Partisan Differences in Physical Distancing Predict Infections and Mortality

During the Coronavirus Pandemic

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Abstract

Few things bind disparate groups together like a common obstacle. Yet, numerous polls suggest that the COVID-19 pandemic has been subject to a deep partisan divide. Using geo-tracking data of over 17 million smartphone users around the United States, we examined whether partisan differences predict objective physical-distancing behaviors. U.S. counties that voted for Donald Trump over Hillary Clinton in 2016 exhibited 16% less physical distancing from March 9 to May 8, 2020, as assessed by overall movement and visits to nonessential services (e.g., restaurants). Counties that watched more conservative media (i.e., Fox News) also exhibited reduced physical distancing, as did states with higher Trump approval. Contrary to our preregistered predictions, these differences did not weaken with time and remained even in pro-Trump states with active stay-at-home orders. Finally, lower physical distancing in strongly pro-Trump counties (those whose pro-Trump margin was 2 SDs above the mean) was associated with a 27% higher growth rate in COVID-19 infections. Taken together, these data suggest that behavior during the COVID-19 pandemic is not immune to the partisan divide in the United States and that partisan differences in physical distancing predict subsequent coronavirus infections and fatalities.

*Keywords*: coronavirus, COVID-19, physical distancing, partisanship, politics

Political partisanship has been on the rise in the United States. People express a more unfavorable view of the opposing party than ever before (Pew, 2016), partisan echo chambers abound both in person and online (e.g., Garret, 2009; Motyl, Iyer, Oishi, Trawalter, & Nosek, 2014), and individuals in the political minority fear to reveal their political identity (Perez-Truglia & Cruces, 2017). What is more, these identities have significant consequences. People's choices of where to work, live, and shop are driven by political identity as much as they are by religion (McConnell, Margalit, Malhotra, & Levendusky, 2018), partisan attachments distort memory for political events (Frenda, Knowles, Saletan, & Loftus, 2013), and political homophily is as influential as educational homophily in online dating (Huber & Malhotra, 2016). Further, an estimated 81 million Americans reported arguing about politics with family and close friends after the 2016 election (Reuters, 2017), and 34 million hours of Thanksgiving dinner conversation were lost in 2016 due to partisan differences between hosts and guests (Chen & Rohla, 2018). Exacerbating these partisan differences, slanted news outlets tangibly impact voting decisions (Martin & Yurukoglu, 2017). In the current era of polarization, then, differences in partisan identity appear to influence a wide variety of social judgments and behaviors (see Van Bavel & Pereira, 2018, for a review).

The 2020 coronavirus pandemic provides a unique test of the limits of political partisanship and identity. Is an international crisis threatening substantial loss of life and prolonged economic hardship approached in a bipartisan manner? Or, is the current public health crisis subject to partisanship? Unlike debates about the size of an inauguration crowd (Schaffner & Luks, 2018), partisan disagreement about health behaviors during a pandemic could have fatal consequences (Van Bavel, 2020).

Numerous polls have found a partisan gap in self-reported perceptions of risk and support for mitigating health behaviors during the COVID-19 pandemic. For instance, an NBC News/Wall Street Journal poll conducted from March 11 to 13 found that 68 percent of Democrats were worried that someone in their family could catch the virus, compared with just 40 percent of Republicans (Hart Research Associates/Public Opinion Strategies, 2020). Further, nationally representative Gallup polls spanning early-to-late March documented that Republicans were less likely to report avoiding public places than were Democrats (21% vs. 41% polled March 13 to 15; 70% vs. 85% polled March 27 to 29; Gallup Editors, 2020). Additionally, several studies surveying participants on online data collection platforms have shown that self-identified conservatives are

less likely to endorse a variety of physical distancing measures (e.g., staying 6 feet away from others, wearing masks) than are self-identified liberals (e.g., Gadarian, Goodman, & Pepinsky, 2020; Gollwitzer et al., 2020; Rosenfeld, Rothgerber, & Wilson, 2020). Potentially, these differences are driven by liberal areas registering a significantly higher number of COVID-19 infections and fatalities (Chinni, 2020; though, see Conway, 2020).

However, self-report measures and polls have their limitations. For instance, self-reported partisan differences may be driven by liberals responding in what they think is a socially appropriate manner and conservatives responding more honestly (Fisher, 1993; Maccoby & Maccoby, 1954). Alternatively, such differences may be driven by participants responding in ways that they believe align with the stances of their political ingroup and party leaders (i.e., political "cheerleading"; Bullock et al., 2015). Indeed, prior work suggests that partisan differences in survey responses can be driven by partisan cheerleading rather than genuine perceptions (Schaffner & Luks, 2018). To overcome the limitations of self-report methodology, we tested whether the documented partisan differences in responding to coronavirus extend to objective behavior.

In the current pandemic, epidemiologists and public health officials have strongly encouraged people to physically distance from one another in order to slow the spread of coronavirus. Indeed, a number of studies have documented that physical distancing has temporarily reduced the spread of coronavirus, preventing the inundation of healthcare providers and saving numerous lives (e.g., Anderson, Heesterbeek, Klinkenberg, & Hollingsworth, 2020; Gao et al., 2020; McGrail, Dai, McAndrews, & Kalluri, 2020). To see if physical distancing differs as a function of partisanship, we analyzed the aggregated GPS coordinates of approximately 17 million people in the United States per day (tracked via smartphone location coordinates). Specifically, we examined whether the political lean of over 3,000 U.S. counties predicts the extent to which residents of those counties have practiced physical-distancing behaviors during the coronavirus pandemic. Furthermore, to examine the association between party identity and public health, we tested whether partisan differences in physical distancing mediate a relationship between partisanship and COVID-19 infections and fatalities.

**Method and Results**

We examined people's physical distancing behaviors in 3,025 U.S. counties (those with a population of at least 2,000)[1] between March 9 and May 8, 2020. Physical distancing was assessed via a county's *percent reduction* in general movement and visits to nonessential services (e.g., barbers, restaurants, clothing stores)[2] relative to before COVID-19 struck the United States with force (before March, 9th).[3] Specifically, the physical distancing values were the change in physical distancing from the same day of the week during the four weeks leading up to March 9. For example, a county's level of physical distancing on Monday, March 30 is calculated as the percent reduction in movement and nonessential visits from the average levels of movement and nonessential visits on the four pre-COVID Mondays (February 10, February 17, February 24, and March 2) in that county. The two assessed physical distancing variables—general movement and visiting nonessential services—were calculated by Unacast, a software company that provides location tracking and map services, using approximately 17 million smartphone GPS coordinates across the U.S per day. The data were anonymized in that GPS coordinates were aggregated at the county level (the locations of specific individuals were *not* shared with the authors).

We first validated the two behavioral physical distancing measures by examining whether distancing behavior changed since the beginning of the pandemic. All models reported below are three-level mixed-effects models where observations are nested within county and county within state. We report models with a random intercept (including a random slope of time in the model did not improve model fit). As noted above, the outcome variables in the models represent counties' percent reduction in general movement and reduction in visits to nonessential services compared to pre-COVID-19 (before March 9). Thus, the outcome variables were calculated so as to remove county-level variation in pre-COVID-19 movement and nonessential service visits.

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[1] We excluded counties with less than 2,000 inhabitants because the GPS physical distancing estimates are likely to become unreliable in such counties (we estimated that by including only counties of over 2,000 inhabitants that we would have at least 125 participants per county).

[2] Nonessential retail and services are those that fall into the categories of restaurants; department stores; clothing; footwear; discount stores; jewelry; computers and consumer electronics; gifts; seasonal products; books; office supplies; hair; cosmetics and beauty supplies; gyms and fitness; communications; new and used cars; hotels; used products; crafts, toys, and hobbies; travel; spa, massage, and aesthetics; sports and recreation; weight loss; furnishings; home and housewares; home improvement and building supplies; printing, copying, and publishing; theaters; music; amusement; furnishing rentals; shared offices and coworking; car wash; cannabis retail; flowers; bars; pubs; cafes; nightclubs; cinemas; and casinos.

[3] Days prior to March 9 were treated by Unacast (the software company that shared this data with the authors) as pre-COVID. For more detail how these scores were calculated see here (the two included measures are metrics one and two). The data provided by Unacast is not shared publicly by us for proprietary reasons. For analysis code and for details of the sources of all included measures see here.

Across counties, we observed a substantial increase in physical distancing, both in terms of reduced general movement and visits to nonessential services as the COVID-19 pandemic worsened (early March into early April). Time was $z$-scored before being entered into the model; thus, coefficients indicate the percent reduction in general movement and visiting nonessential services for every change of 1 SD in time, $B_{movement} = 33.60$, $B_{visitation} = 53.44$, $p$s < .001; see Fig. 1). This rise in physical distancing started to reverse around early April, however, as some locales began to reopen businesses (quadratic effects of time: $B_{movement} = -30.74$ and $B_{visitation} = -51.57$, $p$s < .001; Fig. 1; see Supplements for additional details of these and all following analyses). Providing evidence for the efficacy of state-issued orders, physical distancing was also greater on average in places where stay-at-home policies had been implemented ($B_{movement} = 11.63$, and $B_{visitation} = 15.56$, $p$s < .001). Finally, physical distancing was considerably greater on the weekends, when fewer people travel for work ($B_{movement} = 11.13$ and $B_{visitation} = 4.42$, $p$s < .001), and greater in higher-income counties, where people are more likely to be able to work from home ($B_{movement} = 3.75$, and $B_{visitation} = 5.10$, $p$s < .001). Together, these results suggest that the geo-tracking data are a valid measure of physical distancing and allow us to test for differences as a function of political partisanship.
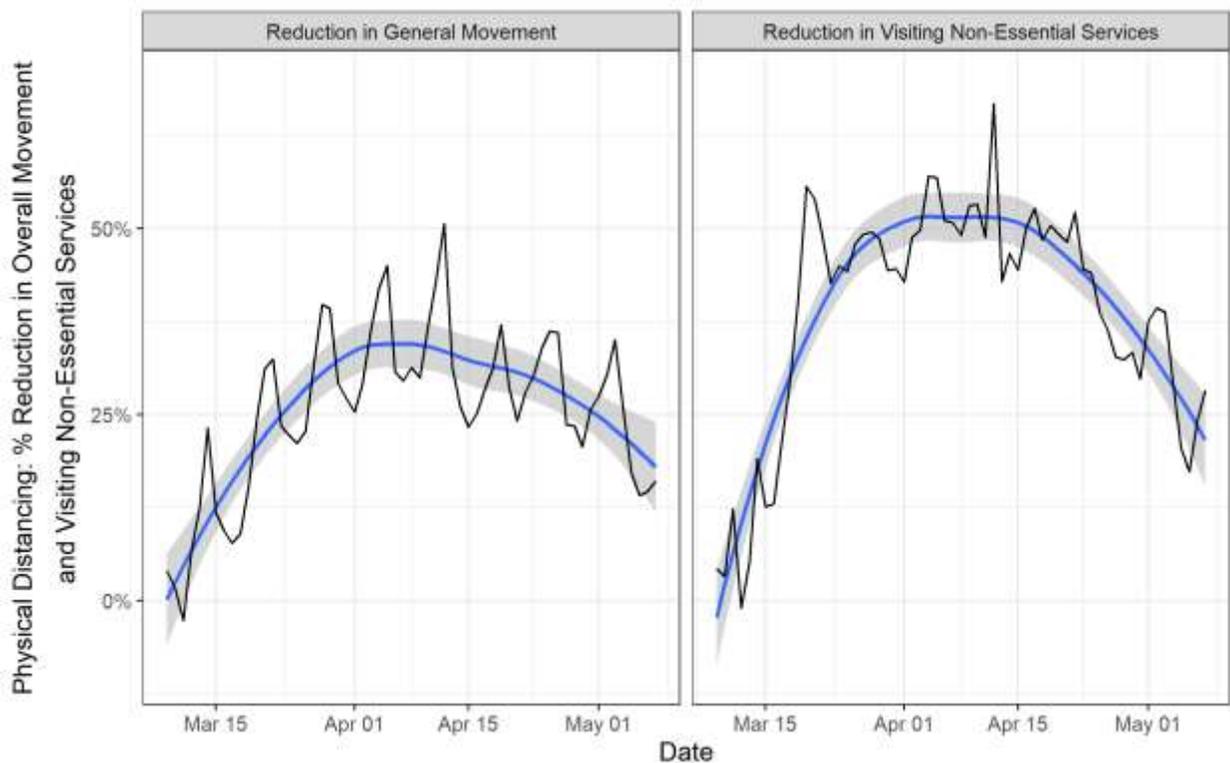
*Fig. 1*. Physical distancing (percent reduction in general movement and visits to nonessential services relative to before COVID) as a function of time (March 9 to May 8, 2020). In line with U.S. states weakening stay-at-home restrictions around early April, physical distancing increased up until early April and then began to decline.

To examine whether partisanship predicts counties' degree of physical distancing, we created a continuous index of partisanship by calculating the county-level voting gap in the 2016 election—that is, the percent of total votes for Donald Trump minus percent of total votes for Hillary Clinton. The model included a random intercept and fixed effects of voting gap (*z*-scored), time (linear and quadratic), and a dummy-coded weekend indicator (see Fig.1 for a clear illustration of weekend effects). We also entered into the model key covariates likely to impact physical distancing—specifically, population density, COVID-19 infections per capita, median household income in 2018, median age in 2018, access to grocery stores, number of grocery stores per 1,000 people, region, religiosity, percent employment, and percent employment in various types of professions (e.g., agriculture, finance, manufacturing). We observed that the more a county favored Donald Trump in the 2016 election, the less it exhibited physical distancing. Specifically, for every one standard deviation increase in vote share for Donald Trump versus Hillary Clinton, counties exhibited 2.04% less physical distancing in terms of general movement and 3.11% less physical distancing in terms of visits to nonessential services ($B_{movement} = -2.04$, and $B_{visitation} = -3.11$, *p*s < .001). Collapsing counties into pro-Trump vs. pro-Clinton bins, the average partisan difference in physical distancing from March 9 to May 8, 2020 was approximately 16%. As a test of robustness, similar results were observed when partisanship was assessed via state-level Trump approval assessed in 2020 rather than 2016 vote-gap at the county level (see SI Appendix). Finally, to illustrate the comparative predictive power of partisanship to predict physical distancing, we note that county-level voting gap was a stronger predictor of physical distancing than counties' median age, religiosity, percent employment, type of employment, and even density.

Though we observed partisan differences, we predicted that these differences would decrease over time as the pandemic worsened and people became more aware of the dangers of

COVID-19 (see pre-registration here).[4] We found the opposite. As the pandemic progressed, counties' percentage of votes for Trump over Clinton became an increasingly negative predictor of physical distancing in terms of both general movement and visits to nonessential services. Specifically, as time passed, the coefficient of the negative association between Donald Trump's vote share and physical distancing increased by approximately -0.017 per day for general movement and -0.011 per day for visits to nonessential services (linear time effects [$z$-scored]: $B_{movement}$ = -0.30, and $B_{visitation}$ = -0.20, $p$s < .001; Fig. 2). This relationship also demonstrated a quadratic pattern, such that county-level pro-Trump voting did not predict physical distancing at the start of the pandemic, increasingly predicted decreased physical distancing as the pandemic progressed, finally peaking in early April and plateauing thereafter, $r_{movement}$ = -.35 and $r_{visitation}$ = -.55 (quadratic time effects: $B_{movement}$ = 0.21, $B_{visitation}$ = 0.13, $p$s < .001; Fig. 3).
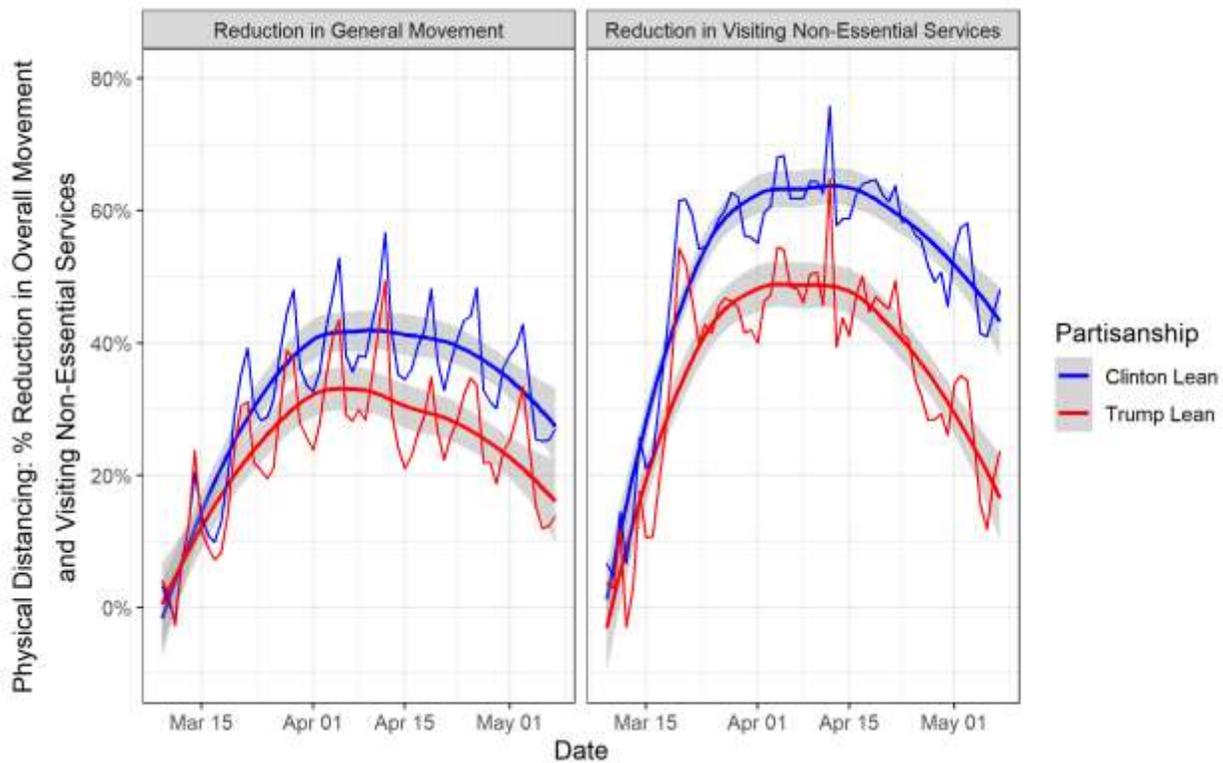


*Fig. 2*. U.S. counties' average physical distancing (percent reduction in general movement and visits to nonessential services) as a function of time and partisanship (Trump vs. Clinton vote gap in 2016). For the purposes of this figure, counties were binned as Trump Lean if a greater

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[4] In the preregistration we had planned for our analyses to include only data from March 24th onward. Here we report analyses for March 9th onward, however, because the results do not change when doing so and because including all available data should provide more accurate estimates.

percentage of inhabitants voted for Trump, and Clinton Lean if a greater percentage of inhabitants voted for Clinton.
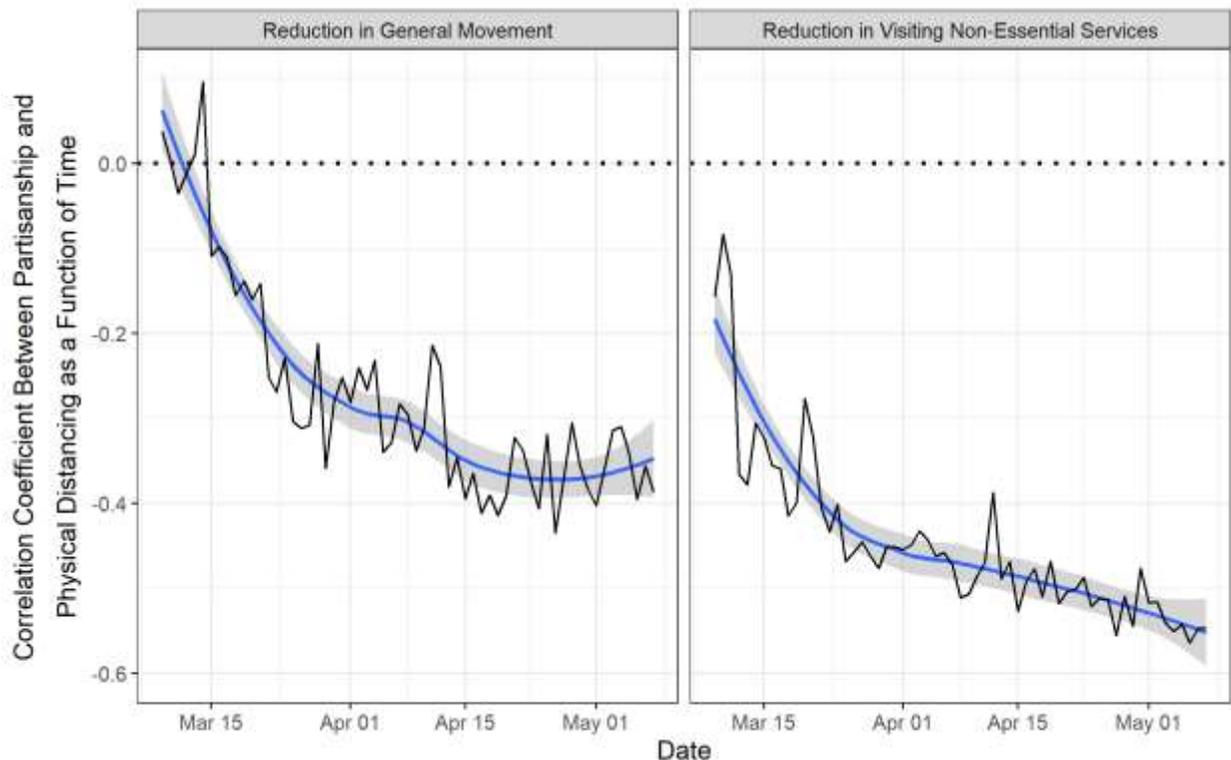


*Fig. 3*. Correlation coefficients of the relationship between partisanship (Trump vs. Clinton vote gap in 2016) and physical distancing (percent reduction in general movement and visits to nonessential services) as a function of time (March 9 to May 8, 2020). As the pandemic developed, pro-Trump counties increasingly exhibited less physical distancing than pro-Clinton counties. This difference plateaued for general movement around the end of April and continued to widen for visits to nonessential services through the last day of available data (May 9).

The observed partisan differences in physical distancing may be propagated by the respective media proponents of Republicans and Democrats. Indeed, recent research has indicated that behavioral responses to COVID-19 change in line with the specific cable news show people watch (e.g., Tucker Carlson Tonight versus Hannity; see Bursztyn, Rao, Roth, & Yanagizawa-Drott, 2020). To examine whether media consumption predicts physical distancing, viewership data from Nielsen SimplyAnalytics were used to test whether counties in which constituents watch more Fox News as compared to CNN and MSNBC (difference score) exhibit lower physical distancing. Indeed, the degree to which counties watched Fox News over CNN and MSNBC predicted a smaller reduction in general movement and visits to nonessential services from relative

to the pre-COVID period ($B_{movement}$ = -1.96, and $B_{visitation}$ = -2.19, $p$s < .001).[5] Again, these differences strengthened with time, ($B_{movement}$ = -0.18 and $B_{visitation}$ = -0.18, $p$s < .001) before largely plateauing (i.e., exhibited a quadratic trend; $B_{movement}$ = 0.09, and $B_{visitation}$ = 0.14, $p$s < .001; see Figs. S5 and S6). All of these analyses including the above-noted control variables.

The effects of partisanship on physical distancing can potentially be attenuated by local policies. That is, state-issued stay-at-home orders may reduce partisan differences in distancing. We preregistered this hypothesis (see here). Our data did not support this prediction. Stay-at-home orders actually had less of an impact on physical distancing in Trump-voting counties, as evidenced by negative interactions between vote gap (with higher values indicating greater pro-Trump lean) and state policy ($B_{movement}$ = -2.46, and $B_{visitation}$ = -2.53, $p$s < .001). These results compliment those of Painter and Qui (2020), who found that Democratic counties responded more quickly to stay-at-home orders than Republican counties. Again, these analyses included all covariates and also remained consistent when replacing pro-Trump voting in the 2016 election with state-level Trump approval as the measure of partisanship, $p$s < .001 (for examinations of these links when taking time into account, see Supplements).

Finally, we examined whether the observed partisan differences in distancing ultimately predict COVID-19 infections and fatalities. Applying mixed models in which we specified a random intercept for county, we first tested whether physical distancing predicts decreased COVID-19 infection and fatality growth rate within each county (growth rate was used because the main goal of physical distancing is to "flatten the curve," or the exponential growth rate of coronavirus). Growth rate was calculated as the number of infections (fatalities) on the current day minus infections (fatalities) on the previous day, divided by the number of infections (fatalities) on the previous day, multiplied by 100.[6] Given the incubation period of COVID-19 (2-11 days) and the average time it takes to get positive test results (1-3 days), physical distancing measures should begin to reduce counties' infection growth rate anywhere between a 4 and 14 days later (or even later if testing and reporting is additionally delayed; Backer, Klinkenberg, & Wallinga, 2020).

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[5] Vote gap for Trump over Clinton in the 2016 election correlated moderately with Fox News preference at the U.S. county level, $r(3005) = .44$, $p < .001$.

[6] Changes in total infections from 0 cases to 0 cases the next day  (i.e., cases in which a county still had not registered a single case of COVID-19) were treated as a growth rate of 0. The first change in a county from 0 cases to some number of cases was also evaluated as a growth rate change of 0 (as an increase from 0 to some integer is a growth rate of infinity).

Indeed, we found that counties' physical distancing, averaged across 4 to 14 days prior to a given day, predicted a lower infection growth rate on that day ($B_{movement}$ = -2.41, and $B_{visitation}$ = -2.28, $p$s < .001). At the same time, non-time-lagged physical distancing—physical distancing on the *same* day as growth rate is assessed—predicted a higher infection growth rate ($B_{movement}$ = 0.75, and $B_{visitation}$ = 1.91, $p$s < .001; for additional analyses see Supplements).[7]

Turning to fatalities, researchers have noted that most deaths from COVID-19 occur approximately 2 to 3 weeks after being infected (approximately 1 to 2 weeks after symptoms appear; Kim & Goel, 2020; Wilson, Kvalsvig, Barnard, & Baker, 2020). We found that counties' physical distancing, averaged between 14 and 21 days (3 weeks) earlier, predicted lower fatality growth rate ($B_{movement}$ = -0.28, and $B_{visitation}$ = -0.17, $p$s < .001). At the same time, physical distancing on the same day, between 1 and 7 days earlier (1 week), and between 8 and 14 days earlier (2 weeks) predicted greater fatalities ($0.29 < B_{movement} < 0.61$, and $0.82 < B_{visitation} = 1.11$, $p$s < .001). Collectively, these results suggest that counties' degree of physical distancing predicted a lagged reduction in the infection and fatality COVID-19 growth rate in those counties.

Finally, we tested the indirect (i.e., mediated) link from partisan differences to infections and fatalities. The indirect relationship between counties' pro-Trump voting ($z$-scored) and daily COVID infection growth rate via physical distancing (lagged 4 to 14 days earlier; $z$-scored) was significant ($B_{movement}$ = 0.61, and $B_{visitation}$ = 0.71, $p$s < .001). The same was true for counties' daily fatality growth rate ($B_{movement}$ = 0.07, and $B_{visitation}$ = 0.07, $p$s < .001). The observed mediations represent suppressor mediations: Though there were overall less infections and fatalities in Trump-leaning counties ($p$s < .001; see Supplements),[8] our models indicated that there would have been even fewer infections and fatalities had Trump-leaning counties physically distanced to the same extent as more Clinton-leaning ones ($p$s < .001; see Supplements). More specifically, our model indicated that extremely pro-Trump voting counties (+2 SDs above the mean in the vote gap variable) experienced an average infection growth rate of 6.12% per day, but would have experienced a growth rate of only ~4.80% if they had socially distanced to the same extent as more Democratic-voting counties—an approximately 27.5% drop in infection growth rate. Our findings

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[7] This positive same-day relationship between distancing and growth rate likely reflects the fact that counties that suffered most from the pandemic were also those that started to most heavily physical distance (see Supplements for cross-lagged analyses).

[8] This was likely due to less foreigners traveling through pro-Trump counties and because New York City was the epicenter of the outbreak.

thus tentatively suggest that partisan differences in physical distancing predicted a higher growth rate of infections and fatalities in pro-Trump counties than was necessary.

**Discussion**

We tested whether partisan identity is linked to objective measures of physical distancing during COVID-19 using geotracking data of approximately 17 million people a day across the United States. We found that Republican-leaning counties exhibited lower physical distancing than more Democratic-leaning counties both in terms of overall movement and visits to nonessential services. More specifically, counties that voted for Trump in the 2016 election exhibited a 42% drop in movement and visiting nonessential services, while counties that voted for Clinton exhibited a 58% drop (a 16% difference in physical distancing). Moreover, this partisan gap remained consistent after adjusting for a number of other variables. These data suggest that the partisan differences in attitudes toward COVID-19 are mirrored in terms of physical distancing at the county and state level.

We also found evidence linking the observed partisan differences in distancing to COVID-19 infections and fatalities. Though favoring Donald Trump in the 2016 election COVID-19 overall predicted *lower* infections and deaths (likely because the epicenters of viral outbreak were high density, touristy liberal locals such as New York City), pro-Trump voting was indirectly linked to higher infections and fatalities. That is, Trump-voting counties exhibited reduced physical distancing, and such reduced physical distancing predicted an increase in COVID-19 infections and fatalities 4-14 days and 2-3 week later. These results tentatively suggest that partisanship in the U.S. during the COVID-19 pandemic may have had actual health-related consequences.

The observed partisan differences appear highly robust. The results were found for an alternate measure of partisanship—state-level approval of Donald Trump's job performance (February 2020)—and also held after adjusting for numerous control variables, including counties' number of COVID-19 infections per capita, median household income (2018), median age (2018), population density, access to grocery stores, number of grocery stores per 1,000 people, percent employment, percent employment in various types of professions (e.g., agriculture, finance, manufacturing), religion, and region. Finally, the robustness of these findings receives additional support from independent research groups that have also observed links between partisanship and

physical distancing using different data sources (Allcott, 2020; Andersen, 2020). Taken together, this provides a more complete picture of partisanship during a pandemic.

The observed partisan differences in physical distancing were not limited to the start of the COVID-19 pandemic. Indeed, we expected (and preregistered; see here) that the observed partisan gap in physical distancing would disappear as the pandemic worsened after March 23, 2020.[9] We were wrong. Though the partisan gap in physical distancing plateaued around the beginning of April, this gap did not disappear and did not seem to be decreasing as of May 8, 2020. We also preregistered that small-government intervention would attenuate the observed partisan differences. Again, we were wrong. We instead found that state stay-at-home orders actually exacerbated the observed partisan differences. That is, stay-at-home orders may have been more successful in encouraging Democratic counties to physically distance than they were Republican counties. Potentially, then, one factor underlying the reported results is that more Republican-leaning counties ignored local stay-at-home orders, which would align with Republicans holding a greater distrust of government than Democrats (e.g., Dyck, 2009).

From where do the observed partisan differences originate? One potential factor driving the observed differences is that conservative counties experienced fewer COVID-19 infections and fatalities than liberal ones. Simply put, for conservatives, the threat of coronavirus was less salient. Though possible, the partisan differences in physical distancing we report were observed even when controlling for counties' infections per capita—this should account for the fact that Republican counties were objectively less threatened. And further, research on self-reported partisan differences in worrying about COVID-19 finds that desired political outcomes (e.g., wanting the pandemic to be less serious than it is) and not one's actual experience with COVID-19 drive these differences (Conway, 2020).

A potentially better explanation for the observed results is media polarization or a "broadcasting effect" (see Martin & Yurukoglu, 2017; Smith, 2020). Republican-leaning media outlets may have downplayed the dangers of the coronavirus as compared to more Democratic outlets. For instance, in early March, Fox News repeatedly claimed the coronavirus was less dangerous than the flu and even referred to other media reports as a hoax (though some commentators took it more seriously than others, and the organization took the pandemic more

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[9] This was the day that we completed the pre-registration.

seriously by mid-March; Haltiwanger, 2020). In line with this underestimation of the coronavirus, we found that U.S. counties preferring Fox News to more Democratic-leaning outlets (MSNBC and CNN) exhibited less physical distancing. These results, along with self-report data indicating similar effects (Rosenfeld, Rothgerber, & Wilson, 2020), suggest that Republican-leaning media outlets downplaying the virus at the start of the pandemic made the virus seem less threatening and dangerous to its viewers, in turn potentially causing the observed partisan differences.

Of course, other factors may also drive the observed differences. For one, conservative versus liberal political ideologies may lead individuals to respond differently to threat or specifically to the threat of a viral pandemic (e.g., Nail, McGregor, Drinkwater, Steele, & Thompson, 2009; Janoff-Bulman, 2009). However, we find this conclusion unlikely given that conservatives were actually more likely than liberals to report being worried about the potential spread of a different viral pandemic—Ebola—in the U.S. in 2014 (Pew, 2014). As such, it seems that our findings are more likely to be driven by political identity (i.e., political group loyalty) than political ideology (political values; e.g., Van Bavel & Pereira, 2018; Cohen, 2003; Mason, 2018; Macy, Deri, Ruch, & Tong, 2019).

Our findings draw from a large sample of real behavior and are robust to several model specifications, but nevertheless have several limitations. First, these data are purely correlational, making it difficult to draw strong causal conclusions. Second, the reported data are county level data which do not tell us whether more conservative individuals engage in less objective physical distancing than liberals (though self-reported data indicate that they are likely to; e.g., Gallup Editors, 2020). Third, individuals in pro-Trump counties may need to travel further to shop for essential goods and therefore exhibit lower physical distancing that pro-Clinton counties. However, we found consistent results when assessing physical distancing via counties' reduction in visiting nonessential services, and also when we statistically adjusted for access to supermarkets. Nevertheless, future research should examine individual behavioral differences using causal tests to help determine if partisanship is causally related to public health behavior.

Though few things bind groups together like facing a common obstacle, the 2020 coronavirus pandemic has had a deeply partisan flavor (and seemingly continues to do so). Here we document that this sort of partisanship may have influenced physical distancing behavior at the U.S. County and State level and that this degree of physical distancing may have, in turn,

influenced counties' number of COVID-19 infections and death. This finding raises the possibility that partisanship may pose a health risk to citizens during a pandemic.

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