

# The Nastiest Question: Does Population Mobility Vary by State Political Ideology during the Novel Coronavirus (COVID-19) Pandemic?

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## Abstract

We consider the association between state political ideology and population mobility during the coronavirus (COVID-19) pandemic. We use first-party geo-behavioral data to estimate the average distance traveled by approximately 15,000,000 devices over 10 weeks (February 24, 2020 to April 27, 2020). Regression models with state clustered robust standard errors show *lower* shelter-in-place rates and *higher* mobility scores in states with larger percentages of voters who supported Trump in the 2016 presidential election. We also find that shelter-in-place rates increased and mobility scores declined at *slower* rates in states with greater Trump support. Shelter-in-place rates and average mobility scores were *comparable* in states governed by Republicans and Democrats. There was some evidence that shelter-in-place rates increased and average mobility scores declined at *slower* rates in states governed by Republicans. Overall, states with more Trump voters are more resistant to public health recommendations and state stay-at-home orders during the coronavirus pandemic.

## Keywords

politics, Donald Trump, conservatism, Republican, coronavirus, COVID-19

## Introduction

After spreading around the world in a matter of months, the novel coronavirus (COVID-19) has become a leading cause of death in the United States. According to the Coronavirus Resource Center (2020) at Johns Hopkins University, over 250,000 Americans have already died from COVID-19. Although the United States accounts for only 4 percent of the global population, it has contributed over 20 percent of all verified COVID-19 deaths worldwide. Among the many potential mitigation strategies proposed by the Centers for Disease Control and Prevention (CDC) (2020), staying home and avoiding close contact with people are perhaps the best ways to

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prevent exposure to the coronavirus. As the official Web site of The Hopi Tribe (2020) explains, “the virus does not move, people move it . . . if people stop moving, the virus stops moving and dies.” Because limiting movement is so important for slowing the spread of the coronavirus, we must begin to consider the social patterning of mobility (behavior related to traveling and sheltering-in-place). The fundamental question is whether certain populations are more or less mobile than others during the pandemic.

In this paper, we consider the association between state political ideology and population mobility during the initial stages of the coronavirus pandemic. Over the past several months, Republicans have received a great deal of media attention and public scrutiny regarding their pandemic attitudes and policy positions. On March 12, *The Intercept* reported that “Republicans Continue to Deny Coronavirus Threat as Public Health Official Warns of Catastrophe” (Lerner 2020). On March 16, *The Washington Post* proclaimed that “Red States Are Finally Starting to Google ‘Coronavirus’” (Tesler 2020). On March 17, *Vox* described “The Deep Ideological Roots of Trump’s Botched Coronavirus Response” (Beauchamp 2020). On April 1, *The Guardian* headlined, “‘That’s a Nasty, Snarky Question’: Trump’s Media assault Rages on in Midst of Coronavirus Crisis” (Smith 2020). On April 2, *The Hill* disclosed that “Georgia Governor Says He Didn’t Know Asymptomatic People Could Spread Coronavirus” (Budryk 2020). Although not representative of the political spectrum in United States, all of these reports (and many more like them) point to the same general concern: States with larger Republican populations and populations governed by Republicans may be especially resistant to public health recommendations because certain aspects of their political ideologies lead them to consistently deny, downplay, and misrepresent the coronavirus pandemic.

In the pages that follow, we explore relevant research concerning conservative political ideologies and recent political rhetoric surrounding the coronavirus pandemic. We then model state shelter-in-place rates and state mobility scores as a function of state political ideology (indicated by state-level Presidential and Gubernatorial electoral outcomes). After summarizing our key results, we discuss the contributions and limitations of our study. We end with important directions for future research on the social patterning of mobility during the coronavirus pandemic.

## Conservative Ideologies during the Partisan Pandemic

Our central argument is that politically conservative populations may be especially resistant to public health recommendations like staying home, social distancing, and wearing masks. This argument flows from the contextual thesis of political polarization, which states that ideological resistance to policy is greatest when “individuals feel their values, identity, or interests are threatened” (Nisbet, Cooper, and Garrett 2015:40). Sweeping public health recommendations during the coronavirus pandemic may be especially “dissonant” for Republican populations because they challenge several basic tenets of conservative political ideology, including (a) mistrust of the federal government, (b) mistrust of science (e.g., climate science and epidemiology), and (c) political misinformation (Benegal and Scruggs 2018; Berinsky 2015; Frank 2007; Graham et al. 2020; Motta, Stecula, and Farhart 2020; Nisbet et al. 2015; Swire et al. 2017).

Conservatives generally mistrust “big government” because it is often framed by conservative rhetoric as a malignant federal bureaucracy that exists to serve its own interests by extracting ever-increasing taxes and by diminishing personal freedom and liberty (Berinsky 2015; Frank 2007). While there is a longstanding tension between conservative views of “big government” and the desire to federally fund the military industrial complex and internal policing projects like Immigration and Customs Enforcement (ICE), the concept of the “deep state” has recently afforded some reconciliation. Because many conservatives view the “deep state” as a class of left-leaning, federal bureaucrats that operates beneath the normal levers of power to principally oppose conservative policies in general and the Trump administration in particular, Republicans

are able to hold two apparently contradictory positions simultaneously: The federal government is beneficial because it is uniquely suited to pursue conservative interests and detrimental because it is unable to achieve its full potential due to competing liberal interests that are hidden from the public and morally repugnant. In fact, Trump was elected in 2016, in part, by campaigning vigorously on the promise of “draining the swamp” of bureaucracy in Washington, D.C., by rooting out the problem of entrenched government officials.

Many Republicans also mistrust science because its proponents and products are often mobilized against conservative ideologies and interests (Benegal and Scruggs 2018; Motta 2018a, 2018b; Nisbet et al. 2015; Swire et al. 2017). Anti-intellectualism runs deep in American conservative politics and is commonly expressed through an adversarial relationship vis-à-vis science. For example, conservative scientists are regularly funded by corporations and industry to act as “merchants of doubt” and to shape public opinion and dilute scientific consensus on issues ranging from the dangers of smoking to the realities of climate change (Oreskes and Conway 2010). In a recent national poll of U.S. adults, Republicans were less likely than Democrats (27 percent vs. 43 percent) to report having “a great deal” of confidence in scientists to act “in the best interests of the public” (Pew Research Center 2019). In the same survey, the partisan divide extended to the appropriate role of scientists when conducting policy-relevant research and to faith in the fidelity of scientific reasoning. On one hand, Republicans were less likely than Democrats (43 percent vs. 73 percent) to believe that “scientists should take an active role in policy debates” (Pew Research Center 2019). On the other hand, more Republicans than Democrats (55 percent vs. 36 percent) believed that “scientists’ judgements are just as likely to be biased as other people’s” (Pew Research Center 2019).

Following the work of Matt Motta and colleagues (2020), we argue that conservative belief systems are likely to serve as an ideological basis for Republicans to resist public health recommendations and initiatives during the pandemic. The most important explanations include (a) mistrusting public health officials and health scientists (mistrust of science), (b) trusting Republican leadership and associates on matters related to health and health care (political misinformation), and (c) resisting business shutdowns and state stay-at-home restrictions (mistrust of government). These themes are clearly represented in opinion polls and media coverage concerning public responses to the pandemic.

Mistrust of public health officials and health scientists was perhaps most evident during the early stages of the pandemic when President Trump and his associates downplayed the threat as a “fraud” perpetrated by the “deep state,” as “fake news,” as a “liberal hoax,” and as an “impeachment scam” (Bunch 2020; Van Bavel 2020). Will Bunch (2020) notes that “downplaying the health warnings from white-coated eggheads with all their university degrees—in a way that amplified Trump and ridiculed media—was right in their wheelhouse.” Commenting on America’s distrust of experts during the pandemic, Eric Merkley (2020) argues that “the problem isn’t just partisanship; it’s the anti-intellectualism in American life.” Zack Beauchamp (2020) explains that the Republican response to the coronavirus is clearly imprinted with the “DNA” of “modern American conservatism” and “a disdain for the country’s intellectual elite.” In the first week of March, a national poll of U.S. adults showed that Republicans were less likely than Democrats (6 percent vs. 21 percent) to be “very worried” about the coronavirus (Frankovic 2020b). By the second week of March, another national poll of U.S. adults indicated that Republicans were still less likely than Democrats (45 percent vs. 74 percent) to be “very worried or somewhat” about the coronavirus (Sanders 2020). In the same poll, Republicans were also more likely than Democrats (29 percent vs. 58 percent) to believe that the threat of the coronavirus had been exaggerated.

Trust of Republican leadership and associates on matters related to health and health care was demonstrated during the month of April as President Trump shifted from downplaying the pandemic to blaming others like the CDC and the World Health Organization (WHO). During this

period, President Trump also began to receive increased scrutiny from the media and scientists for recommending a malaria drug (hydroxychloroquine) and an antibiotic (azithromycin) without adequate clinical evidence of safety and effectiveness. President Trump essentially generated adversarial institutional relationships by impugning public health organizations and by pushing reckless treatments on the general public. In the end, these actions forced public health and front-line medical professionals to openly challenge the authority and expertise of the President. According to Zeeshan Aleem (2020), “messaging from Trump and hard-right news outlets like *Fox News* had diverged from consensus among scientists and public health experts around the world.” While lamenting the “politicization of public health,” Robert Faris, research director at Harvard’s Berkman Klein Center for Internet & Society, noted that “having Trump and Fauci on the same public stage at the same time is an untenable position for right-wing media . . .” (Stanley-Becker 2020). Toward the end of April, a national poll of U.S. adults asked about levels of trust in the medical advice received from various sources (Grenier 2020). This poll showed that Republicans were more likely than Democrats to trust the “medical advice” of President Trump (75 percent vs. 8 percent) and Vice President Pence (67 percent vs. 8 percent). The poll also indicated that Republicans were less likely than Democrats to trust the WHO (24 percent vs. 74 percent), the CDC (60 percent vs. 76 percent), and Dr. Fauci (52 percent vs. 72 percent).

Finally, resistance to business shutdowns and stay-at-home restrictions was apparent with Trump-supported rallies and protests like “Operation Gridlock” and “You Can’t Close America” appearing across the country. Michael Shear and Sarah Mervosh (2020) speculate that “openly supporting those who challenge the stay-at-home orders could help the president re-energize the coalition of conservative Republicans and working-class populists who agree with the anti-government sentiment that helped power Mr. Trump’s election victory in 2016.” In the third week of March, a national poll of U.S. adults found that Republicans were less likely than Democrats to support various closures as “necessary steps to address the coronavirus,” including canceling sports and entertainment events (87 percent vs. 95 percent), closing K-12 schools (85 percent vs. 94 percent), avoiding large gatherings (82 percent vs. 92 percent), limiting restaurants to carry-out (78 percent vs. 91 percent), requiring non-essential businesses to close (61 percent vs. 81 percent), and postponing state primary elections (66 percent vs. 73 percent) (Pew Research Center 2020b). The only exception was that slightly more Republicans (96 vs. 94 percent) thought that it was necessary to restrict international travel to the United States. The same poll also indicated that Republicans were less likely (38 percent vs. 51 percent) to have changed their lives in a “major way” due to the “coronavirus” (Pew Research Center 2020a). Finally, in late April, a national poll of U.S. adults determined that more “very conservative Republicans” (49 percent) and Republicans in general (36 percent) than Democrats (8 percent) tended to think of stay-at-home orders as “a violation of constitutional rights” (Frankovic 2020a).

## Hypotheses

In accordance with these arguments, we developed three hypotheses to guide our analyses. Our first hypothesis (H1) is that states with a larger share of Trump votes in the 2016 presidential election and states with Republican governors will exhibit *lower* shelter-in-place rates and *higher* average mobility scores. In other words, states with greater support for Trump and states governed by Republicans will tend to travel *more* during the pandemic than states with less Trump support and states governed by Democrats. This hypothesis will be tested through the direct effects of 2016 state presidential election results and Republican Governor partisanship. Our second hypothesis (H2) is that trends toward rising shelter-in-place rates and declining mobility scores will be *less pronounced* in states with greater support for Trump and states with Republican governors. We anticipate that these states will be more reluctant to change their behavior over the study period and that reductions in travel during the pandemic will be, on average, *smaller* in

these states. This hypothesis will be tested through the moderation of state shelter-in-place and mobility trends (i.e., weekly variations in these outcomes) by 2016 election results and Republican Governor partisanship (i.e., week  $\times$  Trump votes and week  $\times$  Republican Governor). Our final hypothesis (H3) is that the effects of state stay-at-home orders on sheltering-in-place and mobility scores will be *less pronounced* in states with greater support for Trump and states with Republican governors. Put differently, we expect that state stay-at-home orders will have a *weaker* impact on sheltering-in-place and mobility in states with greater support for Trump and states with Republican governors. This hypothesis will be tested through the interaction of days with a state stay-at-home order and state political ideology (i.e., stay-at-home order  $\times$  Trump votes and stay-at-home order  $\times$  Republican Governor).

## Data

We use 10 weeks (February 24, 2020, to April 27, 2020) of first-party mobility data from *Cuebiq* (COVID-19 Mobility Insights 2020), political data from state public records, religion data from the 2010 *U.S. Religion Census* (Grammich et al. 2018), demographic characteristics from the 2018 *American Community Survey: 5-Year Estimates* (American Community Survey 2018) and the 2020 *Bureau of Labor Statistics* (U.S. Bureau of Labor Statistics 2020), and state stay-at-home orders from the *New York Times* (Mervosh, Lu, and Swales 2020). Data are limited to the contiguous United States because mobility estimates exclude Alaska and Hawaii. The District of Columbia is also omitted due to missing data on Governor's political party. All measures are state-level. Our final analytic sample size is 480 (48 states  $\times$  10 weeks).

## Measures

### *Mobility and Shelter-in-place*

Our outcome variables are mobility and shelter-in-place. *Cuebiq*, an offline intelligence and measurement marketing company, partners with 86 apps to collect first-party location data to understand population behavior during the coronavirus pandemic via Software Development Kit (SDK) technology. SDK technology improves accuracy and precision in location data collection by linking with cell phone operating systems, global positioning systems, and Wi-Fi signals. Anonymous and privacy compliant geo-behavioral data are collected for opted-in users, including movement and stops to determine dwell time and visit frequency at locations. Each day, always-on data collection accumulates, on average, 100 data points for approximately 15,000,000 cell phone users. The mobility index measures the average median distance traveled by all devices for the weeks of February 24 to April 20 for each state. Our shelter-in-place measure, defined by *Cuebiq*, represents the percent of users staying home (moving less than 330 feet from home) for the weeks of February 24 to April 20 for each state. This time frame was selected because it marks the first period of national coronavirus awareness and changing mobility across the United States. In preliminary analyses, we assessed the construct validity of the mobility index and shelter-in-place measure by testing associations with the number of days with a state stay-at-home order. Our analyses revealed moderate inverse associations for mobility ( $r = -.40$ ,  $p < .001$ ) and shelter-in-place ( $r = .46$ ,  $p < .001$ ). In other words, states with longer periods of stay-at-home orders tend to exhibit lower mobility scores and higher shelter-in-place rates.

### *Political Ideology*

Our focal predictor variables measure political ideology through state-level Presidential and Gubernatorial electoral outcomes. Our first measure is the percent of votes cast for Donald J.

**Table 1.** Descriptive Statistics for Selected Study Variables.

	Variable range	Variable mean	Standard deviation
Shelter-in-place (February 24–April 27)	0.16 to 0.59	0.35	0.10
Mobility index (February 24–April 27)	0.84 to 4.12	3.02	0.75
Percent Trump votes (2016)	0.30 to 0.69	0.50	0.10
Republican Governor (2020)	0 to 1	0.52	
Median age (2018)	30.7 to 44.6	38.40	2.33
Percent black (2018)	0.00 to 0.38	0.11	0.09
Lagged unemployment rate (2020)	2.20 to 6.90	3.69	0.94
Population density (2018)	5.99 to 1,207	204	266
Percent evangelical (2010)	0.02 to 0.42	0.16	0.11
Home order days (February 24–April 27)	0 to 7	3.12	3.40
Shelter-in-place baseline (February 24–March 2)	0.16 to 0.26	0.21	0.02
Mobility baseline (February 24–March 2)	3.17 to 4.11	3.83	0.21

Note.  $n = 480$ . All measures are state-level.

Trump in the 2016 presidential election for each state. This continuous measure ranges from 30 percent (Vermont) to 69 percent (West Virginia). Our second measure is the Governor's political party for each state (1 = Republican affiliation; 0 = Democrat affiliation).

### Background Variables

Following recent research (Hill, Gonzalez, and Burdette 2020), our analyses include a range of state-level background variables that are at least theoretically related to population mobility and political ideology, including (1) median age, (2) percent black, (3) one-month lagged unemployment rate, (4) population density, (5) percent evangelical Christian, (6) number of days with a state stay-at-home order for each measurement period, and (7) baseline levels of sheltering-in-place (mean percentage shelter-in-place for the first two weeks of the study period) or mobility (mean mobility scores for the first two weeks of the study period). Median age, percent black, and population density are five-year estimates from the 2018 *American Community Survey*. The monthly unemployment rate was obtained from the 2020 *Bureau of Labor Statistics*. Percent evangelical Christian was collected through the 2010 *U.S. Religion Census*. Data on state stay-at-home orders as of April 14, 2020, were collected by the *New York Times*.

### Analysis

Our analytic strategy proceeds in three steps. In Table 1, we present descriptive statistics for all study variables, including variable ranges, means, and standard deviations. In Table 2, we fit direct effect models of state shelter-in-place rates and mobility scores using ordinary least squares regression with state clustered robust standard errors to account for serial correlation and heteroskedasticity (Robitzsch and Grund 2020). Models 1a and 1b regress our outcomes on dummy variables for week and political variables. These models test whether state shelter-in-place rates and mobility scores vary across the 10-week study period and by state political ideology. We use dummy variables for week to capture thresholds in shelter-in-place and mobility trends. The question is whether movement trends are changing over time and whether states with greater Trump support and states with Republican governors tend to exhibit lower average state shelter-in-place rates and higher average mobility scores. Models 2a and 2b adjust for median age,

**Table 2.** Clustered Robust Regression of Shelter-in-place Rates and Mobility Scores (Direct Effects).

	Shelter-in-place		Mobility	
	Model 1a	Model 2a	Model 1b	Model 2b
Week (March 2) <sup>a</sup>	-0.003** (0.001)	-0.003** (0.001)	0.012*** (0.003)	0.011** (0.003)
Week (March 29) <sup>a</sup>	0.020*** (0.001)	0.020*** (0.001)	-0.045*** (0.005)	-0.046*** (0.006)
Week (March 16) <sup>a</sup>	0.160*** (0.005)	0.160*** (0.005)	-0.689*** (0.026)	-0.681*** (0.024)
Week (March 23) <sup>a</sup>	0.192*** (0.007)	0.181*** (0.006)	-1.465*** (0.073)	-1.331*** (0.057)
Week (March 30) <sup>a</sup>	0.206*** (0.007)	0.185*** (0.005)	-1.383*** (0.065)	-1.142*** (0.049)
Week (April 6) <sup>a</sup>	0.199*** (0.006)	0.174*** (0.005)	-0.879*** (0.049)	-0.563*** (0.051)
Week (April 13) <sup>a</sup>	0.185*** (0.007)	0.160*** (0.005)	-1.553*** (0.079)	-1.236*** (0.067)
Week (April 20) <sup>a</sup>	0.241*** (0.006)	0.216*** (0.006)	-1.079*** (0.061)	-0.762*** (0.055)
Week (April 27) <sup>a</sup>	0.221*** (0.006)	0.196*** (0.005)	-0.943*** (0.059)	-0.626*** (0.054)
Percent Trump votes (2016)	-0.237*** (0.040)	-0.059** (0.022)	1.830*** (0.495)	1.088** (0.359)
Republican governor (2020)	-0.013 (0.008)	-0.001 (0.004)	0.157 (0.100)	-0.014 (0.048)
Median age (2018)		-0.000 (0.001)		0.015 (0.011)
Percent black (2018)		-0.054* (0.023)		0.958** (0.302)
Lagged unemployment (2020)		0.001 (0.002)		-0.045 (0.031)
Population density (2018)		0.000*** (0.000)		-0.000* (0.000)
Percent evangelical (2014)		-0.064** (0.024)		0.193 (0.329)
Home order days (February 24–April 27)		0.004*** (0.001)		-0.049*** (0.008)
Shelter-Mobility Baseline (February 24–March 2)		0.766*** (0.119)		1.161*** (0.176)

Note.  $n = 480$ . All measures are state-level.

<sup>a</sup>Reference group is week February 24.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$  (two-tailed test).

percent black, the lagged unemployment rate, population density, percent evangelical, number of days with a state stay-at-home order, and baseline levels of sheltering-in-place rates or mobility. These models test whether political variables are associated with movement net of state demographic characteristics and baseline movement for the first two weeks of the study period.

In Table 3 and Figures 1 to 5, we present our moderation models. Models 1a and 1b of Table 3 add interaction terms to the regression equation to formally test whether shelter-in-place

**Table 3.** Clustered Robust Regression of Shelter-in-place Rates and Mobility Scores (Moderation Effects).

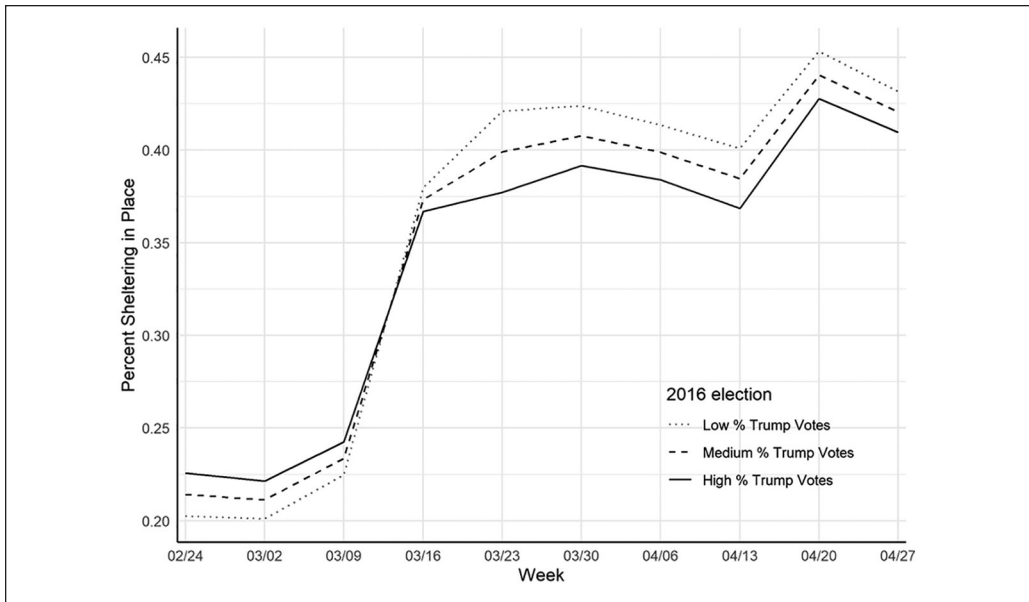
	Shelter-in-place		Mobility	
	Model 1a	Model 2a	Model 1b	Model 2b
Week (March 2) <sup>a</sup>	0.004 (0.005)	-0.003** (0.001)	-0.015 (0.017)	0.011** (0.003)
Week (March 9) <sup>a</sup>	0.033*** (0.008)	0.020*** (0.001)	-0.104*** (0.028)	-0.046*** (0.006)
Week (March 16) <sup>a</sup>	0.249*** (0.023)	0.159*** (0.005)	-1.187*** (0.105)	-0.671*** (0.023)
Week (March 23) <sup>a</sup>	0.353*** (0.026)	0.176*** (0.005)	-2.574*** (0.317)	-1.271*** (0.056)
Week (March 30) <sup>a</sup>	0.332*** (0.027)	0.179*** (0.005)	-2.586*** (0.234)	-1.064*** (0.051)
Week (April 6) <sup>a</sup>	0.316*** (0.026)	0.168*** (0.005)	-1.686*** (0.187)	-0.491*** (0.055)
Week (April 13) <sup>a</sup>	0.310*** (0.031)	0.154*** (0.005)	-3.094*** (0.299)	-1.164*** (0.066)
Week (April 20) <sup>a</sup>	0.348*** (0.027)	0.210*** (0.006)	-2.098*** (0.269)	-0.690*** (0.056)
Week (April 27) <sup>a</sup>	0.319*** (0.025)	0.190*** (0.006)	-1.847*** (0.264)	-0.554*** (0.055)
Percent Trump votes (2016)	0.116*** (0.031)	0.038 (0.023)	-0.468 (0.341)	-0.068 (0.340)
Home order days (February 24 to April 27)	0.002*** (0.001)	0.019*** (0.003)	-0.030*** (0.008)	-0.228*** (0.035)
Week (March 2) × Trump votes	-0.015 (0.009)		0.052 (0.034)	
Week (March 9) × Trump votes	-0.026 (0.015)		0.116* (0.054)	
Week (March 16) × Trump votes	-0.179*** (0.041)		1.011*** (0.196)	
Week (March 23) × Trump votes	-0.335*** (0.047)		2.398*** (0.572)	
Week (March 30) × Trump votes	-0.277*** (0.047)		2.720*** (0.430)	
Week (April 6) × Trump votes	-0.263*** (0.047)		2.039*** (0.319)	
Week (April 13) × Trump votes	-0.278*** (0.055)		3.520*** (0.555)	
Week (April 20) × Trump votes	-0.243*** (0.048)		2.469*** (0.487)	
Week (April 27) × Trump votes	-0.226*** (0.046)		2.238*** (0.476)	
Home order days × Trump votes		-0.029*** (0.005)		0.351*** (0.065)

Note.  $n = 480$ . All measures are state-level. All models control for Governor's political party, median age, percent black, lagged unemployment, population density, percent evangelical, and shelter-in-place or mobility baseline.

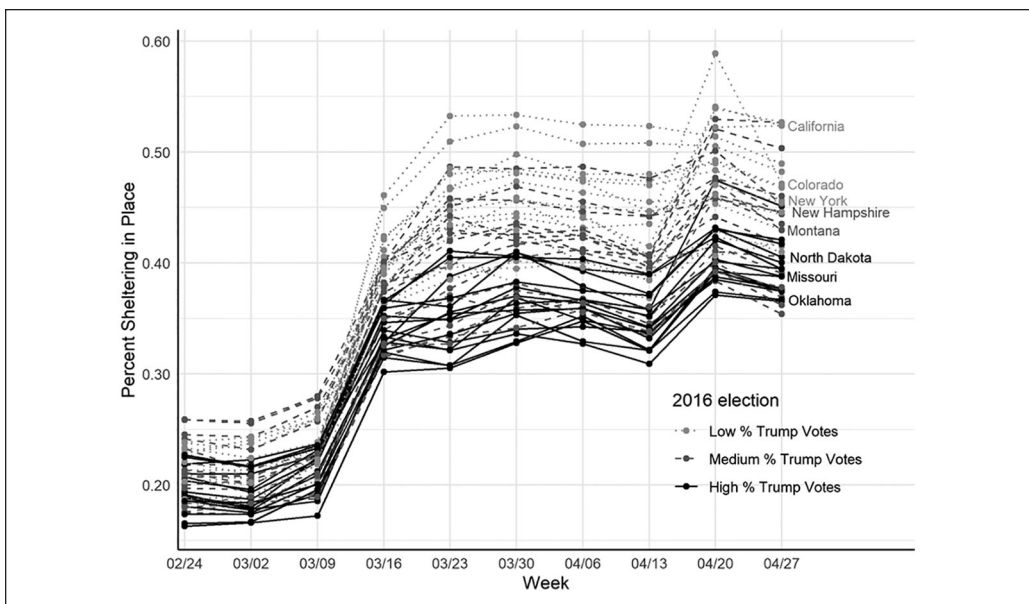
<sup>a</sup>Reference group is week February 24.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$  (two-tailed test).





**Figure 1.** Shelter-in-place trends by 2016 presidential election results.



**Figure 2.** Shelter-in-place trends by 2016 presidential election results and state.

rates and state mobility trends (weekly variations in travel patterns) vary by state political variables. The question here is whether state shelter-in-place rates and mobility scores decline at slower rates in states with greater support for Trump and Republican governors. Figures 1 and 3 provide graphical illustrations of Models 1a and 1b: adjusted shelter-in-place trends (Figure 1) and mobility trends (Figure 3) by 2016 presidential election results. Figure 2 expands on

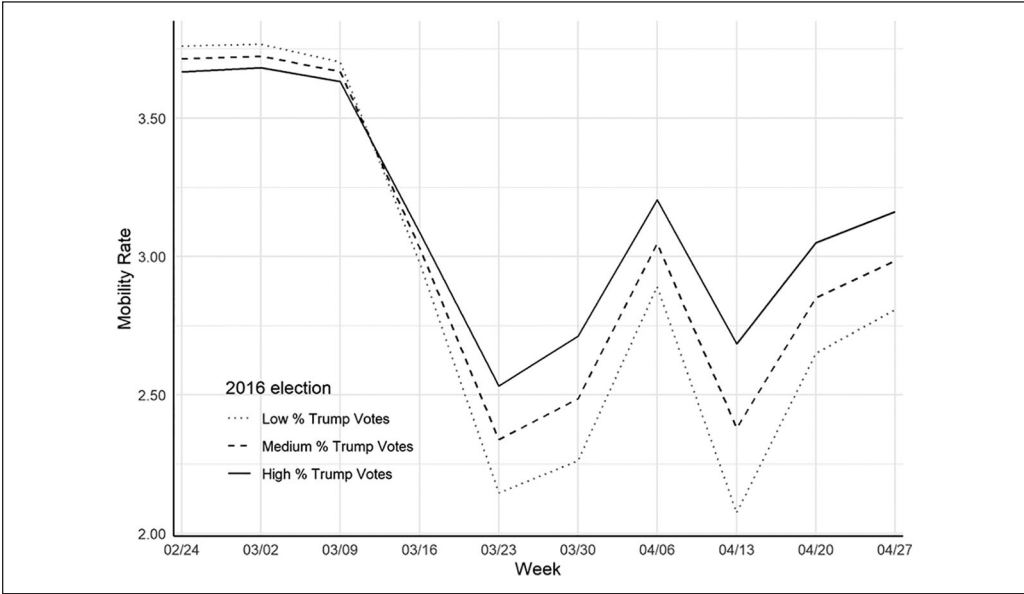


Figure 3. Mobility trends by 2016 presidential election results.

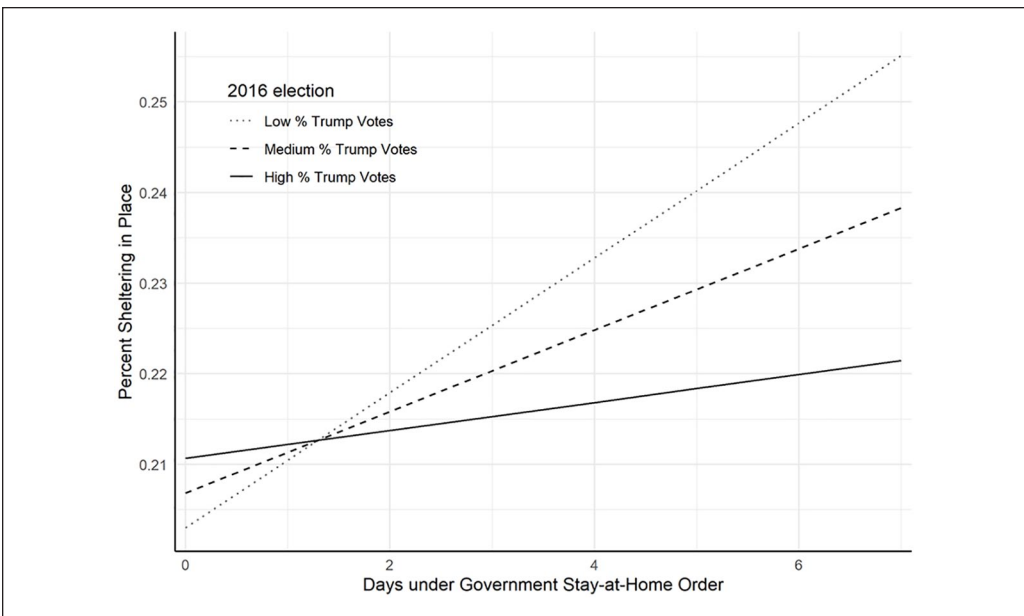
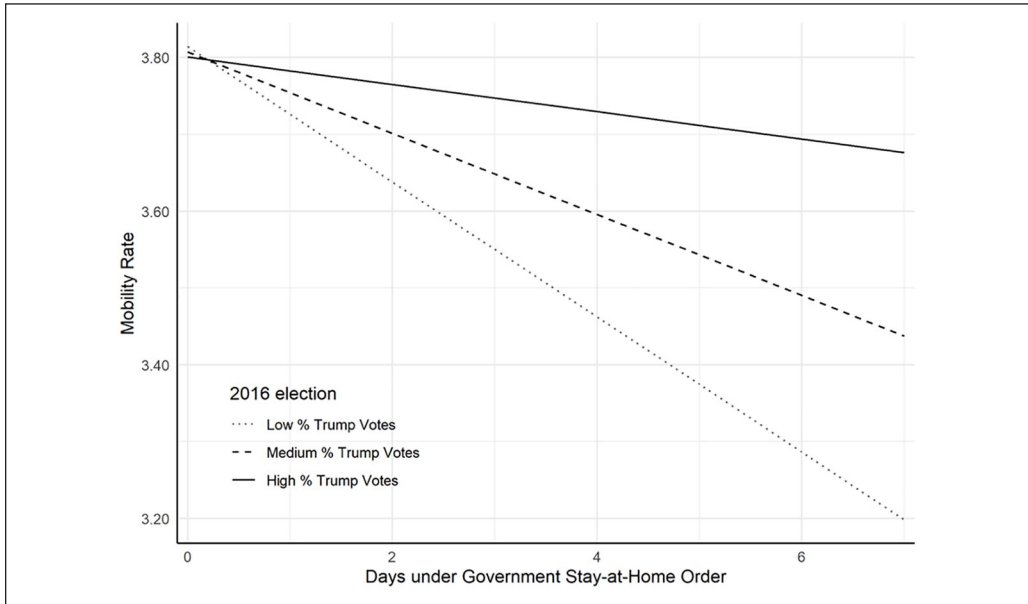


Figure 4. The association between stay-at-home order and shelter-in-place rates by 2016 presidential election results.

Figure 1 by showing the raw shelter-in-place trends by 2016 Presidential Election Results and State. For ease of presentation, we highlight eight exemplar states to represent high, moderate, and low shelter-in-place rates. Finally, models 2a and 2b add interaction terms to test whether the association between state stay-at-home order and movement varies by state political variables. The question here is whether the effects of stay-at-home orders are weaker in states with greater



**Figure 5.** The association between stay-at-home order and mobility scores by 2016 presidential election results.

support for Trump and Republican governors. Figures 4 and 5 provide graphical illustrations of Models 2a and 2b: the effects of stay-at-home orders on shelter-in-place rates (Figure 4) and mobility scores (Figure 5) by 2016 presidential election results.

## Results

### Descriptive Statistics

According to Table 1, approximately 35 percent of cell phone users sheltered-in-place (moved less than 330 feet from their home) for the weeks of February 24 to April 27. We also observe an average mobility score (median distance traveled) of 3,020 m ( $3.02 \times 1,000$  m) or just over 3 km (nearly 2 mi). We find an overall trend toward increasing shelter-in-place rates and declining mobility scores over the study period. While state shelter-in-place rates were lowest during the weeks of February 24 and March 2 and highest during the week of April 20, state mobility was highest during the weeks of February 24 and March 2 and lowest during the week of April 13. In terms of state political variables, Trump won, on average, 50 percent of the 2016 presidential election votes cast in each state. Trump won 60 percent of the 48 contiguous states included in our study. Half of the governors included in our analyses identify as Republican.

### Direct Effects

In Table 2, Models 1a and 2a compare shelter-in-place rates for the first week of our study period (February 24) to each of the nine weeks from March 2 to April 27. In Model 1a, we observe that shelter-in-place rates for the week of March 2 are *lower than* those for the week of February 24. We then find *higher* shelter-in-place rates for each of the eight weeks from March 9 to April 27 than for the week of February 24. We show that states with larger percentages of Trump voters tend to exhibit *lower* shelter-in-place rates. In Model 2a, we see that this general pattern persisted

with adjustments for median age, percent black, the lagged unemployment rate, population density, percent evangelical, number of days with a state stay-at-home order, and baseline levels of sheltering-in-place. Across models, Governor's political party is unrelated to sheltering-in-place. In other words, shelter-in-place rates are *comparable* for states governed by Republicans and Democrats.

Models 1b and 2b of Table 2 compare mobility scores for the first week of our study period to each of the subsequent nine weeks. In Model 1b, we find that mobility scores for the week of March 2 are *higher than* those for the week of February 24. We then observe *lower* mobility scores for each of the eight weeks from March 9 to April 27 than for the week of February 24. We show that states with larger percentages of Trump voters tend to exhibit *higher* mobility scores. In Model 2b, we see this general pattern also persisted with control variables. Across models, Governor's political party is unrelated to mobility scores. In other words, mobility scores are *comparable* for states governed by Republicans and Democrats.

### Moderation Effects

In Table 3, Model 1a tests whether weekly trends in shelter-in-place rates vary by level of support for Trump in the 2016 presidential election. Although shelter-in-place trends did not vary according to level of Trump support for the weeks of March 2 and March 9, shelter-in-place rates increased at *slower* rates in states with larger percentages of Trump voters for the subsequent seven weeks under study (March 16 to April 27). Figure 1 illustrates that states with more Trump supporters tend to exhibit *lower* shelter-in-place rates. Figure 2 elaborates Figure 1 by stratifying raw shelter-in-place trends by 2016 election results and state. States with a high percentage of Trump voters (the highest third of the vote distribution) are indicated by black trend lines. These lines are, on average, clustered below the lighter trend lines for medium (middle third of the vote distribution) and low (the lowest third of the vote distribution) Trump support. These patterns confirm that states with more Trump supporters tend to exhibit more *modest* trends toward sheltering-in-place over the last 6 weeks of the study period. By the week of April 27, states like California and Colorado (states won by Hillary Clinton) had the *highest* shelter-in-place rates while states like Oklahoma and Missouri (states won by Donald Trump) had the *lowest* shelter-in-place rates.

Model 1b replicates Model 1a by testing whether weekly trends in mobility scores vary by level of support for Trump. Although mobility scores did not vary according to level of Trump support for the week of March 2, mobility scores were consistently *higher* in states with larger percentages of Trump voters for the subsequent eight weeks under study (March 9–April 27). Figure 3 shows that states with more Trump supporters exhibited *higher* mobility scores over the last several weeks of the study period.

Model 2a of Table 3 shows that the *positive* association between number of days with a state stay-at-home order and shelter-in-place rates is *attenuated* in states with larger percentages of Trump voters. Model 2b tested the same interaction in the context of mobility scores. These results indicate that the *inverse* association between number of days with a state stay-at-home order and mobility scores is *offset* in states with larger percentages of Trump voters. Figures 4 and 5 demonstrate that state stay-at-home orders had a *weaker* impact on sheltering-in-place and mobility scores in states with more Trump supporters. In other words, states with a larger share of Trump votes are more resistant to state stay-at-home orders.

We also considered the moderating influence of Governor's political party (not shown). These moderation patterns are more sporadic than those observed for the results of the 2016 presidential election. Trends in state shelter-in-place rates were *comparable* for states governed by Republicans and Democrats for the weeks of March 2 ( $b = .001, p > .05$ ), March 9 ( $b = .004, p > .05$ ), March 16 ( $b = .018, p > .05$ ), March 30 ( $b = .016, p > .05$ ), April 6 ( $b = .015, p > .05$ ),

April 13 ( $b = .017, p > .05$ ), and April 27 ( $b = .019, p > .05$ ). We also observed that state shelter-in-place rates increased at *slower* rates in states governed by Republicans for the weeks of March 23 ( $b = -.03, p < .05$ ) and April 20 ( $b = -.02, p < .05$ ). Trends in mobility scores were *comparable* for states governed by Republicans and Democrats for the weeks of March 2 ( $b = .006, p > .05$ ), March 9 ( $b = .015, p > .05$ ), March 30 ( $b = .23, p > .05$ ), and April 6 ( $b = .14, p > .05$ ). When compared with the week of February 24, state mobility scores declined at *slower* rates in states with Republican governors for the weeks of March 16 ( $b = .11, p < .05$ ), March 23 ( $b = .31, p < .05$ ), April 13 ( $b = .41, p < .01$ ), April 20 ( $b = .26, p < .05$ ), and April 27 ( $b = .24, p < .05$ ). Although the association between number of days with a state stay-at-home order and shelter-in-place rates was *comparable* for states governed by Republicans and Democrats ( $b = -.002, p > .05$ ), the positive association between number of days with a state stay-at-home order and mobility scores was *offset* in states governed by Republicans ( $b = .04, p < .05$ ).

### Supplemental Analyses

In supplemental analyses, we estimated our regression models using robust regression with the M estimator and iterated re-weighted least squares (IWLS) to down-weight the influence of any outliers (Jorgenson 2007; Venables and Ripley 2002). These results were substantively identical to our focal regression models with state clustered robust standard errors. We also replicated our focal analyses using a dichotomous indicator of whether Trump won a state in the 2016 presidential election. In other sensitivity analyses, we examined total population size, percent Hispanic, percent with a college degree, per capita income, income inequality (Gini), and percent obese. In each case, these analyses failed to alter any of our substantive conclusions.

### Discussion

In this paper, we considered the association between state political ideology and population mobility during the coronavirus (COVID-19) pandemic. Our first hypothesis (H1) indicated that states with a larger share of Trump votes in the 2016 presidential election and states with Republican governors would exhibit *lower* shelter-in-place rates and *higher* average mobility scores. This hypothesis received mixed support. We found *lower* shelter-in-place rates and *higher* mobility scores in states with larger percentages of Trump voters, and these associations persisted with adjustments for median age, percent black, the lagged unemployment rate, population density, percent evangelical, number of days with a state stay-at-home order, and baseline levels of sheltering-in-place and mobility. However, we could not replicate these patterns with Governor's political party. In adjusted models, shelter-in-place rates and average mobility scores were *comparable* in states governed by Republicans and Democrats. While states with more Trump voters tended to travel more during the pandemic, states governed by Republicans failed to show the same pattern.

Our second hypothesis (H2) stated that trends toward rising shelter-in-place rates and declining mobility scores would be *less pronounced* in states with greater support for Trump and states with Republican governors. This hypothesis received consistent support in the case of Trump votes. Shelter-in-place rates increased and average mobility scores declined at *slower* rates in states with larger percentages of Trump voters. Although the moderating influence of Governor's party was much less apparent, there was at least some evidence to suggest that shelter-in-place rates increased and average mobility scores declined at *slower* rates in states governed by Republicans. States with more Trump voters and, to a lesser extent, states governed by Republicans were *more reluctant* to change their mobility trajectories over the study period.

Our final hypothesis (H3) specified that the effects of state stay-at-home orders on sheltering-in-place and mobility scores would be *less pronounced* in states with greater support for Trump and states with Republican governors. This hypothesis also received consistent support in the case of Trump votes. State stay-at-home orders had a *weaker* impact on sheltering-in-place and mobility scores in states with larger percentages of Trump voters. Although we observed that the association between number of days with a state stay-at-home order and mobility scores was *offset* in states with Republican governors, we could not replicate this pattern with the sheltering-in-place outcome. For the most part, stay-at-home orders have been less indicative of sheltering-in-place and mobility restrictions in states with more Trump voters and Republican governors.

To our knowledge, this is the first empirical study of political contextual variations in coronavirus pandemic behavior. Our work is important because it confirms that Trump-supporting populations and, to a lesser extent, populations governed by Republicans are more apt to engage in risky pandemic lifestyles. Our findings are novel in the sense that they clearly demonstrate the moderating effects of political ideology on dynamic state-level behavior (trends in pandemic movement) and policy (state stay-at-home orders). Our results are generally consistent with individual-level research showing that people who identify as political conservatives tend to report fewer pandemic practices like social distancing and using hand sanitizer (Perry, Whitehead, and Grubbs 2020). There is even some recent evidence to suggest that people with more favorable attitudes toward Trump tend to report stronger intentions to defy social distancing guidelines and state stay-at-home orders (Graham et al. 2020). When considered cumulatively, the findings of the current study and prior work seem to suggest that Trump supporters and other political conservatives may be especially likely to acquire and spread the coronavirus.

Because the coronavirus is so highly contagious, any ideological resistance to public health recommendations could present an existential threat to society. We live in precarious times. As President Trump boldly refuses to wear a face mask, Americans continue to question the importance of personal protective equipment (Breuninger and Wilkie 2020). In the middle of a pandemic, states are opening to “restart their economies” (Collinson 2020). Within hours of President Trump calling for ways to inject disinfectants into the human body, poison control centers around the country began to receive calls concerning exposures to bleach and other household cleaners (Folley 2020). In accordance with the contextual thesis of political polarization (Nisbet et al. 2015), we need to seriously consider ways of overcoming ideological barriers to vital pandemic responses, including (a) mistrust of the federal government, (b) mistrust of science, and (c) political misinformation.

We recognize that any effective strategies or interventions must systematically address obstacles related to motivated cognition. When individuals are socialized through repeated exposures to political messaging from media and political leaders, they are generally motivated to ignore any information that challenges their established worldviews (Benegal and Scruggs 2018; Berinsky 2015; Motta et al. 2020; Swire et al. 2017). A recent study by Salil Benegal and Lyle Scruggs (2018:61) demonstrates that the partisan divide on climate change may be bridged by “highlighting the views of elite Republicans who acknowledge the scientific consensus on anthropogenic climate change.” These researchers also suggest that their findings may have “broader implications for understanding how to correct misinformation and conspiracy theories in other political contexts” (Benegal and Scruggs 2018:62). If this is true, Republican political ideology could be challenged by more media attention devoted to well-known Republican leaders speaking about the importance of public health guidelines. Of course, it will be extremely difficult to find any prominent Republicans to speak against their own political interests. Republican governors of blue states could be viable candidates for a national spotlight.

We acknowledge that our findings are somewhat puzzling in that they are more consistent for Trump votes than for Republican governorships. While governors tend to have more direct influence over movement through their capacity to issue executive emergency orders to close

public-serving businesses and mandate state shelter-in-place policies, Republican governors have not been uniform in their response. There are two primary explanations for this. The first explanation is mixed political leadership. Republicans control 26 of 50 governorships, including left-leaning states like Maryland, Massachusetts, New Hampshire, and Vermont that have reliably voted for Democrats in presidential elections over the past two decades. Individuals in blue states with red governors may exhibit political ideological characteristics that are more closely akin to states with Democrat governors. The second explanation is that while Republican governors typically follow the policies and preferences of the current federal government, there is variability in their executive responses (e.g., state stay-at-home orders) and the degree to which they are beholden to the Trump administration for electoral survival. For example, public polling from late 2019 suggests that the four Republican governors in states carried by Hillary Clinton (mentioned above) are among the most popular (Morning Consult 2020). Their popularity may insulate them from pressure to adopt more hardline conservative policy positions during the pandemic.

We also note that our analyses are limited in three key respects. Because we are currently in the early stages of the pandemic, we were unable to assess concurrent changes in our state-level predictors across years. Although our data suggest that states with more Trump voters and states with Republican governors tend to be more mobile during the coronavirus pandemic, we cannot conclude that Trump supporters or Republicans per se are more mobile without individual-level data (e.g., Graham et al. 2020; Perry et al. 2020). Finally, our mobility data are also limited in the sense that they are based on aggregated geo-behavioral data for opted-in users, not probability samples in states. We are nevertheless encouraged by the fact that our mobility scores are predictably associated with a range of variables.

Despite these limitations, we provided the first dynamic empirical study of state political ideology and population mobility during the coronavirus (COVID-19) pandemic. Our analyses consistently showed that states with more Trump supporters and, to a lesser extent, states with Republican governors tended to travel more and were more resistant to public health recommendations and state stay-at-home orders during the pandemic. Our analyses are important because they contribute to our understanding of the social patterning of pandemic mobility, which is ultimately relevant to slowing the spread of the coronavirus. More research is needed to replicate our findings using longer longitudinal designs and data collected at different levels of analyses, including the county and individual levels. As more valid and reliable epidemiological data become available, we will need to assess whether state infection and mortality rates also vary according to state political ideology. Future work should continue to consider the social patterning of pandemic mobility more broadly, including, for example, understanding the role of state dynamics related to aging and structural racism. Research along these lines would provide a more thorough understanding of the impact of social and ideological forces on pandemic behavior.

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## References

- Aleem, Zeeshan. 2020. "A New Poll Shows a Startling Partisan Divide on the Dangers of the Coronavirus: Most Democrats Are Lot More Worried than Republicans." *Vox*, March 15. Retrieved November 26, 2020 (<https://www.vox.com/2020/3/15/21180506/coronavirus-poll-democrats-republicans-trump>).
- American Community Survey. 2018. "American Community Survey: 5-year Estimates." Retrieved November 26, 2020 ([https://www.census.gov/programs-surveys/acs/news/data-releases/2018/release.html#par\\_textimage](https://www.census.gov/programs-surveys/acs/news/data-releases/2018/release.html#par_textimage)).
- Beauchamp, Zack. 2020. "The Deep Ideological Roots of Trump's Botched Coronavirus Response: How the GOP's Long War on Expertise Sabotaged America's Fight against the Pandemic." *Vox*, March 17. Retrieved November 26, 2020 (<https://www.vox.com/policy-and-politics/2020/3/17/21176737/coronavirus-covid-19-trump-response-expertise>).
- Benegal, Salil and Lyle Scruggs. 2018. "Correcting Misinformation about Climate Change: The Impact of Partisanship in an Experimental Setting." *Climatic Change* 14:861–80.
- Berinsky, Adam. 2015. "Rumors and Health Care Reform: Experiments in Political Misinformation." *British Journal of Political Science* 47:241–62.
- Breuninger, Kevin and Christina Wilkie. 2020. "Trump Says CDC Advises Cloth Masks to Protect against Coronavirus, but He Will Not Wear One." *CNBC*, April 3. Retrieved November 26, 2020 (<https://www.cnbc.com/2020/04/03/trump-cdc-recommends-cloth-face-covering-to-protect-against-coronavirus.html>).
- Budryk, Zack. 2020. "Georgia Governor Says He Didn't Know Asymptomatic People Could Spread Coronavirus." *The Hill*, April 2. Retrieved November 26, 2020 (<https://thehill.com/homenews/state-watch/490758-georgia-governor-says-he-didnt-know-asymptomatic-people-could-spread>).
- Bunch, Will. 2020. "GOP, Fox News Have Waged War on Science. With Coronavirus, Will Their Aging Fans Pay the Price?" *The Philadelphia Inquirer*, March 15. Retrieved November 26, 2020 (<https://www.inquirer.com/health/coronavirus/coronavirus-republicans-denial-fox-news-trump-war-on-science-20200315.html>).
- Centers for Disease Control and Prevention. 2020. "How to Protect Yourself & Others." Retrieved November 26, 2020 (<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>).
- Collinson, Stephen. 2020. "Divisions on Battling Coronavirus Deepen as Trump and Southern States Push Opening." *CNN*, April 22. Retrieved November 26, 2020 (<https://www.cnn.com/2020/04/22/politics/donald-trump-coronavirus-economy/index.html>).
- Coronavirus Resource Center. 2020. "COVID-19 Dashboard." Center for Systems Science and Engineering (CSSE) at Johns Hopkins University. Retrieved November 26, 2020 (<https://coronavirus.jhu.edu/map.html>).
- COVID-19 Mobility Insights. 2020. "Cuebiq's Mobility Index Analysis." Retrieved November 26, 2020 (<https://help.cuebiq.com/hc/en-us/articles/360041285051-Cuebiq-s-COVID-19-Mobility-Insights>).
- Folley, Aris. 2020. "Calls to Poison Control Centers Spike after Trump Disinfectant Comments." *The Hill*, April 26. Retrieved November 26, 2020 (<https://thehill.com/policy/healthcare/494744-poison-control-centers-report-increase-in-calls-pertaining-to-exposure-to>).
- Frank, Thomas. 2007. *What's the Matter with Kansas?* New York: Henry Holt.
- Frankovic, Kathy. 2020a. "A Majority of Republicans and Democrats Are Now Wearing Face Masks." *YouGov*, April 23. Retrieved November 26, 2020 (<https://today.yougov.com/topics/politics/articles-reports/2020/04/23/republicans-and-democrats-wear-masks>).
- Frankovic, Kathy. 2020b. "As Coronavirus Cases Increase, So Does American Concern." *YouGov*, March 7. Retrieved November 26, 2020 (<https://today.yougov.com/topics/politics/articles-reports/2020/03/06/coronavirus-cases-increase-so-does-american-concer>).
- Graham, Amanda, Frank Cullen, Justin Pickett, Cheryl Jonson, Murat Haner, and Melissa Sloan. 2020. "Faith in Trump, Moral Foundations, and Social Distancing Defiance during the Coronavirus Pandemic." *Socius* 6:1–23.
- Grammich, Clifford, Kirk Hadaway, Richard Houseal, Dale Jones, Alexei Krindatch, Richie Stanley, and Richard Taylor. 2018. "U.S. Religion Census: Religious Congregations and Membership Study, 2010 (State File)." Retrieved November 26, 2020 (<http://www.thearda.com/Archive/Files/Descriptions/RCSST10.asp>).



- Grenier, Andrew. 2020. "75% of Republicans Trust Trump's Medical Advice." *YouGov*, April 24. Retrieved November 26, 2020 (<https://today.yougov.com/topics/politics/articles-reports/2020/04/24/75-republicans-trust-trumps-medical-advice>).
- Hill, Terrence, Kelsey Gonzalez, and Amy Burdette. 2020. "The Blood of Christ Compels Them: State Religiosity and State Population Mobility during the Coronavirus (COVID-19) Pandemic." *Journal of Religion and Health* 59:2229–42.
- Jorgenson, Andrew. 2007. "Foreign Direct Investment and Pesticide use Intensity in Less-developed Countries: A Quantitative Investigation." *Society and Natural Resources* 20:73–83.
- Lerner, Sharon. 2020. "Republicans Continue to Deny Coronavirus Threat as Public Health Official Warns of Catastrophe." *The Intercept*, March 12. Retrieved November 26, 2020 (<https://theintercept.com/2020/03/12/republicans-continue-to-deny-coronavirus-threat-as-public-health-official-warns-of-catastrophe/>).
- Merkley, Eric. 2020. "Many Americans Deeply Distrust Experts So Will They Ignore the Warnings about Coronavirus?" *The Washington Post*, March 19. Retrieved November 26, 2020 (<https://www.washingtonpost.com/politics/2020/03/19/even-with-coronavirus-some-americans-deeply-distrust-experts-will-they-take-precautions/>).
- Mervosh, Sarah, Denise Lu, and Vanessa Swales. 2020. "See Which States and Cities Have Told Residents to Stay at Home." *The New York Times*, April 20. Retrieved November 26, 2020 (<https://www.nytimes.com/interactive/2020/us/coronavirus-stay-at-home-order.html>).
- Morning Consult. 2020. "Morning Consult's Governor Approval Rankings." Retrieved May 1 (<https://morningconsult.com/governor-rankings/>).
- Motta, Matt. 2018a. "The Dynamics and Political Implications of Anti-intellectualism in the United States." *American Politics Research* 46:465–98.
- Motta, Matt. 2018b. "The Polarizing Effect of the March for Science on Attitudes toward Scientists." *Political Science & Politics* 51:782–88.
- Motta, Matt, Dominik Stecula, and Christina Farhart. 2020. "How Right-leaning Media Coverage of COVID-19 Facilitated the Spread of Misinformation in the Early Stages of the Pandemic in the US." *Canadian Journal of Political Science* 53:335–42.
- Nisbet, Erik, Kathryn Cooper, and R. Kelly Garrett. 2015. "The Partisan Brain: How Dissonant Science Messages Lead Conservatives and Liberals to (Dis)Trust Science." *The ANNALS of the American Academy of Political and Social Science* 658:36–66.
- Oreskes, Naomi and Erik Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscure the Truth on Issues from Tobacco Smoke to Climate Change*. New York: Bloomsbury Press.
- Perry, Samuel, Andrew Whitehead, and Joshua Grubbs. 2020. "Culture Wars and COVID-19 Conduct: Christian Nationalism, Religiosity, and Americans' Behavior during the Coronavirus Pandemic." *Journal for the Scientific Study of Religion* 59:405–16.
- Pew Research Center. 2019. "Trust and Mistrust in Americans' Views of Scientific Experts." Retrieved November 26, 2020 (<https://www.pewresearch.org/science/2019/08/02/trust-and-mistrust-in-americans-views-of-scientific-experts/>).
- Pew Research Center. 2020a. "Most Americans Say Coronavirus Outbreak Has Impacted Their Lives." Retrieved November 26, 2020 (<https://www.pewsocialtrends.org/2020/03/30/most-americans-say-coronavirus-outbreak-has-impacted-their-lives/>).
- Pew Research Center. 2020b. "Worries about Coronavirus Surge, As Most Americans Expect a Recession—or Worse." Retrieved November 26, 2020 (<https://www.people-press.org/2020/03/26/worries-about-coronavirus-surge-as-most-americans-expect-a-recession-or-worse/>).
- Robitzsch, Alexander and Simon Grund. 2020. "miceadds: Some Additional Multiple Imputation Functions, Especially for 'Mice.'" R Package Version 3.8-9. Retrieved November 26, 2020 (<https://CRAN.R-project.org/package=miceadds>).
- Sanders, Linley. 2020. "Yahoo News/YouGov: Most Americans Are Worried about COVID-19—but not Republicans." *YouGov*, March 12. Retrieved November 26, 2020 (<https://today.yougov.com/topics/health/articles-reports/2020/03/12/coronavirus-data-poll>).
- Shear, Michael and Sarah Mervosh. 2020. "Trump Encourages Protest against Governors Who Have Imposed Virus Restrictions." *The New York Times*, April 20. Retrieved November 26, 2020 (<https://www.nytimes.com/2020/04/17/us/politics/trump-coronavirus-governors.html>).

- Smith, David. 2020. "'That's a Nasty, Snarky Question': Trump's Media Assault Rages on in Midst of Coronavirus Crisis." *The Guardian*, April 1. Retrieved November 26, 2020 (<https://www.theguardian.com/world/2020/apr/01/us-coronavirus-outbreak-donald-trump-media-latest>).
- Stanley-Becker, Isaac. 2020. "As Trump Signals Readiness to Break with Experts, His Online Base Assails Fauci." *The Washington Post*, March 26. Retrieved November 26, 2020 ([https://www.washingtonpost.com/politics/as-trump-signals-readiness-to-break-with-experts-his-online-base-assails-fauci/2020/03/26/3802de14-6df6-11ea-aa80-c2470c6b2034\\_story.html](https://www.washingtonpost.com/politics/as-trump-signals-readiness-to-break-with-experts-his-online-base-assails-fauci/2020/03/26/3802de14-6df6-11ea-aa80-c2470c6b2034_story.html)).
- Swire, Briony, Adam Berinsky, Stephan Lewandowsky, and Ullrich Ecker. 2017. "Processing Political Misinformation: Comprehending the Trump Phenomenon." *Royal Society Open Science* 4:160802.
- Tesler, Michael. 2020. "Red States Are Finally Starting to Google 'Coronavirus': Sometimes, Reality Breaks through the Partisan Bubble." *The Washington Post*, March 16. Retrieved November 26, 2020 (<https://www.washingtonpost.com/politics/2020/03/16/red-states-are-finally-starting-google-coronavirus/>).
- The Hopi Tribe. 2020. "Information Regarding the Coronavirus COVID-19 Outbreak." Retrieved November 26, 2020 (<https://www.hopi-nsn.gov/covid-19-response-and-resources/>).
- U.S. Bureau of Labor Statistics. 2020. "The Economics Daily." Retrieved November 26, 2020 (<https://www.bls.gov/opub/ted/year.htm>).
- Van Bavel, Jay. 2020. "In a Pandemic, Political Polarization Could Kill People." *The Washington Post*, March 22. Retrieved November 26, 2020 (<https://www.washingtonpost.com/outlook/2020/03/23/coronavirus-polarization-political-exaggeration/>).
- Venables, William and Brial Ripley. 2002. *Modern Applied Statistics with S*. New York: Springer-Verlag.

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