mirroring polling data on perceptions of risk (Van Bavel et al., 2020), Republicans were less likely to follow social-distancing guidelines than Democrats. Multiple studies found that partisan voting patterns at the state and county levels predicted changes in movement patterns during the COVID-19 pandemic (Allcott et al., 2020; Andersen, 2020; Gollwitzer et al., 2020; Grossman et al., 2020; V. Huang et al., 2020). For example, mobility records from cellphone data were correlated with communications from state governors during the early stages of the pandemic response in the United States (Grossman et al., 2020). Although people reduced their
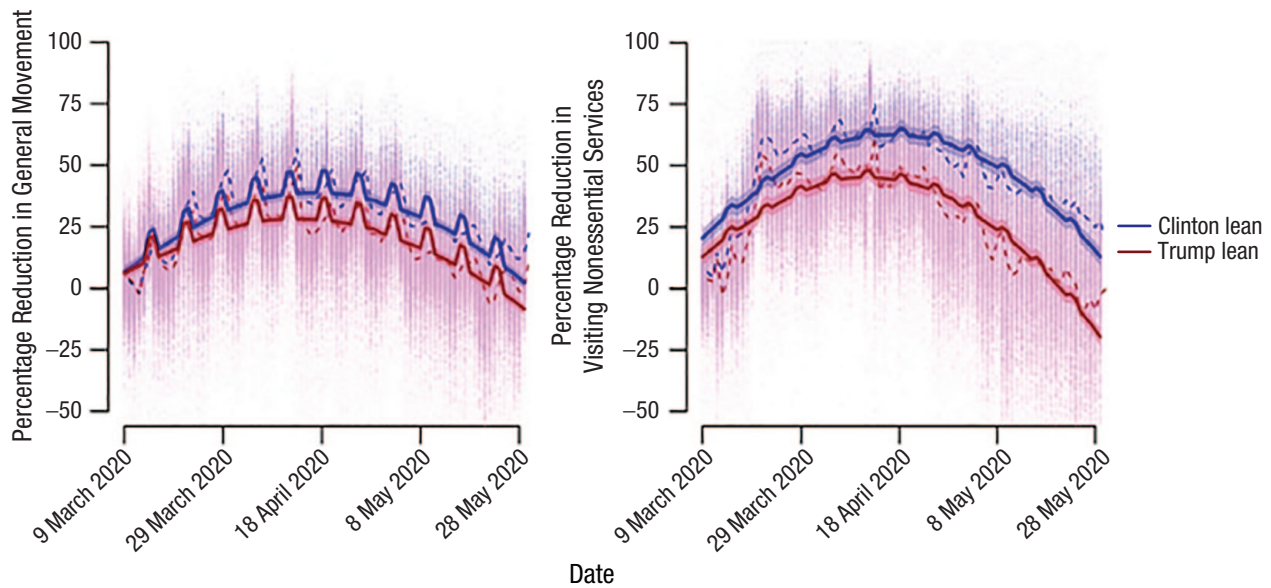
Fig. 1. U.S. counties' average spatial distancing (*y*-axis) as a function of time (*x*-axis) and partisanship. County-level changes in (left) general movement and (right) visiting nonessential services during the first 3 months of the pandemic, plotted as a function of partisanship. Each dot represents one county, dashed lines are empirical means, and bold lines are predictions from statistical models together with 95% prediction intervals. Higher scores on the *y*-axis are associated with greater distancing (adapted from Gollwitzer et al., 2020).

overall mobility following stay-at-home messages, the messages appeared to be more effective in Democratic counties compared with Republican counties.

The partisan gap in spatial distancing was replicated in a subsequent national study that used mobility data from more than 15 million cellphones (Gollwitzer et al., 2020). U.S. counties that voted for Donald Trump (Republican) over Hillary Clinton (Democrat) in the 2016 presidential election exhibited 14% less physical distancing between March and May 2020. Moreover, political partisanship was one of the strongest predictors of physical distancing (i.e., reducing personal travel and visits to nonessential services; see Fig. 1; Gollwitzer et al., 2020). This partisan gap in visits to nonessential services increased over the first few months of the pandemic and remained when stay-at-home orders were active, suggesting that Democrats and Republicans increasingly behaved differently as time went on. This last fact might seem surprising considering that many more cases and deaths were reported to the public during this time—yet behavior became even more polarized. The relationship between partisanship and movement remained significant after adjusting for numerous other factors, including socioeconomic factors, race, religion, employment, and population density of a county.

The partisan gap in spatial distancing also had measurable implications for infections and mortality. Republican counties were more likely to report increased infections and mortality as time passed. If Republican-leaning counties had distanced to the same degree as

their Democratic counterparts, they would have experienced much lower rates of growth in disease and death (Gollwitzer et al., 2020). These data suggest that polarized actions were linked to an increased risk of mortality in pro-Trump counties.

Masking

Wearing masks or other protective face coverings provided a cheap and effective way of reducing spread of COVID-19 during the pandemic: One meta-analysis estimated that masks reduced the odds of coronavirus infection by 72% (Li et al., 2021). Like distancing, masking became highly polarized during the COVID-19 pandemic (Shin et al., 2022). Residents of counties with a large Democratic vote share were more likely to report "frequently" or "always" wearing a mask in public than residents of Republican-leaning counties (Cunningham & Nite, 2021). Consistent with this pattern of polarization, mandates requiring the use of masks reduced the spread of COVID-19 more in Republican-leaning counties than in Democratic-leaning counties (J. Huang et al., 2022). Moreover, Republicans had lower masking intentions and more negative attitudes toward masks and were less willing to share masking pledges on social media compared with Democrats (Gelfand et al., 2022). Thus, voluntary use of masks was aligned with partisan affiliation. A test of multiple interventions designed to increase mask use by leveraging moral and identity-based frames found that such manipulations
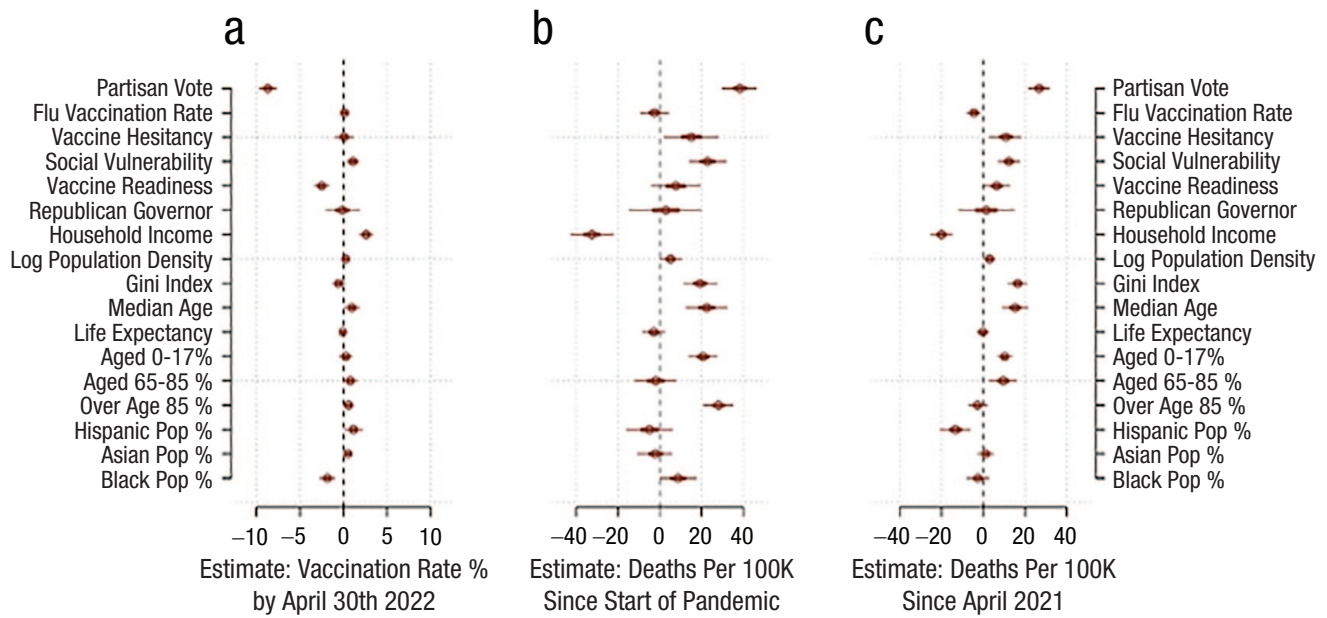
Fig. 2. Vaccination rate predictors. (a) Plot of regression coefficients from multilevel model predicting county-level vaccination rates by April 30, 2022. Partisan was the single biggest predictor of county-level vaccination rate. (b) Plot of regression coefficients from multilevel model predicting county-level cumulative deaths per 100,000 people attributed to COVID-19 since the beginning of the pandemic. (c) Plot of regression coefficients from multilevel model predicting county-level cumulative deaths per 100,000 attributed to COVID-19 since April 2021, when the target of 200 million vaccine doses was achieved. In all figures, dots show the mean posterior estimate, and lines indicate 95% credible intervals. All predictors were standardized and indicate the estimated change in vaccination rates from 1 *SD* change in the predicting variable. Partisanship was coded so that a positive value indicates a county in which more votes were cast for Donald Trump compared with Joe Biden in 2020. All regression models allowed all predictors to vary by state to account for nonindependence in county-level data.

failed to affect masking intentions or attitudes (Gelfand et al., 2022). This underscores the challenge of correcting beliefs after they have been entrenched and polarized (see Chan & Albarracin, 2023).

Vaccination

As the pandemic progressed, the development of safe and effective vaccines promised a return to relative safety (or at least a significantly reduced risk of hospitalization and mortality). Nevertheless, attitudes toward the COVID-19 vaccines were also highly polarized (Dolman et al., 2023; Liu & Li, 2021; H. A. Roberts et al., 2022; Tram et al., 2022). We analyzed the effect of partisanship—defined as the difference between Trump's and Biden's vote shares in the 2020 presidential election—and found that partisanship was by far the strongest predictor of county-level vaccination rates (see Figs. 2a and 3a; see also Sehgal et al., 2022; Ye, 2023). The difference in vaccination rates between an average Republican county and an average Democratic county was 18%. This pattern of partisan vaccination held after adjusting for past flu-vaccination rates, social vulnerability, vaccination readiness, and demographic

variables, including income, age structure, and ethnic makeup. This partisan gap in vaccination appeared to be driven, in part, by misinformation that circulated more prominently in Republican-leaning compared with Democratic-leaning news media and social networks (Fridman et al., 2021; Hagen et al., 2022; Jones-Jang & Chung, 2022; Pennycook et al., 2022; Rathje et al., 2022).

The polarization of COVID-19 had measurable implications for coronavirus death rates (Chen & Karim, 2022; Seghal et al., 2022). We found that county-level partisanship was the biggest single predictor of cumulative deaths since the start of the pandemic and since 200 million vaccine doses were distributed in April 2021 (see Figs. 2b, 2c, 3b, and 3c). After the vaccination program was fully implemented, the estimated difference in death rates between the average Republican-leaning county and the average Democratic-leaning county was 78 people per 100,000. The influence of partisanship on mortality increased following full implementation of the vaccination program—suggesting that partisanship explained increasingly more of the disparity in fatalities between U.S. counties. Using multilevel mediation analysis, we found that the
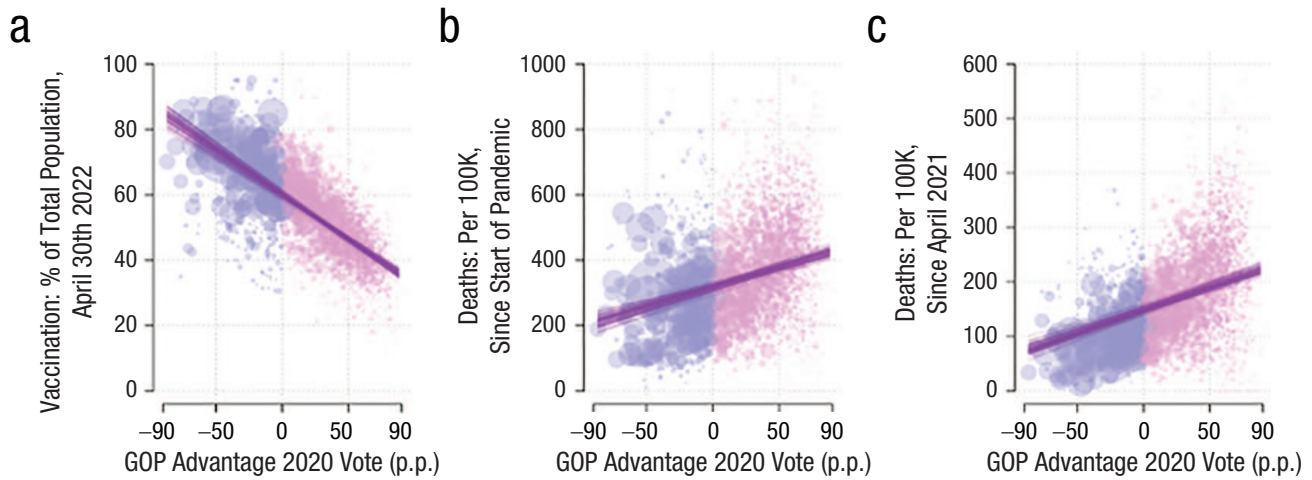
Fig. 3. Partisanship and vaccination rate. (a) Scatter plot showing the strong relationship between partisanship and vaccination rates for U.S. counties. (b) Scatter plot showing relationship between partisanship and cumulative death rates per 100,000 people attributed to COVID-19 since the start of the pandemic for U.S. counties. (c) Scatter plot showing relationship between partisanship and cumulative death rates per 100,000 attributed to COVID-19 since April 2021, when the target of 200 million vaccine doses was achieved, for U.S. counties. Partisanship was coded as the difference between vote share to Donald Trump and Joe Biden in the 2020 U.S. presidential election. Each circle indicates a U.S. county; size proportional to population and color indicate partisan lean (blue = Biden; pink = Trump). Lines show marginal predictions of partisanship from regression models derived from 100 random draws from the posterior distribution of the fitted model.

partisan vaccine hesitancy explained about 20% of the relationship between partisanship and COVID-19 death rates. These results expanded on an analysis of the first 8 months of 2021 during which vaccination rates explained up to 10% of the relationship between partisanship and death rates (Seghal et al., 2022).

In sum, partisanship was related to a wide range of attitudes and behaviors during the COVID-19 pandemic—such that Republicans were substantially less likely than Democrats to engage in physical distancing, mask wearing, or vaccination against the disease. These partisan disparities in various public-health measures were linked to a significantly higher infection and mortality rate in Republican-leaning areas of the country—and this partisan gap in mortality increased over time. More than 1,130,000 people died during the pandemic, and millions more continue to suffer from long-term effects; many of these cases are due to partisan differences in behavior. By one estimate, 234,000 deaths alone could have been prevented with a primary series of vaccination—and 140,400 of these deaths would have been among Republicans (Morabia, 2023). Adding the impact of distancing and masking (and the risk of spreading the disease to others), we estimate that polarization might have been the biggest predictor of cumulative deaths in the United States (or at least one of the biggest predictors; see also Krieger et al., 2022; Wallace et al., 2022). In the next section, we try

to understand the psychology behind this polarized response to COVID-19.

Psychological Antecedents

Studies have suggested that partisan identity is the primary driver of affective polarization in the United States and that policy preferences contribute to affective polarization mainly by signaling partisan identity (Dias & Lelkes, 2021; Mason, 2018b). Affective polarization is at its highest point in 40 years, and out-group hate now surpasses in-group love in U.S. politics (Finkel et al., 2020). It is therefore reasonable to expect partisan affiliation to influence voting behavior and attitudes toward specific policies. But why would partisanship affect people's health-related behaviors—especially in ways that clearly run counter to their own self-interest, such as avoiding disease and death (or infecting their family and friends)? A potential explanation is that political parties not only represent a set of political stances but also fulfill social functions, and these functions can therefore affect beliefs and behavior.

Social groups satisfy basic human needs, such as belonging, distinctiveness, status, and epistemic closure (Baumeister & Leary, 2017; Brewer, 1991; Hogg et al., 2008). According to social-identity theory (Tajfel & Turner, 2004), people's sense of self is defined not only by their personal traits but also by their group

memberships—which can include their political-party affiliation (Iyengar et al., 2019; Mason, 2018a). In a polarized context, such as the United States, partisanship has become a particularly important social identity (Mason, 2018b; Van Bavel & Packer, 2021). The combination of elite cues, partisan news media, hostile rhetoric, social media "echo chambers," and geographic sorting increases the centrality of partisanship to the self-concepts of citizens (Finkel et al., 2020). Furthermore, partisan identities have become "mega-identities" that are strongly associated with a number of other demographic identities (e.g., gender, race/ethnicity, sexuality, religion, region; Mason, 2018b).

These identities, in turn, shape how people interpret the environment around them (see Xiao et al., 2016). According to the identity-based model of political belief, people tend to believe information that allows them to maintain a positive view of the groups they identify with so that these groups can continue to meet their core social needs (Van Bavel & Pereira, 2018). Partisanship, or identification with a political party, is one way people satisfy these needs (e.g., by attending political rallies and events). As a result, political parties affect not only people's policy preferences but also other aspects of their beliefs and behavior (see Dimant, 2023; Robbett & Matthews, 2021), including health-related choices. This becomes an issue when party members make unhealthy choices part of their identity—or resist healthy choices because they are associated with a hated out-group.

Social-identity goals can thus outweigh accuracy concerns, making people susceptible to believing misinformation (Van Bavel & Pereira, 2018). For instance, both Democrats and Republicans are more likely to believe and share positive news about the in-group and negative news about the out-group even when the information is false (Pereira et al., 2023). Moreover, one analysis of 2,730,215 social media posts found that out-group animosity was strongly associated with sharing political news (Rathje et al., 2021)—and similar patterns have been found for the spread of misinformation (Batailler et al., 2022; Borukhson et al., 2022; Osmundsen et al., 2021).[1] In the context of the COVID-19 pandemic, many have expressed concern that a misinformation "infodemic" on social media may have harmed public health (Robertson et al., 2022; Van Bavel, Harris, et al., 2021; Zarocostas, 2020). For instance, COVID-19 misinformation has a causal effect on vaccination intentions (Loomba et al., 2021). Moreover, one global study of nearly 50,000 people found that belief in COVID-19 conspiracy theories negatively predicted adherence to public-health behaviors across 67 countries (Pavlović et al., 2022). Thus, partisan differences in vaccination and other public-health behaviors in the United States (Dolman et al., 2023; Liu & Li, 2021; H. A. Roberts et al., 2022; Tram et al., 2022) could be partly explained by an identity-driven motivation to believe misinformation and conspiracy theories.

Once a social identity has become tightly associated with particular behaviors (e.g., to wear a mark or, alternatively, to actively resist wearing a mask), those behaviors are likely to become normative within the community (Neville et al., 2021). This is why social norms and cultural influences may have played such an important role in COVID-19 behaviors (Gelfand et al., 2021; Ruggeri et al., 2022; Van Bavel et al., 2020). Social norms may be injunctive (i.e., defining what people ought to do) or descriptive (i.e., specifying what people usually do). Injunctive norms represent people's knowledge of which behaviors their identity community prescribes or proscribes (e.g., "I'm a Republican, and we look down on people who mask"; Jacobson et al., 2011). In a politically polarized environment, the power of injunctive norms is largely limited to people who share the partisan identity with which it is associated. This explains why persuasive messages that highlighted the norms of fellow Republicans were effective at increasing vaccine intentions (Pink et al., 2021).

Descriptive norms can transcend social identities. Thus, a Democrat—who likely lacks an injunctive norm against masking—will nonetheless become acutely aware of a descriptive antimasking norm after visiting a heavily Republican community and may forgo masking as a result. Note that the pressure the Democrat feels not to mask does not depend on being persuaded that masking is bad (a change to an injunctive norm) but only on observing that no one in the environment masks. For instance, one large experiment of 484,239 people in 23 countries found that simply providing people with descriptive norms about the vaccination intentions in the population increased vaccination intentions among people who were otherwise uncertain (Moehring et al., 2023). In this way, descriptive norms are potent determinants of behavior within and across social identities, and changing such norms may be a critical means of changing people's behavior across parties (Tankard & Paluck, 2016). However, it is unclear whether these norms would have the same impact in a highly polarized environment.

Differences Between Partisanship and Ideology

In periods of political polarization, people tend to sort themselves into parties that better match their political ideology such that liberals identify with left-wing parties and conservatives identify with right-wing parties (Jost et al., 2022; Mason, 2018a). When people are sorted

along ideological lines into different parties, it can be difficult to distinguish the influence of social identity and ideological motivations on health-related behavior. For instance, were Republicans less likely than Democrats to follow public-health guidelines because of their identification with their party and its leaders—or because of their conservative ideology (e.g., they might have rejected government interventions into their private choices)? In the case of the COVID-19 pandemic, there is good reason to believe that the partisan gaps we described above are due more to partisan identity than political ideology.

One of the most surprising patterns of the pandemic is that Republicans were less likely to perceive the pandemic as threatening—even as the death toll climbed around the world and in Republican counties. Many studies found that Republicans reported lower perceived threats related to COVID-19 compared with Democrats (Calvillo et al., 2020; Van Bavel, 2020). This was at odds with prior evidence that ideological conservatives generally report higher threat sensitivity and perceive the world as a more dangerous place (Perry et al., 2013; but see Clifton & Kerry, 2023). Indeed, Republicans were more concerned than Democrats about a prior epidemic (i.e., the 2014 Ebola epidemic) when a Democratic president (Barack Obama) was in office. In other words, partisan identity rather than political ideology seemed to explain perceptions of risk. This pattern is similar to prior work that found that partisans align their options to their political party and rely on their own ideological beliefs only when information on party stances are not available (Cohen, 2003). In this way, partisan identity and elite cues appeared to play a critical role in shaping beliefs about COVID-19.

The lack of a relationship between ideology and COVID-19 beliefs was even more striking when looking at data from across the globe. In the United States, liberal political ideology was one of the largest predictors of policy support and disbelief in COVID-19-related conspiracies (Pärnamets et al., 2022). Yet an analysis of citizens in 67 countries found virtually no correlation (rs = .02–.03) between political ideology and support for various public-health measures during the early phase of COVID-19 (Van Bavel et al., 2022). Thus, the relationship with ideology and COVID-19 behaviors in the United States appears to be a global outlier driven by partisan identity, the actions of party leaders, and polarization. In other nations, national identity was a main predictor of support for public-health behaviors in response to COVID-19 (Van Bavel et al., 2022). For instance, when liberal and conservative party leaders in Canada both expressed serious concern about the

risks of COVID-19, it was associated with a rare period of cross-partisan consensus about the risks (Merkley et al., 2020). These findings suggest that identification with different groups (e.g., political party vs. nation) is associated with very different health-related behaviors. Social identity can thus foster social conformity in both positive (prosocial) and negative ways. In the case of COVID-19, Americans' partisan identities appeared to influence people's attitudes and behavior more than did their ideology.

The Role of Party Leaders and Political Elites

Strong partisan identities help drive polarized health behaviors. Before this can happen, however, particular behaviors (e.g., masking and vaxxing) must first become associated with partisan identity. Political parties and elites play an important role in this process because people's tendency to identify with them enables leaders to shape the content of partisan identity (Haslam et al., 2023). In the early stages of the pandemic, partisan identity allowed elites—such as President Donald Trump—to "seed" the development of polarized health beliefs and behaviors along party lines (Gadarian et al., 2022). Indeed, partisans tend to be highly responsive to messages from partisan in-group leaders or partisan elites (Bullock, 2020; Bursztyn et al., 2020). A study of Congressional members' communication at the start of the pandemic found clear differences in messaging between Republican and Democrat politicians (Green et al., 2020) such that Democrats were more likely than Republicans to emphasize the importance of COVID health precautions. This rhetoric appears to have trickled down to the actions of their partisan followers.

Messages from political elites were very different in different countries, which may explain why the pandemic response was not politically polarized everywhere. For example, in 2020, Boris Johnson, the former Conservative UK Prime Minister, called anti-vaxxers "nuts" (Walker, 2020). Thus, even in a country with relatively high levels of political polarization after Brexit, there was a shared sense of reality around the risks associated with the pandemic. Likewise, political leaders from across the political spectrum took the pandemic seriously in Canada despite preexisting levels of political polarization (Merkley et al., 2020). This stands in contrast to messages from former Republican President Donald Trump, who frequently downplayed and spread misinformation about COVID-19 to the public even as his administration supported the development of vaccines (Evanega et al., 2020).
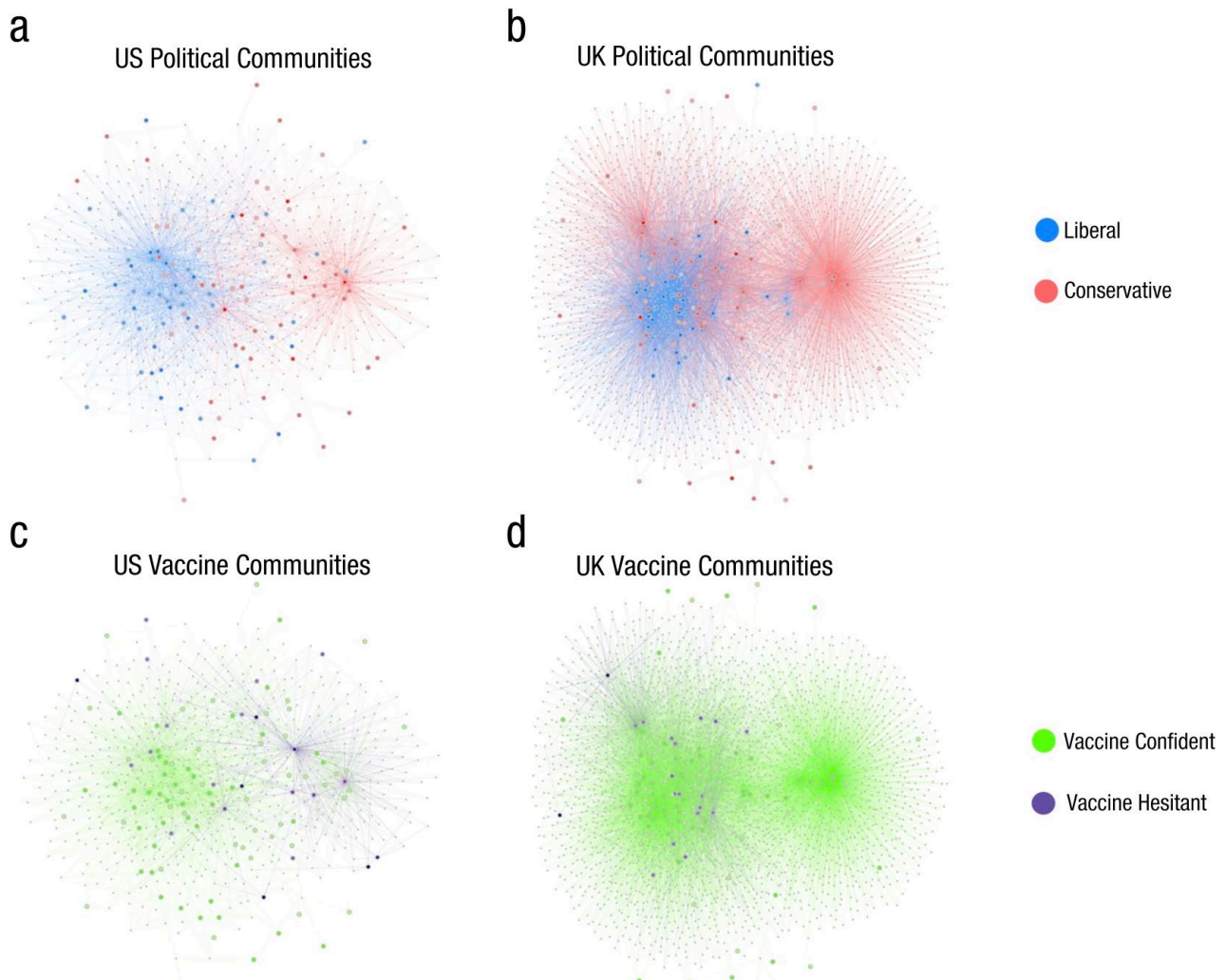
a
US Political Communities

b
UK Political Communities

● Liberal

● Conservative

c
US Vaccine Communities

d
UK Vaccine Communities

● Vaccine Confident

● Vaccine Hesitant

Fig. 4. Visualizations of Twitter networks in the (left) United States and (right) UK. The figure shows the networks of people who are more liberal/left-wing (blue nodes) versus people who are more conservative/right-wing (red nodes) in the (a and c) United States and (b and d) UK and people who are more vaccine confident (green) as opposed to vaccine hesitant (purple). Each small uncolored node represents an influencer that at least three of the participants were following, each large colored node represents a participant that is following an influencer, and each edge represents a following relationship. As shown, politics and attitudes about the vaccine appeared to be more polarized on social media in the United States than in the UK. Figure adapted from Rathje et al. (2022).

The contrasting messages from political leaders were linked to very different outcomes in these countries. One study found that U.S. conservative Twitter "influencers" in the United States, such as Candace Owens and Tucker Carlson, had the highest levels of vaccine hesitancy among their followers (Rathje et al., 2022). In contrast, Democratic, or liberal, leaders in the United States, such as Kamala Harris and Hillary Clinton, had the lowest levels of vaccine hesitancy among their followers. Although conservative-leaning social networks on Twitter predicted vaccine hesitancy in the United States, this was not the case in the UK—where vaccine hesitancy was not as polarized (see Fig. 4). These patterns suggest that the polarization of a pandemic is associated with the public stances of leaders and elites during the crisis.

Political leaders and partisan elites can either seed polarization by expressing skepticism for public-health recommendations or prevent such division by presenting a united front across parties (Merkley et al., 2020).

Understanding these partisan dynamics offers critical insights into how policymakers might address misinformation and vaccine hesitancy. Specifically, leveraging the persuasive power of elite in-group members can be used to promote public-health behavior (Chu et al., 2021). For instance, unvaccinated Republicans who were exposed to a short video of Trump endorsing the COVID-19 vaccine reported higher vaccination intentions than individuals who viewed a video of Biden endorsing the vaccine (Pink et al., 2021). Furthermore, a randomized controlled trial showed a brief

video of Trump endorsing the vaccine to 1,014 Republican-leaning U.S. counties via YouTube advertisements and found that it increased actual vaccine uptake in those counties relative to counties that did not see the YouTube advertisement (Larsen et al., 2022). These studies suggest that the pandemic could have unfolded very differently if Republican leaders—such as Trump—had publicly and repeatedly expressed support for public-health measures to Republican constituents consistently throughout the pandemic.[2]

The Role of Traditional and Social Media

People are exposed to messages from party elites and misinformation on both traditional media (e.g., television) and social media (platforms such as Facebook, Twitter, or TikTok). Indeed, these platforms are increasingly interwoven given that traditional media figures drive discussion on social media and incorporate content from social media in traditional media coverage (e.g., discussing social media posts from Donald Trump on CNN or *The New York Times*). Thus, both traditional media and social media appeared to play a substantial role in shaping perceptions about COVID-19. For example, watching partisan news channels such as the conservative-leaning Fox News was associated with less social distancing during the early stages of the pandemic (Gollwitzer et al., 2020; see also Ash et al., 2020). An extra hour of watching Fox News per week in the average household translated to 0.4 to 0.8 fewer vaccinations per 100 people at the county level (Pinna et al., 2022). One randomized controlled trial found that paying Fox News viewers to watch the liberal-leaning channel CNN for several hours per week over the course of a month led people to believe that the United States was doing a worse job handling COVID-19 compared with other countries, illustrating the causal impact of exposure to partisan television (Broockman & Kalla, 2022).

People who primarily received vaccine information from Facebook reported even lower levels of confidence in the vaccine compared with people who primarily received vaccine information from Fox News (Lazer et al., 2021). Furthermore, people who followed, tweeted, or favorited low-quality news sites on social media reported lower levels of confidence in the vaccine (Rathje et al., 2022), and U.S. counties that had higher levels of online misinformation showed the lowest levels of vaccine uptake (Pierri et al., 2022). Other randomized control trials suggest that exposure to certain political elites and news sources on social media can play a role in both increasing (Bail et al., 2018) and decreasing (Levy, 2021) polarization—and that social
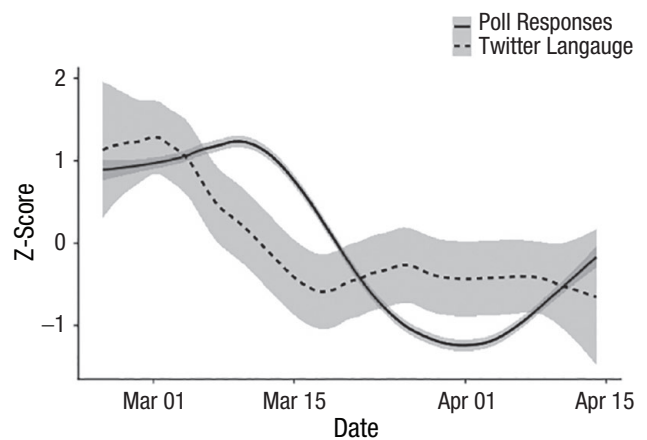

Fig. 5. Polarization changes in polls of COVID-19 concern and polarized language on Twitter. The solid line represents partisan differences in COVID-19 concern ($N = 22,256$), and the dashed line represents the degree of polarized discourse on Twitter ($N = 553,876$). The polarization in polls was computed from February 25, 2020, until April 14, 2020, by subtracting the daily Republican net concern from the daily Democratic net concern, as reported by CiviqsValues. To compare Twitter language with partisans' concern, Twitter messages from the United States within these dates that used the terms "covid" or "coronavirus" were analyzed using a polarization dictionary to the tweets and aggregated by date. The *x*-axis represents the time, and values on the *y*-axis represent standardized scores of the variables. The functions have gone through a locally estimated scatter-plot smoothing (span = 0.33, degree = 1). Shaded areas around the regression line denote 95% confidence interval. Figure adapted from Simchon et al. (2022).

media algorithms can limit exposure to counter-attitudinal news and thus increase polarization (Levy, 2021; Van Bavel, Rathje, et al., 2021). Likewise, the use of polarized rhetoric about the COVID-19 pandemic on Twitter was associated with subsequent partisan differences in concern about the pandemic (see Fig. 5; Simchon et al., 2022). This correlation was strongest when correlation between public concerns and Twitter language was strongest ($r = .67$), when opinion polls were collected 8 days after polarized discourse occurred on social media. Although this is not causal evidence, it suggests that polarized responses on social media track—and may even predict—public opinion.

Although much attention has been paid to the role of traditional media in accelerating polarization and public health, these studies suggest that the effects of social media deserve serious attention (Harris et al., in press; Van Bavel, Rathje, et al., 2021). Addressing the spread of misinformation across these platforms is key to any effective public-health response. Research suggests that prebunking, or educating people about manipulation tactics present in misinformation (Roozenbeek et al., 2022); incentivizing accurate judgments (Rathje et al., 2022); and highlighting partisan social

norms against sharing inaccurate information (Pretus et al., in press) might be especially effective for reducing the spread of polarized misinformation.

Policy Implications: Lessons From Polarizing a Societal Crisis

Successful public policy is defined as a system of measures and interventions aimed at increasing human welfare and depends on an understanding of human behavior (Shafir, 2013). To mobilize collective behavior to effectively address global crises, public policymakers must act in ways that are aligned with behavioral science (Reimers & McGinn, 1997; Ruggeri, 2021; Snilstveit et al., 2013). Social- and behavioral-science research proliferated during the COVID-19 pandemic, reflecting the substantial increase in influence of behavioral science in public health and public policy (Ruggeri et al., 2022; Van Bavel et al., 2020). This work claimed that

> One issue with polarization during a pandemic is that it might lead different segments of the population to arrive at different conclusions about the threat in the situation and appropriate actions. Partisans may receive different news because individuals can self-select polarized news sources or partisan "echo chambers" or can communicate in ways that are associated with less cross-partisan information sharing. (Van Bavel et al., 2020, p. 464)

Unfortunately, this cautionary insight was largely ignored by American leadership and policymakers.

Fortunately, there are actionable steps that could reduce polarization during a public-health crisis, such as highlighting a common identity among individuals all facing the same risk and creating a sense of shared fate (Balietti et al., 2021). As we noted above, when leaders from across the political spectrum take the pandemic seriously, this is linked to a widely shared belief about the risks during the pandemic (Merkley et al., 2020). By highlighting an overarching identity, politicians, the media, and opinion leaders may be able to help reduce political division around a pandemic (and potentially other public-health crises; Van Bavel, Rathje, et al., 2021). These insights are consistent with more than 70 years of research in social and political psychology (Sherif, 1954). Here, we outline a few key takeaways from recent behavioral-science research for public policymakers faced with a polarized society during a global crisis.

First, public messaging should place a strong emphasis on the common identities shared by members of a society rather than creating division or competing beliefs between partisan identities. Partisan animosity, or negative attitudes toward political opponents, can complicate coordinated responses to global crises, such as the COVID-19 pandemic (Druckman et al., 2021). To assess the best strategies for decreasing partisan animosity, scholars have conducted a megastudy to test the relative effectiveness of 25 interventions targeting partisan animosity (Voelkel et al., 2023). The top strategies included exposing people to examples of relatable and sympathetic political out-group members and highlighting a common cross-partisan identity. Both effects were mediated by increasing perceived similarity to out-partisans and fostering empathy toward them. Therefore, the key to decreasing partisan animosity lies in a sense of shared communities and common identities. This might be one of the best strategies policymakers can adopt to decrease polarization during a pandemic.

Second, nonpartisan experts should be placed at the forefront of the crisis response, as unbiased sources of information, to provide expert recommendations and policy proposals (Flores et al., 2022). During a global crisis, a rapid response from leaders is essential in determining the trajectory of the emergency. When people are faced with imminent threats, such as when they learn about a rising epidemic, they engage in behaviors aimed at rapid information acquisition (Frenkel et al., 2020; Saker et al., 2004). Given that uncertain situations create a state of increased anxiety and this anxiety reduces people's ability to critically assess information (Coman & Berry, 2015; Rozin & Royzman, 2001), it may lead people to share more inaccurate information in their social networks (Vosoughi et al., 2018). However, information sources have a strong impact on people's incorporation of evidence into their belief systems (Vlasceanu & Coman, 2022). Thus, leaders have the power to shape the narrative around such critical events by controlling the framing of the imminent threat early in the information cascade and providing actionable guidance (Kaslow et al., 2020; Macy et al., 2019).

Messages from leaders conveying social norms can also be effective (Adida et al., 2022). Political elites have a strong effect on people's support for policies designed to manage the COVID-19 pandemic (Flores et al., 2022). For instance, people supported policies proposed by in-group politicians (i.e., liberals supported liberal politicians' proposals, and conservatives supported conservative politicians' proposals). Therefore, in-group-based interventions should be tailored to groups whose behavior requires modification. When leaders and elites actively discourage public-health advice, it is difficult to leverage in-group messaging. However, policies proposed by nonpartisan experts are more likely to be endorsed (Flores et al., 2022). Therefore, allowing experts and widely trusted sources (e.g., primary-care doctors or the military) to communicate recommendations and implement

scientifically informed solutions can increase bipartisan support.

More generally, we advocate that policymakers leverage the best evidence from social and behavioral science. Research on the COVID-19 pandemic suggests that curated insights from social and behavioral science were highly accurate. For instance, a comprehensive assessment of 742 scientific articles on human behavior during COVID-19 found that 89% of the key claims made by a group of social scientists at the onset of the pandemic (from Van Bavel et al., 2020) were supported by subsequent research (Ruggeri et al., 2022). Thus, the lessons drawn from the large body of research on the COVID-19 pandemic may be applied to other societal threats, such as the climate crisis (Allcott & Mullainathan, 2010; Botzen et al., 2021); rising economic (Dioikitopoulos et al., 2019), racial (S. O. Roberts et al., 2020), and gender-inequality (Vlasceanu & Amodio, 2022) issues; and other global issues. As is the case with the COVID-19 pandemic, addressing these challenges is more likely to be successful if leaders can mobilize widespread cooperation and minimize polarization.

One of the most pressing tasks for social scientists is the development of scalable and durable interventions that reliably encourage communities to adopt public-health recommendations in future pandemics. There is a critical need for larger-scale randomized controlled trials that test theoretically informed interventions in polarized contexts. Experimental studies examining the influence of social norms, shared identity, elite influence, and social media dynamics must be replicated and extended in large representative samples of the public. A promising structure for this effort is the megastudy model, in which a consortium of many researchers pool their efforts to test a range of interventions with a sizable sample of participants (e.g., Milkman et al., 2021; Milkman et al., 2022). Scientists and funders should build the necessary infrastructure and collaborative networks to facilitate these incisive studies. It is our hope that the research now emerging guides behavioral and social scientists in the development—and policymakers in the implementation—of interventions that stand ready when the next major crisis hits.

Conclusion

In the United States, a host of health behaviors—from physical distancing to masking to vaccination—became polarized along partisan lines during the COVID-19 pandemic. Partisanship (i.e., Republican-party identification) was one of the biggest risk factors for under-utilization of public-health behaviors (Cunningham &

Nite, 2021; Gollwitzer et al., 2020; J. Huang et al., 2022), and this partisan gap was linked to widespread preventable illness and death in Republican communities (Wallace et al., 2022). The unnecessary spread of COVID-19 likely spilled over to Democratic and non-partisan community members. Thus, everyone in society has a stake in addressing polarization during a public-health crisis to prevent unnecessary illness and mortality. We also believe these dynamics pose a risk for other health issues, including vaccination rates for other infectious diseases. We have outlined the roles that social identity, identity leadership, and social norms have played in creating this public-health catastrophe. Policymakers, leaders, and citizens have the capacity to fight back against the deadly influence of polarization in a pandemic.

Transparency

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Notes

1. Recent work has claimed that susceptibility to fake news is driven more by lazy thinking than it is by partisan bias (Pennycook & Rand, 2019). However, several labs have recently reanalyzed the data from these experiments and found that partisan bias is a stronger predictor of sharing misinformation (Batailler et al., 2022; Borukhson et al., 2022). Moreover, accuracy nudges based on the premise that people are merely cognitively lazy have very small effect sizes (Roozenbeek et al., 2021), especially among Republicans ($d = 0.11$, or $r = .06$; Rathje et. al, 2022). Note, however, that the effect sizes of partisan bias versus cognitive reflection may depend on which outcome researchers consider. For instance, truth discernment, or belief in true news minus belief in false news, appears to be more influenced by cognitive reflection, whereas overall belief in news appears to be more influenced by partisanship (Gawronski, 2021).

2. We note that this strategy might not be the most effective as a general public-health strategy (because polarizing figures can lead to potential backlash among opponents). However, the data suggest that targeted messaging between trusted party elites and party members can be effective.

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