Did COVID Infect Twitter?
An analysis of campaign Tweets in 2020

by

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Introduction

COVID-19 upended standard campaign practices in 2020. From social distancing requirements to mask mandates, a typical rally was simply a non-starter for the American politician. While previous campaigns were dominated by large public appearances and a fleet of door-knocking volunteers and interns walking the streets, the circumstances of 2020 called for an entirely new approach. The pandemic purged the tools considered by many political scientists to be most effective (e.g., personal canvassing, rallies, en etc.) —pushing social media to the forefront of political campaign tactics. In recent years social media has become one tool amongst many for promoting their message, agenda-setting, reaching new voters, and mobilizing existing voters. Twitter, in particular, has been studied as an essential vehicle for political campaigns —and studies have found it to be an effective means by which a political campaign can engage with its constituency, establish agenda, and get out the vote. In this study, I use a content analysis to systematically examine the Twitter behavior of twenty U.S. Senate candidates to determine to what extent —if any —COVID-19 influenced the social media content of senatorial candidates in battleground states. It is important social scientists dissect the way the pandemic has influenced traditional campaigning to extend our understanding of the electoral landscape, partisanship, and the 2020 results.

Background on the 2020 Election

It is important that the context of the 2020 General Election is established. Beyond the contentious public perception of then-President Donald Trump, there were events that encapsulated the time in which the examined data was collected. On January

21, 2020, health officials confirmed the first case of SARS-CoV-2 (here on referred to as COVID-19 or the coronavirus) on United States soil. Shortly thereafter, the World Health Organization declared a global health emergency. On March 13th, 2020, President Trump declared that the United States was in a state of national emergency. While the federal government did not itself institute stay-at-home orders or social distancing requirements, states and local governments responded to the outbreak in-kind —large-scale gatherings were canceled, restaurants and stores were strictly limited in capacity and public schools closed en masse. These policies pushed people in-doors —with both children and adults doing their day-to-day tasks through various telecommuting implementations (primarily Zoom). The COVID-19 pandemic lasted over a year (as of the writing of this paper) and was a key issue within the 2020 General Election —with 62% of registered voters claiming that "the coronavirus outbreak" was very important to their vote in the 2020 presidential election (Pew Research Center 2020). Therefore, all assessments of the 2020 General Election must acknowledge the coronavirus outbreak. This study seeks to quantify the coronavirus outbreak's presence on the social media accounts of political candidates.

But beyond the coronavirus outbreak, another significant event was at play preceding the 2020 election —an event with roots that go back to the final year of President Trump's predecessor. In February of 2016 —more than nine months before the end of President Barack Obama's final term in office —Justice Antonin Scalia died. Shortly thereafter, President Obama nominated Merrick Garland (a moderate liberal) to fill Scalia's seat. Rather than simply bring the nominee to a vote within the Senate, the Republican Party (specifically the eleven members of the Senate Judiciary Committee's

Republican majority) refused to conduct the hearings necessary to bring Garland's nomination to a vote. The Republicans claimed that, given there was an election on-the-way, the sitting President should not be allowed to nominate a Supreme Court justice. In September of 2020 —just over a month before the 2020 General Election —Justice Ruth Bader Ginsburg died. Shortly thereafter, President Trump nominated Amy Coney Barrett (a religious conservative) to fill Ginsburg's seat. Some Democratic Senators —namely Ed Market —said that if the Republicans violated the precedent of the Garland slash Gorsuch situation, the Democratic Party would have to seriously consider "expanding the Supreme Court". The controversial nomination of Amy Coney Barrett and the potential threat of court-packing were key issues within the 2020 General Election —with 64% of registered voters claiming that "Supreme Court appointments" were very important to their vote in the 2020 presidential election (Pew Research Center 2020).

The social media landscape of the time was dominated by Twitter —a social network that went public in 2006. For most of its history, users could send 140-character messages known as 'tweets.' While this character limit was doubled to '280' in 2017, this limitation is a key appeal to the network. Users can "retweet," "reply," and "like" other users' tweets in a quick and effective manner —sending out brief and snappy messages to be rapidly consumed and engaged with. There are, on average, 6,000 tweets submitted to the website every second. Beginning in 2018, candidates running for the House of Representatives, U.S. Senate, or for Governor in the U.S. election were verified and labeled by the platform (Coyne 2019). This was done to accommodate for the increased political use of social media and to curb the spread of fake news surrounding candidates. Social media analysts have observed that political candidates have used Twitter as a long-

form rally —announcing their policy plans, requesting donations from supporters, and criticizing their opponents through the platform (Wezerek and Roeder 2019). Researchers have postulated that President Trump's success during the 2016 General Election was attributed to his ability to direct public attention toward his preferred issues through Twitter (Lee and Xu 2018). Further research narrowed in on how the nature of Twitter allows candidates (namely President Trump) to bypass the traditional media and utilize a more crass and informal rhetorical style to engage with the voting population in a way more formal settings simply would not allow (Kayam 2020). Given the significance of Twitter to American politics, examining candidate tweets in 2020 during a global pandemic is a worthwhile contribution to the literature.

Literature Review

Social media matters within the context of a campaign. Before the age of new media, studies indicated that campaign tactics that involved more personal, peer-to-peer engagement were more likely to mobilize voters than other —less personal —means of campaign engagement (Gerber and Green 2000). But in this brave new world, the way peers (or perceived peers) engage with one another is different. Para-social relationships are one-sided relationships; a relationship in which the audience feels personal attachment to a performer within the context of mass media that holds some level of celebrity (such as a musician or a talk show host) that is similar to that of a reciprocal relationship (Horton and Wohl 1956). While this term was coined in 1956, it has become significantly more pervasive in the 21st century with the rise of social media and internet stardom (Gleason, Newberg and Theran 2017). If a perceived personal relationship is the most effective means of mobilizing voters and para-social relationships can, through

social media, emulate a true personal relationship (at least on the end of the intended voter), then logic dictates that social media should be an effective means of mobilizing voters.

Various studies have found a positive correlation between social media activity and voter turnout (Babac and Podobnik 2018); (Bright, et al. 2020). For example, Babac and Podobnik found that the use of Facebook during the Croatian general elections of 2015 as a means of promoting interaction between the campaign and constituents had a positive influence on electoral success (Babac and Podobnik 2018); Bright, et al. found that Twitter-based campaigning in the UK elections of 2015 and 2017 had a positive influence on candidate victory —albeit a relatively small influence (Bright, et al. 2020); LaMarre and Suzuki-Lambrecht found that candidates in the 2010 U.S. House of Representative elections that used Twitter had a greater chance of winning after controlling for incumbency and partisan identification (LaMarre and Suzuki-Lambrecht 2013). A major takeaway is that that while Twitter-based campaigning has a positive influence on candidate victory —that influence is mitigated through the use of other channels of communication (Bright, et al. 2020). But what happens where there are no other channels of communication?

<u>How does social media matter?</u>

In addition, knowing what candidates talk about on social media matters. Agenda-setting theory —first developed by Max McCombs and Donald Shaw in 1968 —describes the ability for an institution to influence the relevance of topics within the public conscience. According to agenda-setting theory, the prominence or “salience” of

any given issue discussed by the media can be transferred over to the public; the more the media covers the issue, the more dire the issue is perceived by the public (McCombs 2005). The decentralized nature of online platforms like Facebook and Twitter has shifted the theory of agenda-setting —with the media's coverage of a given issue being influenced and shifted by the immediate feedback of the public (Chen, et al. 2019). But how does agenda-setting theory on social media apply in practice when placed within the context of a political campaign? Social media has been observed as an intermediary within the process of the agenda-setting process. Many of those in the political sphere have embraced Twitter as an essential part of the campaign's agenda-setting tactics—supplanting traditional press releases. Kruikemeier, Gattermann, and Vliegenthart observed what is described as a "semi-reciprocal relationship" between social media and politicians in the Dutch national election of 2012 (Kruikemeier, Gattermann and Vliegenthart 2018); Parmelee noted that political tweets are not only used as sources within news stories, but as a motivator toward the creation of said news stories. Social media's influence goes beyond its function as an intermediary. According to a case study of the 2016 General Election, political campaigns use social media not only to understand public opinion but as a means of engaging with the public and to shift public opinion (McGregor 2020). Enli found that social media had a measurable influence on agenda-setting in the U.S. presidential election of 2016 (Enli 2017) —being a powerful tool for "constructing and maintaining a candidate's image." Priming theory states that media tells the people what to think about —and subsequently how people should evaluate candidates (Blasco-Duatis, et al. 2019). Within the context of traditional media this is not always immediately observable —but social media allows for immediate and a pseudo-

personal access to political candidates. If one candidate has spoken significantly about a particular issue, the other candidate can immediately rebut —so silence on one side can be perceived as deafening.

Social media's importance is only furthered by the nature of the coronavirus. While in previous elections the influence of social media could be mitigated by other methods of voter outreach (Bright, et al. 2020), the outbreak changed everything. No longer could candidates play by what was tried-and-true. Previous studies took place in a world where having social media was optional —where young politicians were more likely to use Twitter than older politicians (Jungherr 2016), but the circumstances of the 2020 election meant that every individual running for election had to maintain a social media presence. The social media presence of these candidates was largely influenced by partisan rhetoric established by the de facto heads of the given party and by official platform of said parties.

To understand how politicians address the coronavirus pandemic, partisanship should first be understood. There is a clear partisan distinction in how healthcare is approached by a given party's platform (Levitt 2016). Since Republican candidates are primarily focused on scaling back the federal government's involvement in healthcare, it stands to reason that they would be less likely to campaign on taking government action regarding a viral outbreak. The general polarization within the political climate of 2020 further exacerbated existing policy differences between the two major parties.

While information is sparse due to the recency of the coronavirus outbreak, it is inherently partisan within the context of the campaign. Not only is the coverage of the

outbreak (or rather, the policy issues surrounding the outbreak) partisan, but the implementation of outbreak-related policy is partisan. One study observed that the most viable predictor for the adaptation of mask mandates on the state-level are the partisanship of both the governor and the electorate (Adolph, et al. 2020). Existing literature already suggests that registered voters who support Donald Trump and registered voters who support Joe Biden have stark differences regarding which issues are most important —a theme that echoes a general sentiment of partisanship and views on scientific evidence. Previous research has indicated that political partisanship is a solid predictor of an individual's opinion on climate change or global warming —and political polarization has been observed to have a measured influence on the passing of climate-related policy (DeNicola and Subramaniam 2014). According to the Pew Research Center, while 82% of registered Democrats saw the coronavirus outbreak as an important part of their vote in the 2020 presidential election, only 39% of registered Republicans saw it as an important part of their vote (Pew Research Center 2020). Therefore, previous studies lead to the following hypotheses:

H1: Democratic candidates tweeted more than Republican candidates.

H2: Candidates challenging incumbents tweeted more than incumbents.

H3: Democratic candidates running in battleground states will tweet more about the coronavirus outbreak than Republican candidates running in battleground states.

H4: Candidates that won tweeted about the coronavirus more than candidates that lost.

Methodology

During the 2020 General Election, thirty-five seats in the U.S. Senate, eleven gubernatorial seats, and all 435 seats in the U.S. House of Representatives were up for election. In addressing the coronavirus within campaign tweets, senatorial campaigns are particularly well-suited because they are bids to hold a position relevant to national issues rather than state-wide or local issues; the coronavirus outbreak was a national issue; thus, it follows that it was more likely to be directly addressed by those running for national office. Further narrowing the scope to specifically examine battleground states means that the candidates within these races had to use every campaign method in their skillset to secure their election.

"Figure 1 Here."

In order to select a sample, a definition of 'battleground state' had to be established. To do this, data regarding the 2020 Presidential Election was examined — and any state in which the candidate won the state by a margin of ≤10% was considered a battleground state (See Figure 1). This narrowed down the list to fifteen states: Arizona, Florida, Georgia, Iowa, Maine, Michigan, Minnesota, Nevada, New Hampshire, North Carolina, Ohio, Pennsylvania, Texas, Virginia, and Wisconsin. Of these states, only ten states had an active senate race during the 2020 election, creating a sample of twenty candidates: Martha McSally (R), Mark Kelly (D), David Perdue (R), Jon Ossoff (D), Joni Ernst (R), Theresa Greenfield (D), Susan Collins (R), Sara Gideon (D), Gary Peters (D), John James (R), Tina Smith (D), Jason Lewis (R), Jeanne Shaheen (D), Corky Messner (R), Thom Tillis (R), Call Cunningham (D), John Cornyn (R), Mary Jennings Hegar (D), Mark Warner (D), and Daniel Gade (R). Next, each candidates' official campaign Twitter account was identified (see Figure 2). I limited the analysis to social media output within

the month preceding the election in order to make up for candidates beginning their online campaigns at different times. Not only that, but similar studies have used periods of timespans between two and six weeks. A month provided 4474 tweets — approximately 223.7 tweets per candidate on average —which provided enough data for the purpose of analysis.

"Figure 2 Here."

Twitter data for each of the candidates was collected on January 2nd, 2021 using the "Vicinitas" Twitter scraper (a Python-based program that pulls the last thousand Tweets from a given account) The scraper provided a dataset including the plaintext of each individual tweet made by a user, the unique ID number of said tweet, when the tweet was sent, and the level of engagement seen by said tweet.[1] While messages generated by other-users (e.g., retweets) were scraped along with unique user-generated tweets and replies, these were removed from the total data set as they do not represent the unique messaging of a given candidate. In a similar vein, two candidates would post tweets twice —once in English and once in Spanish —within moments of the initial post. For the purpose of this study, the Spanish versions of said tweets were removed from the dataset.

"Figure 3 Here."

[1] Here engagement means the number of likes, retweets, and replies of a given Tweet.

A coding sheet of 18 categories (see Figure 3) was developed based on the top-ten issues that voters indicated were "very important" to their vote in the 2020 presidential election (as gathered by the Pew Research Center), existing research on campaign behavior on social media in the 2016 Presidential Election (Lee and Xu 2018), and frequently raised topics by candidates as noted during the research process. When an issue was addressed within a given tweet, it was marked with a value of 1. If a tweet did not address said issue, it was marked with a value of 0. Initial data was collected automatically, with a programmed search for given key terms for each category.[2] If a key term for a given category was found within a tweet, it was coded as a 1 —and if it was not, it was coded as a 0. The reliability of this method was established by a selection of 5% of the total tweets —which were manually coded and compared to the automated results. Based on this selection, inter-coder reliability was established at a level of 0.976 using Scott's Pi formula. Tweets with videos, photos, or infographics would be judged manually based on the content of said additional media.

Findings

This study was designed to assess the substantive involvement of the coronavirus outbreak in senatorial tweets, comparing its' presence with that of other issues inside of a singular feed and how it proportionally relates to other candidates' behaviors. In summary, candidates focused their social media output on the top four issues: the

[2] These terms were identified based on initial samplings of Twitter activity among officials running for election (See Figure 4).

economy, healthcare, Supreme Court appointments, and the coronavirus outbreak. In three cases, the difference in coverage between Democrats and Republicans were statistically significant: healthcare, the coronavirus outbreak, and abortion. Regression analyses indicated that the frequency of coronavirus-related tweets did not have a significant influence regarding electoral outcome —but did serve as a solid predictor of party identification. Of the policy tweets within the sample, at least 1 out of every 10 were related to the coronavirus outbreak. While the outbreak was discussed less than issues of the economy or healthcare, it was also discussed more than all other issues —not just overall, but even when stratified by political party, incumbency, or by electoral result. There is a difference in how the coronavirus outbreak is discussed along partisan lines.

While there were not huge differences in how contrasting groups engaged on Twitter, differences did exist. Overall, a candidate running for a senate seat in a battleground state during the 2020 general election tweets on-average 223.7 times during the month preceding the election date. Democratic candidates tweet more frequently than their Republican counterpart (248.6 compared to 198.8). In fact, in only three senate races did the Republican candidate tweet more than their Democratic counterpart (New Hampshire, North Carolina, and Virginia). On a race-by-race level, the average difference in Tweets-per-month was 81. The election with the largest disparity in Tweets was Michigan —where Gary Peters tweeted 242 times and John James tweeted a mere 55 times. The election with the smallest difference in Tweets was Iowa, in which Joni Ernst tweeted 220 times and Theresa Greenfield tweeted 222 times. The great disparity in Michigan likely comes down to campaign methodology —John James was relatively

unique amongst candidates in that he produced almost half of his Twitter behavior (49.1% of all tweets) was originally produced video. Producing video content, regardless of length, takes significantly more production time than any other form of output (whether it be an infographic, a photoshoot, or a standard text post). This is likely why other —more seasoned —candidates did not use video content with such frequency (on average 19.8% of a candidates' tweets used video content). John James, having never held elective office and only running a campaign once previously (in 2018), was likely unaware of how producing such content could serve as a hinderance to campaign output. Incumbent candidates tweeted less on-average than their challengers (213.3 compared to 234.1). Winning candidates on average tweeted more than losing candidates. While winning Republican candidates align with this trend (230.75 compared to 171.5), winning Democrats on average tweeted less than losing Democrats. (276 compared to 230.333).

"Figure 5 here."

The issue tweeted about most overall was healthcare while the issue tweeted about least across the board was abortion. The top three issues tweeted about overall were: healthcare (544 or 12.2% of a given candidates' tweets), the economy (533 or 11.9% of a given candidates' tweets), and the coronavirus outbreak (493 or 11.0% of a given candidates' tweets). The issue with the largest on-average disparity was healthcare. While the average candidate tweeted about healthcare approximately 27.2 times during the month preceding the election, the average difference within a given race was approximately 32.8 tweets (see Figure 5).

The top three issues tweeted about by Republican candidates were: the economy (211 or 13.5% of a given Republican's tweets), Supreme Court appointments (156 or 9.1% of a given Republican's tweets), and the coronavirus outbreak (151 or 9.2% of a given Republican's tweets). The top three issues tweeted about by Democratic candidates were: healthcare (436 or 18.2% of a given Democrat's tweets), the coronavirus outbreak (300 or 13.1% of a given Democrat's tweets), and the economy (274 or 12.5% of a given Democrat's tweets). The largest partisan divides in issue-based coverage are "healthcare" and "the coronavirus outbreak" (see Figure 5).

The top three issues tweeted about among incumbents were: the economy (280 or 14.3% of a given incumbent's tweets), healthcare (215 or 10.8% of a given incumbent's tweets), and the coronavirus outbreak (199 or 9.8% of a given incumbent's tweets). The top three issues tweeted about among those challenging incumbents were: healthcare (329 or 13.8% of a given challenger's tweets), the coronavirus outbreak (294 or 12.5% of a given challenger's tweets), and the economy (253 or 11.7% of a given challenger's tweets) (see Figure 5).

"Figure 6 here."

The top three issues tweeted about by winning candidates were: the economy (267 or 12.1% of a winning candidate's tweets), healthcare (264 or 12.0% of a winning candidate's tweets), and the coronavirus outbreak (227 or 10.2% of a winning candidate's tweets). The top three issues tweeted about by losing candidates were: healthcare (280 or 12.6% of a losing candidate's tweets), the economy (266 or 13.9% of a losing candidate's

tweets), and the coronavirus outbreak (266 or 12.1% of a losing candidate's tweets) (see Figure 6).

Whilst performing reliability checks, it was noted that the issue of the coronavirus outbreak was largely discussed in terms of how specifically the government must address the needs of the individual voter. While messaging that focused on mask mandates and social distancing policies did exist, the average tweet discussing the coronavirus outbreak focused on personal appeals (e.g., candidates addressing the reader, encouraging them to wear their masks or wash their hands) and calls for the government to do right by the reader (e.g., candidates calling on the federal government to provide financial relief). Though these observations are anecdotal, they are still worth noting.

Limitations and opportunities

There are limitations to the design of this study that prevent its findings from being extrapolated to larger samples. By limiting the pool of candidates that were examined to those running for a U.S. Senate seat, this study cannot be used to make declarations regarding the behaviors of the broader group of candidates running for political office. Likewise, only candidates running in battleground states were studied — so these findings may not align with information regarding candidates running in non-battleground states. The biggest limitation is that this study was conducted in 2020. As outlined previously, the socio-political landscape of a pandemic of this nature is unprecedented —and the social media behavior of these candidates was certainly shaped by the circumstances surrounding the election. These findings do not account for spurious

variables (e.g., funds raised-per-candidate, number of in-person campaign events, previous notoriety, en etc.) and thus cannot draw conclusions of cause and effect.

The future of this dataset

Despite these limitations, this study provides ample opportunities for further research. The existing dataset created for the purpose of this study could be repurposed to examine senatorial candidates' relationship to the messaging of their respective presidential candidate. This could be done by comparing how senatorial candidates talk about issues to their particular parties' presidential candidate (e.g., comparing Republican candidates' Twitter feeds to President Donald Trump's Twitter feed and Democratic candidates' Twitter feeds to President Joe Biden's Twitter feed). While this would require the scraping of President Trump's since-defunct Twitter account and President Biden's no-longer-in-use campaign Twitter account, this could provide interesting information regarding what circumstances drive candidates to align themselves with their upper card candidate and what circumstances drive candidates to distance themselves.

The future of this research format

Social media will only become more relevant to campaign behavior in the coming years. While the clearest limitation of this study is that it solely examined the behavior of senatorial candidates in battleground states during the 2020 General Election, this research design could easily be re-implemented in subsequent elections and potentially compared against past candidates from a given locale (e.g., comparing campaign Twitter behavior of candidates in the 2020 General Election with the campaign Twitter behavior of senatorial candidates in the 2026 General Election). This research model could be

performed on different sorts of candidates —presidential candidates, gubernatorial candidates, House of Representative candidates, local candidates, en etc. Likewise, the timespan could be shifted to a larger or shorter window (e.g., two-months preceding the election, the week immediately preceding the election, en etc.).

Conclusion

This study set out to examine the way the coronavirus outbreak influenced campaign behavior by examining the Twitter feed of twenty U.S. Senate candidates. The coronavirus outbreak had a significant influence on the social media behavior —pushing campaign efforts almost entirely onto the internet. It also took up a significant amount of social media discussion. While there was no significant relationship between social media output regarding the topic and electoral results, it still served a predictive function. The fact that the frequency in which the coronavirus outbreak was mentioned serves as a solid predictor of partisanship speaks to the polarization of this era. Issues rooted in observable phenomena and scientific evidence have become indistinguishable from partisan issues and ideological debate —as it is the norm to run a campaign as a party opposed to the other's stance rather than a party of stances.

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supervisor Mary Atwell, whose flexibility helped get this research done in a timely fashion.

Appendices

Figure 1: 2020 Presidential Election Data (collected on 11/12/2020) (source: Associated Press)			
State	**Votes for Joseph Biden**	**Votes for Donald Trump**	**Winning margin**
Arizona	1,663,460 (49.4%)	1,651,923 (49.1%)	0.30%
Georgia	2,471,918 (49.5%)	2,457,846 (49.2%)	0.30%
Wisconsin	1,630,570 (49.6%)	1,610,030 (48.9%)	0.70%
Pennsylvania	3,392,230 (49.8%)	3,338,121 (49%)	0.80%
North Carolina	2,664,380 (48.7%)	2,737,5990 (50.1%)	1.40%
Michigan	2,790,648 (50.6%)	2,644,525 (47.9%)	2.70%
Nevada	671,955 (50.2%)	635,089 (47.5%)	2.70%
Florida	5,284,453 (47.9%)	5,658,847 (51.2%)	3.30%
Texas	5,218,631 (46.4%)	5,865,913 (52.2%)	5.80%
Minnesota	1,718,683 (52.6%)	1,485,254 (45.4%)	7.20%
New Hampshire	423,291 (52.8%)	365,373 (45.6%)	7.20%
Iowa	758,352 (45%)	897,140 (53.2%)	8.20%
Ohio	2,603,731 (45.2%)	3,074,418 (53.4%)	8.20%
Maine	430,023 (52.9%)	359,502 (44.2%)	8.70%
Virginia	2,379,830 (54.1%)	1,952,834 (44.4%)	9.70%
New Mexico	496,826 (54.2%)	400,095 (43.6%)	10.60%
South Carolina	1,091,348 (43.4%)	1,384,852 (55.1%)	11.70%
New York	3,732,369 (55.8%)	2,869,072 (42.9%)	12.90%
Colorado	1,753,416 (55.3%)	1,335,253 (42.1%)	13.20%
Illinois	3,056,219 (55.8%)	2,216,566 (42.3%)	13.50%
Kansas	551,144 (41.3%)	752,903 (56.5%)	15.20%
Missouri	1,242,851 (41.3%)	1,711,848 (56.9%)	15.60%
Alaska	115,047 (40.2%)	160,145 (55.9%)	15.70%
New Jersey	2,353,229 (57.4%)	1,698,261 (41.4%)	16.00%
Indiana	1,239,401 (41%)	1,725,723 (57.1%)	16.10%
Montana	243,719 (40.6%)	341,767 (56.9%)	16.30%
Oregon	1,304,536 (57%)	928,706 (40.6%)	16.40%
Louisiana	855,597 (39.8%)	1,255,481 (58.5%)	18.70%
Delaware	295,403 (58.8%)	199,829 (39.8%)	19.00%
Washington	2,344,336 (58.5%)	1,556,739 (38.9%)	19.51%
Connecticut	1,079,223 (59.3%)	713,778 (39.2%)	20.10%
Utah	546,604 (37.8%)	837,509 (58%)	20.20%
Rhode Island	300,325 (59.4%)	197,421 (39.1%)	20.30%

Mississippi	440,284 (38.8%)	677,218 (59.7%)	20.90%
Tennessee	1,139,666 (37.4%)	1,849,211 (60.7%)	23.30%
Alabama	834,533 (36.4%)	1,430.589 (62.5%)	24.10%
Kentucky	772,285 (36.2%)	1,326,418 (62.1%)	25.90%
South Dakota	150,467 (35.6%)	261,035 (61.8%)	26.20%
Arkansas	417,897 (34.6%)	755,815 (62.6%)	28.00%
Nebraska	367,919 (30.2%)	550,202 (58.7%)	28.50%
Hawaii	365,802 (63.7%)	196,6002 (34.3%)	29.40%
California	10,369,252 (64.1%)	5,460,239 (33.8%)	30.30%
Idaho	286,991 (33.1%)	554,019 (63.9%)	30.80%
Maryland	1,766,966 (64.7%)	914,804 (33.5%)	31.20%
Massachusetts	2,316,338 (65.6%)	1,148,777 (32.6%)	33%
Oklahoma	503,289 (32.3%)	1,018,870 (65.4%)	33.10%
North Dakota	114,902 (31.9%)	235,595 (65.5%)	33.60%
Vermont	242,805 (66.4%)	112,688 (30.8%)	35.60%
West Virginia	232,502 (29.6%)	539,610 (68.7%)	39.10%
Wyoming	73,445 (26.7%)	193,454 (70.4%)	43.70%
Yellow denotes a race in which the winning margin was ≤10%			
Red or blue denotes the victor of the race.			

Figure 2: Candidates for State-Wide Office in Battleground States (states with 10% margin)		
State	**Senatorial Candidates**	
Arizona	Martha McSally (R)	@MarthaMcSally
	Mark Kelly (D)	@CaptMarkKelly
Florida		
Georgia	David Perdue (R)	@PerdueSenate
	Jon Ossoff (D)	@ossoff
Iowa	Joni Ernst (R)	@joniernst
	Theresa Greenfield (D)	@greenfieldiowa
Maine	Susan Collins (R)	@SenSusanCollins
	Sara Gideon (D)	@SaraGideon
Michigan	Gary Peters (D)	@GaryPeters
	John James (R)	@JohnJamesMI
Minnesota	Tina Smith (D)	@TinaSmithMN
	Jason Lewis (R)	@LewisForMN
Nevada		
New Hampshire	Jeanne Shaheen (D)	@JeanneShaheen
	Corky Messner (R)	@CorkyForNH
North Carolina	Thom Tillis (R)	@ThomTillis
	Cal Cunningham (D)	@CalforNC
Ohio		
Pennsylvania		
Texas	John Cornyn (R)	@JohnCornyn
	Mary Jennings Hegar (D)	@mjhegar
Virginia	Mark Warner (D)	@markwarner
	Daniel Gade (R)	@gadeforvirginia
Wisconsin		

Figure 3: Coding Sheet		
Issue Frame	**Economy**	Tweets including topics such as employment, unemployment, salary, deficit, public spending, debt, economic crisis, taxes, entrepreneurship, contracts, freelancers, etc.
	Healthcare	Tweets including topics such as costs of health care, protections of those with pre-existing conditions, the Affordable Care Act, Social Security, Medicare, Medicaid, etc.
	Supreme Court appointments	Tweets referencing the nomination of Supreme Court Justice Amy Comey Barrett, potential Court packing, and the general composition of the Supreme Court.
	Coronavirus outbreak	Tweets referencing the COVID-19 pandemic, and policies used to address economic and health concerns involved with said pandemic.
	Violent crime	Tweets referencing violent crime.
	Foreign policy	Tweets referencing how the United States government and businesses operated within the United States interact with foreign countries.
	Gun policy	Tweets referencing the issue of gun control and other gun-related policies.
	Race and ethnic inequality	Tweets referencing the issues of race and ethnic inequality.
	Immigration	Tweets referencing the issue of immigration
	Economic inequality	Tweets referring to the unequal distribution of wealth in the United States or appeals to a class divide.
	Climate change	Tweets including topics related to climate change.
	Abortion	Tweets referencing abortion.

Figure 4: Coding Sheet	
Economy	“economy,” “economic,” “jobs,” “class,” “employ,” “business,” “market,” “worker,” “small biz,” “cut taxes,” “tax cut.”
Healthcare	“health,” “health-care,” “pre-existing,” “condition,” “healthcare,” “hospital,” “hospital,” “repeal and replace,” “social security,” “medicare,” “Medicaid,” “Obamacare,” “Affordable Care Act,” “ACA.”
Supreme Court appointments	“Amy,” “Coney,” “Barrett,” “Supreme,” “Court,” “appointment,” “nomination,” “ACB,” “nominee.”
Coronavirus outbreak	“corona,” “COVID,” “relief,” “virus,” “epidemic,” “mask,” “pandemic,” “outbreak,” “frontline,” ”front-line,” “front line,” “stimulus,” “flu.”
Violent crime	“violent,” “violence,” “crime,” “criminal,” “shooting,” “loot,” “prison,” “murder,” “rape,” “assault.”
Foreign policy	“foreign,” “China,” “seas,” “international,” “U.N.,” “United Nations,” “PCA,” “diplomacy,” “ambassador,” “EU,” “E.U.,” “European Union,” “Russia,” “countries.”
Gun policy	“Second Amendment,” “2nd Amendment,” “gun,” “shooting,” “automatic,” “rifle,” “arms,” “armed,” “concealed carry,” “2A.”
Race and ethnic inequality	“BLM,” “racism,” racist,” “equal,” “racial,” “ethnic,” “black lives,” “protest,” “riot,” “loot,” “Ferguson,” Floyd,” “Portland,” “Black,” “BIPOC,” “latino,” “latinx,” “color,” “creed,” “Jim Crow.”
Immigration	“ICE,” “immigration,” “immigrant,” “undocumented,” “cages,” “border,” “alien,” “document,” “visa,” “Mexico,” “Mexican,” “latino,” “latinx,” “latina.”
Economic inequality	“poverty,” “homeless,” “class,” “’labor,” “billionaire,” “wealthy,” “poor,” “housing,” “SNAP,” millionaire,” “bracket,” “wage,” “welfare.”
Climate change	“climate,” “energy,” “pollution,” “clean,” “solar,” “oil,” “greenhouse,” “fossil,” “carbon,” “Green New Deal,” “forest,” “environment,” “Paris,” “PCA,” “Nuclear,” “global warming,” “EPA,” “wildlife,” “wild-life,” “wild life,” “nature,” “National Park.”
Abortion	“abortion,” pro-choice, pro-life, baby, babies, Roe, Wade, contraception, contraceptive, “fetus,” “conception,” “trimester,” “pro choice,” “pro life,” “prochoice,” “prolife,” “right to choose,” “bodily autonomy,” “women’s right.”

Figure 5: Percent of tweets between (October 3rd, 2020 and November 3rd, 2020) dedicated to a given topic.

Topic	All candidates	Republican candidates	Democratic candidates	Incumbent candidates	Candidates challenging incumbents
Total Tweets	4474	44.4%	55.6%	47.7%	52.3%
Economy	11.9%	13.5%	12.5%	14.3%	11.7%
Healthcare	12.2%	6.4%	18.2%	10.8%	13.8%
Supreme Court appointments	7.0%	9.1%	5.3%	9.6%	4.8%
COVID-19	11.0%	9.2%	13.1%	9.8%	12.5%
Violent crime	1.3%	1.5%	0.8%	1.1%	1.3%
Foreign policy	3.9%	4.4%	3.9%	5.4%	2.8%
Gun policy	1.6%	2.0%	1.2%	1.1%	2.1%
Race and ethnic inequality	2.6%	2.3%	2.7%	1.7%	3.3%
Immigration	1.1%	1.2%	1.0%	1.2%	1.0%
Economic inequality	1.6%	1.3%	1.9%	2.0%	1.2%
Climate change	4.1%	4.1%	3.6%	4.6%	3.1%
Abortion	0.7%	0.1%	1.0%	0.7%	0.3%

Figure 6: Percent of tweets between (October 3rd, 2020 and November 3rd, 2020) dedicated to a given topic.

Topic	Winning candidates	Losing candidates	Winning Republicans	Losing Republicans	Winning Democrats	Losing Democrats
Total Tweets	52.3%	47.7%	21.4%	23.0%	30.9%	24.7%
Economy	12.1%	13.9%	12.1%	14.4%	12.0%	13.1%
Healthcare	12.0%	12.6%	3.9%	8.1%	17.4%	19.3%
Supreme Court appointments	6.8%	7.6%	8.8%	9.3%	5.5%	4.9%
COVID-19	10.2%	12.1%	6.2%	11.3%	12.9%	13.3%
Violent crime	1.1%	1.2%	0.9%	2.0%	1.3%	0.1%
Foreign policy	4.8%	3.5%	3.9%	4.7%	5.4%	1.7%
Gun policy	1.0%	2.3%	1.4%	2.4%	0.7%	2.0%
Race and ethnic inequality	2.3%	2.7%	1.2%	3.0%	3.0%	2.4%
Immigration	1.1%	1.1%	1.0%	1.3%	1.2%	0.7%
Economic inequality	1.7%	1.6%	1.0%	1.6%	2.2%	1.6%
Climate change	4.2%	3.6%	5.4%	3.2%	3.3%	4.1%
Abortion	0.7%	0.3%	0.0%	0.1%	1.2%	0.6%

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