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# Pandemic Messaging: Congressional Communication and the Mechanisms of Polarizing Rhetoric

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#### **ABSTRACT**

U.S. senators are increasingly turning to Twitter to stoke partisan divisions, and it's not just what they say, but rather how they say it. Senators spent the Spring of 2020 responding to the COVID-19 pandemic, but the tone and framing used to engage a digital constituency was largely dependent on partisan alignment with President Trump. We use senators' Twitter activity during the outbreak to offer new insight into the mechanisms of lawmakers' party polarizing trends in congressional communication. We show that divisions stemmed from senators' sentiment and framing—with Republicans more likely to incorporate positivity into forward-looking steps for economic recovery and Democrats preferring a negative tone to address government failings and inadequate response by President Trump. This article extends the literature on polarizing rhetoric in the Senate by using the pandemic response to illustrate how the dynamics of senators' digital rhetoric, even during a moment of shared crisis, continue to fuel partisanship and polarizing narratives.

#### Introduction

Shared, national disasters like the COVID-19 crisis can incentivize members of Congress to collectively rally around a crisis and promote a united front in both their behavior and rhetoric. Public health crises that span across states and municipalities of differing political ideologies can bring lawmakers and the public together and spur a "rally around the flag" movement. In April 2020, both Democrats and Republicans in the Senate illustrated this collective response by spending more than 60 percent of their Twitter agenda on pandemic-related messaging. Research shows that both congressional Republicans and Democrats used their digital newsletters to encourage constituent mask use (Cormack and Meidlinger 2021).

But amid this shared experience and heightened uncertainty is a partisan divide that shapes lawmakers' self-presentation to elite and public audiences,

confounding a consistent disaster response. The Senate is an increasingly party polarized institution, extending from legislative behavior to the communication styles lawmakers adopt on social media (Theriault 2013; Lee 2009; Russell 2021; Russell 2018a; Gelman and Wilson 2022; Gelman 2021; Straus et al. 2016; Weaver 1986; Lee and Xu 2017; Paul and Sui 2022). The transparency and immediacy of Twitter reveals in real time how lawmakers manage a disaster through a partisan lens of crisis rhetoric that perpetuates diverging perspectives on the crisis (Green et al. 2020). The nuance in senators' digital response to the COVID-19 pandemic tells a partisan narrative through tone and framing, setting the political agenda for journalists, advocates and interest actors (Box-Steffensmeier and Moses 2021).

To understand lawmakers' partisan communication in a crisis situation, it's not just what lawmakers are saying, but also how they say it. Emotional rhetoric on Twitter has the power to motivate audiences and activate user reactions (Bollen, Mao, and Pepe 2011; Stieglitz and Dang-Xuan 2012, 2013; Brady, Han, and Pope 2007). Research suggests the emotional rhetoric elected officials use can provoke a divergence in public engagement and shift patterns of information exchange online, and those digital signals are magnified and made more relevant during a national crisis (Box-Steffensmeier and Moses 2021). We illustrate how lawmakers make digital appeals that reinforce partisan patterns by their selection of tone and sentiment to frame their partisan preferences.

Senators' Twitter activity during the initial COVID-19 outbreak, between January and May 2020, offers new insight into national lawmakers' persistent partisan rhetoric in a crisis environment. We analyze the tone of senators' Twitter activity during the outbreak of COVID-19 to identify patterns in senators' pandemic-related digital messaging. We find bipartisan acknowledgement and prioritization of the health crisis on Twitter, but Republican senators averaged more positive sentiment in their tweets and referenced the necessary economic recovery compared to Democrats who took a negative tone with their rhetoric to address the president and the government's inaction. We link presidential politics with the emotive appeals and frames that senators use to address the crisis on Twitter, building on research that considers presidential-induced partisan rhetoric in the media (Hayden et al. 2019; Russell 2018a, 2018b, 2021; Groeling 2010). We find evidence of "follow the leader" politics in this crisis environment, where senators echo a co-partisan president or use the crisis to stand against opposition leadership (Cormack and Meidlinger 2021).

#### Congressional rhetoric and social media

Senators have a continually growing toolbox for communicating their priorities and preferences, integrating Twitter as a tool for engagement with journalists,

activists, and copartisans (Lipinski and Neddenriep 2004; Oleszek 2007; Evans et al. 2017; Straus et al. 2013). Many people report they now get their news through social media (Feezell 2018; Fletcher and Nielsen 2019; Gottfried and Shearer 2019), so as the lawmakers and journalists move to Twitter, research has begun to explain lawmakers' reputation-building with their digital outreach (Hemphill et al. 2021; Russell 2018a, 2018b; Gelman 2021).

Twitter shapes political communication norms both during and after campaigns (Evans et al. 2017; Straus et al. 2016), giving lawmakers increased discretion over their political messaging, making them more efficient drivers of news and partisan content (Gainous and Wagner 2014).1 Lawmakers have increased control over messaging, a foundational shift in political communication and one reason why we expect senators' partisan behavior within Congress to extend into their digital rhetoric during a crisis event (Gainous and Wagner 2014).

Members of Congress and their communications staff both intentionally and subconsciously use emotional cues in the content that they share with audiences across both traditional and social media. Those messages that garner more engagement, more views, and greater audiences do so by utilizing effective communication with sentiment of some sort (Murphy et al. 2013). Tone underlies the partisan messaging that comes out of Congress, and as digital and social media have become a public and salient part of congressional communication, the effects of that rhetoric are visible and measurable (Gervais, Evans, and Russell 2020; MacDonald and Hua 2020).

#### Partisan tone of lawmaker rhetoric

The contagious nature of COVID-19 required governments around the world to respond quickly to an unknown and brand-new threat by encouraging a unified public response (Capano et al. 2020; Gostin and Hodge 2020; Kavanagh and Singh 2020; Merkley et al. 2020). Research has focused on how this emotional stimulus can be leveraged to increase voter turnout or to create a rally around the flag effect in the wake of a national traumatic event (Brader 2006; Feinstein 2020; Lipsitz 2018; Scheller 2019; Small, Lerner, and Fischhoff 2006; Valentino et al. 2011). The goal of this type of rhetoric is to increase national unity (Bove and Di Leo 2020; Feinstein 2020); however, in the United States this health crisis has been met with increased partisan social media messaging and polarization (Diamond 2020; Druckman et al. 2021; Scanlan 2020; Shear and Haberman 2020; Torres 2020; Van Green and Tyson 2020). A polarized public is then spurred on by the reflexive partisan disputes between elected leaders, notably the White House and Congress, as the president assumes leadership of the party image (Edwards 1989; Lee 2009; Russell 2021).

Research on polarization likens senators' behavior to that of "partisan warriors" where humiliating or damaging words are used to cue constituents and copartisans (Lee 2009; Russell 2018a; Theriault 2008). Senators' rhetoric on Twitter has furthered patterns of polarization where senators promote the party brand and attack the opposition (Russell 2018a). As parties have tended toward ideological extremity that shift is buttressed by the partisan rhetoric senators use on Twitter (Hacker and Pierson 2005; Mann and Ornstein 2012; McCarty, Poole, and Rosenthal 2006; Skocpol and Williamson 2012; Russell 2021). Polarizing rhetoric is easily identified by attacks with phrasing like "Democratic failures" or, conversely, partisan political victories like "passing Republican-supported legislation," but the tone and framing of communication can also signal copartisans.

Strategic sentiment as a tool for partisan communication is even more prevalent amid a pandemic where virtual engagement is at an all-time high. This partisan communication feeds individuals' tendencies to vote along party lines, furthering group-think where the public ignores new information about their candidate or policy positions (Groenendyk 2011). Affective Intelligence Theory suggests that when a political advertisement or candidate induces anxiety, anger or enthusiasm individuals are motivated to increase their political research, get out and vote (for or against a party member), or support a campaign (Groenendyk 2011; Ladd and Lenz 2011; Lipsitz 2018; Scheller 2019; Valentino et al. 2008). Groenendyk (2011) finds that individuals increase political participation and seek more information when they are provided with fear or anxiety-inducing emotional stimulus. Individuals tend to sort information into buckets that support their overall views, and this "affective tagging" leads to increased voter turnout but does not change a person's tendency to vote along party lines (Groenendyk 2011). This type of party loyalty often becomes a major part of an individual's identity and can lead to information sorting even outside of campaigns and elections. In a period of national crises and increased uncertainty, the public tends to look toward their party leaders for reassurance and behavioral cues (Gadarian, Goodman, and Pepinsky 2020). The polarized political messaging around the COVID-19 pandemic led to increased information seeking by the public, but it also ensured that the public would sort this information and choose which facts they wished to believe (Druckman et al. 2021; Groenendyk 2011; Lipsitz 2018). This affective polarization of a seemingly nonpolitical crisis led to highly varied behavioral responses from the public along party lines (Allcott et al. 2020; Druckman et al. 2021; Gadarian, Goodman, and Pepinsky 2020).

Additionally, emotional rhetoric theories suggest that the messaging used by political elites can be used to change public opinion and thus encourage certain public behaviors (Feinstein 2020; Lipsitz 2018; Small, Lerner, and



Fischhoff 2006). Senators could use a specific tone to induce a "rally around the flag" effect promoting national unity especially in response to a virus and predicted economic downturn; however, the overall lack of a unified federal response to the pandemic resulted in a policy response that varied by political ideology (Allcott et al. 2020).

#### Presidentially induced partisanship

Research from Gervais, Evans, and Russell (2020) suggests that positive and negative rhetoric on social media is likely to break along party lines, and the viral nature of platforms like Twitter means that rhetoric can spread rapidly and globally. This escalating polarization stems from behavior within Congress, but also studies highlight how interparty discord is spurred by partisan conflict with the President (Groeling 2010; Hua and Russell 2020; Russell 2018a, 2018b, 2021). Lawmakers are more likely to unleash a barrage of angry tweets when their party is the out-party, both within the chamber and relative to the White House (Hua and Russell 2020). President Donald Trump's preference for engaging on Twitter has solidified social media as a means to rally policy and political allies, but senators have been using social media as a tool for partisan rhetoric responding to the White House with partisan appeals—long before Trump (Gervais and Morris 2018; Russell 2018a, 2018b, 2021). It is not by chance that partisan polarization has increased with the rise of what Josh Scacco and Kevin Coe (Scacco and Coe 2021) term the "ubiquitous presidency." Presidential audiences have become more polarized over time, and Congress is one of those audiences paying close attention (Kernell and Rice 2011). The polarizing effects of presidential rhetoric on Twitter even extend into public perceptions of consumer products and companies' responses to presidential politics (Endres, Panagopoulos, and Green 2021), such that Congress has little choice but to pay attention to the president's social media rhetoric. Positive presidential qualities are regularly tied to political communication (Scacco and Coe 2021), but that communication, particularly in the era of Twitter, can have implications not only for presidential politics but also for setting the tone for congressional representation. The party-specific rhetoric senators use on Twitter not only furthers disparate styles of representation but also reinforces different information about the consequences and concerns of COVID-19.

## Partisan sentiment and policy priorities

U.S. senators—and elected officials more broadly—are increasingly known for their partisan politicking on social media (Evans et al. 2017; Gelman

2021; Gervais, Evans, and Russell 2020; Russell 2021; Straus et al. 2013), and senators are heavily relying on social media to address public concerns. Senators are routinely using Twitter to fuel partisan divisions by calling out partisan opposition (Evans et al. 2017; Gelman 2019; B. T. Gervais, Evans, and Russell 2020; Russell 2018a, 2018b, 2021), but we also expect partisan patterns in the rhetorical mechanisms senators use to present their priorities, even amid a national crisis. We assess two key mechanisms, framing and tone, that we expect reinforce the polarized supply of information and offer distinctly different narratives for copartisans. We anticipate that partisan alignment with the president explains these systematic differences in pandemic-related messaging. All senators are responding to the crisis, creating an environment of bipartisan issue attention; however, the sentiment and frame for that response offer new insight into how rhetorical techniques can escalate polarization and the central role the executive plays in that divide.

We expect that a senator's response to the virus is distinguished by sentiment and driven by the partisan conflict in Washington (Hacker and Pierson 2005; Lee 2009; Russell 2018a, 2018b; Theriault 2008, 2013). The sentiment, or tone, of communication can elicit positive or negative affect in recipients and have politically relevant outcomes. We expect Senate Republicans to adopt more positive rhetoric to address the crisis, due both to their institutional position of power in the Senate and the White House and research suggesting that Republicans, among the public, are less concerned about virus severity relative to Democrats (Allcott et al. 2020; Gadarian, Goodman, and Pepinsky 2020; Grossman et al. 2020; Kettl 2020; Pew Research Center 2020). Research also finds that Republicans in Congress have a history of using higher levels of positive, party-promoting rhetoric<sup>2</sup> than their Democratic colleagues (Gervais and Morris 2018; Russell 2018a, 2018b, 2021), and we anticipate this trend to extend into the mechanisms of that language. In the wake of President Trump's election, Democratic lawmakers have been much more negative and angry, both on the campaign trail and in their constituent communication (Gervais, Evans, and Russell 2020; Russell 2021). If tweets further the polarizing patterns in Congress, we would expect Republicans to make more positive appeals referencing the crisis and the president's positive management of it while Democratic counterparts are more likely to go negative and raise alarms about a slow response.

In tandem with the sentiment, the issue frame that senators use to talk about the crisis is also a mechanism for polarization. The threat to public health and the economic ramifications of COVID-19 are two integral pieces of the pandemic that frame each party's issue ownership and policy reputations (Van Green and Tyson 2020; Egan 2013; Petrocik 1996). We expect

that a Democratic senator is more likely to engage his digital constituency on issues of public health because these are traditional strengths of the Democratic party (Fagan 2021). Additionally, the link between Republican management of crisis by the president may further propel Democrats to address the health concerns. By maintaining "issue ownership" of specific policies, and choosing to highlight the other party's inefficiencies, parties choose issues where they hold the reputational advantage (Bobba and Hube 2021; Budge and Farlie 1983; Egan 2013; Petrocik 1996). In contrast, we expect Republicans to frame discussions in terms of the economic response to the crisis, given that conservative parties are more likely associated with macroeconomic issues and their opportunity to drive the recovery as the partisan majority in the Senate and the White House.

#### Materials and methods

This analysis assesses the polarization in senators' COVID-19-specific rhetoric on Twitter during the outbreak and the initial partisan response to the pandemic. Research shows that the Senate is steadily becoming more partisan—mirroring its House counterpart (Brady, Han, and Pope 2007; Theriault 2008); however, given the chamber's historical emphasis on individual autonomy, evidence of party polarization only furthers our expectations about the entrenchment of partisan politics across differing political contexts. To assess senators' polarizing rhetoric amid the pandemic, we collected 54,836 tweets from January 1, 2020 to May 7, 2020, using Twitter's public API. This time period captures the initial escalation of the COVID-19 pandemic, intentionally limiting the period to early May to separate the discussion of Covid from that of systemic racism and criminal justice in the aftermath of George Floyd's death. The data is collected from senators' in-office or individual accounts and does not include campaign-associated accounts, since our primary interest is senators' roles as representatives rather than candidates. Twitter frequency among Republicans and Democrats is relatively similar; however, during this time, a Democratic senator totaled about 599 tweets on average compared to 533 for a typical Republican. Heightened Twitter activity by Democrats is expected, given that minority-party lawmakers routinely seek alternative venues for their political agenda when they lack control over the institutional agenda (Morris 2001; Russell 2021). The total monthly tweets by either party is relatively stable over time (Figure 1), showing the persistent use of Twitter as a mechanism for constituent communication both before and during the COVID-19 outbreak across party lines.

Twitter is used by all senators, regardless of party, but our interest is not the platform but rather the variable tone and framing that lawmakers

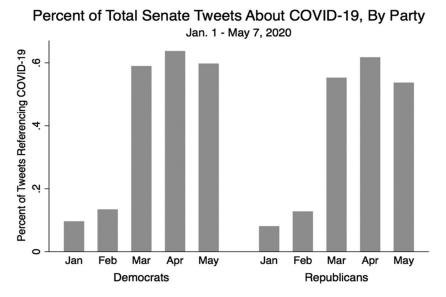


Figure 1. Monthly COVID-19 mentions by party.

make on it. To capture the nature of senators' pandemic response, each tweet is coded for the presence of Covid-related rhetoric—ranging from eight percent of all tweets in January to more than 62 percent of Senate tweets in April 2020. We identify tweets about the pandemic in two ways: first, identifying tweets by Covid-related hashtags associated with a tweet, and second, by a custom dictionary of words and topics related to the crisis.<sup>3</sup> For the hashtag analysis, we identified 67 unique, pandemic-related hashtags, representing 7,824 tweets—about 14 percent of all tweets from January to May. These hashtags included references to #COVID-19, #CARESACT, #PPE, and #Stayhome (Table 1). Given that less than 30 percent of all tweets during this time period included a hashtag, we extended our analysis to the text of senators' tweets to identify pandemic-related content. We identified Covid-related tweets based upon a custom dictionary of pandemic-related words. The dictionary included 73 words to identify those tweets. To validate the accuracy of the dictionary, a trained research assistant re-coded a random sample of tweets to identify mentions of the Covid crisis. The research assistant coded the 1,000-tweet sample in a binary fashion according to whether the tweet makes a coronavirus reference and found 87.3 percent of tweets identified as Covidrelated by the coder were actually about Covid. Tweets with pandemic-related rhetoric included explicit mentions of the crisis such as "COVID-19" or the associated economic or health implications, such as "tracing" or "recovery". Non-pandemic tweets are those messages that have no identifiable mentions of the crisis, such as other policy issues, constituent communication, or holiday messages.

Table 1.	Examples	of COVID-19	related	words	on
Twitter.					

In-text words	Hashtags
CARESAct	Alone Together
COVID19	CARESAct
Coronavirus	COVID19
Outbreak	Coronavirus
COVID-19	CoronavirusOutbreak
Coronavirus	CombatCOVID19
Coronvirus	CombatCOVI19Challenge
Pandemic	Coronavirus
COVID	Coronvirus
Covid	CoronavirusPandemic
Flatten	COVID
Quarantine	Covid
Heroes	FlattenTheCurve
PPE	COVID_19
Jersey Strong	NationalDoctorsDay
Back to work	Quarantine
Masks	TogetherApart
Cures	COVID19HeroesFund
Nurses	COVID19NC

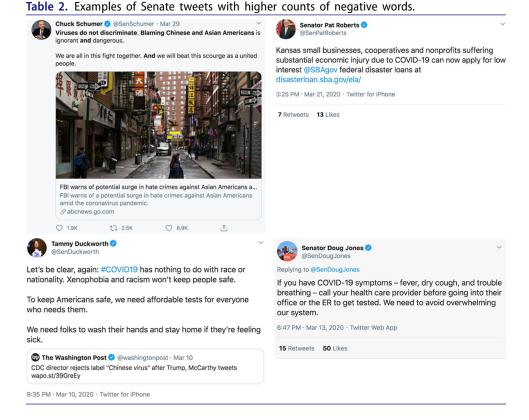
Senators' tweets during the early months of 2020 show a monthly increase in the number of tweets addressing the pandemic and in the percentage of total tweets on the issue (see again Figure 1). In January, there were minimal references to the health crisis; however, by the first week of May, the crisis was arguably the central crisis—notably before the death of George Floyd in Minnesota that sparked a nationwide conversation about systemic racism and criminal justice policy. When we break that analysis up by party, we see a broad response to the crisis. Democrats appear to spend a slightly higher percentage of their total tweets on COVID-19, but the overall patterns of changing rhetoric are similar. We expect all senators to respond to the crisis; however, we anticipate systemic difference among those communications.

To assess partisan patterns of crisis response, we break up the analysis of COVID-19 tweets according to tone and framing. We expect partisan patterns between attacking a political opponent for pandemic missteps and emphasizing positive recovery solutions—capturing both different sentiment and policy images in appeals on social media. We used Linguistic Inquiry Word Count (LIWC) for its dictionary-based analysis to estimate senators' use of negative and positive rhetoric in their public agendas on Twitter, following prior research that measures emotional affect in tweets (Gervais and Morris 2018; Gervais, Evans, and Russell 2020). Research on communication patterns during the COVID-19 crisis, specifically, have regularly used LIWC as a reliable tool for analyzing political rhetoric amid the crisis (Xue et al. 2022). LIWC enables us to identify words and word stems associated with variable sentiment and calculate the number of words in a tweet that reflect either positive or negative emotions (Tausczik

and Pennebaker 2010). Additionally, our analysis does not label the sentiment of tweets in a mutually exclusive way, as sentiment is done as an index of how much positive or negative sentiment is present. Examples of tweets with higher indexes of positive and negative sentiment are included in Tables 2 and 3.4

Analyzing senators' tweets from January to May 2020, when we break down the tone of Covid-specific tweets by party, we find senators using emotional rhetoric in ways that reinforce partisan patterns of communication. Senators from both parties are more likely to average more positive vs. negative words in their rhetoric about COVID-19, but it appears that difference is greatest for Republicans compared to Democrats when talking about the crisis (Figure 2). For Democrats, we see a similar trend with positive vs. negative rhetoric in their tweets, but the average negativity is higher than Republicans. So, while the rate of positive rhetoric is more common for both Republicans and Democrats in discussions about the pandemic, the relative level of positive and negative rhetoric senators use in those discussions differs.

A case study of senators' tweets from April 1st, about a month after most senators' initial response to the crisis, shows that many of those tweets on the topic of the pandemic reflect these partisan patterns in tone.



On this day, senators sent more than 450 tweets about the COVID-19 crisis, which was about two-thirds of the total number of tweets sent by senators' official accounts that day. Of those tweets addressing the crisis, many struck a positive tone—talking about relief efforts, information for testing, and services for constituents. But that positive tone was somewhat conditional by party, as many of the most positive tweets that day were by Republican senators. Examples of those tweets included Sens. Marco Rubio and Lamar Alexander talking about relief for small businesses and supplies for local medical providers (Figures 3 and 4). Despite the ideological and professional differences between these two Republicans—one potential presidential candidate and one retiring from office—they illustrate a common crisis strategy by Republicans to provide solution-oriented, positive information about pandemic response. We find similar patterns in the following weeks, showing where Republican senators continued to average more positive rhetoric in their tweets relating to the pandemic. While Rubio is one of the most visible and vocal senators on Twitter, the consistent message between him and Alexander demonstrates that it is not just the loudest or most ideological senator who reflects a partisan, positive tone.

Looking more closely at the finding for additional negative rhetoric by Democrats, we see that much of that negativity is driven by Democratic senators' frustration with the president and executive inaction. Looking again at those 450 tweets from April 1st, we find helpful examples of that negative sentiment by Democrats addressing the pandemic (Figures 5 and 6).



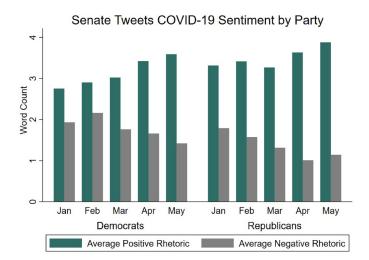


Figure 2. COVID-19 sentiment by party.



Figure 3. Examples of positive-sentiment in tweets by Republican Senators.

Democratic Sens. Kamala Harris and Jack Reed both used Twitter to call out the administration and government inefficiencies for services during the crisis. Reed, a senior senator and policy leader, and Harris, a former presidential hopeful and future vice president, have very different Senate trajectories within their caucus but similar rhetoric in this crisis environment.

These examples offer further support for our expectation that tone can be a common mechanism for fueling partisan patterns of digital



Figure 4. Examples of positive sentiment in tweets by Republican Senators.



Figure 5. Examples of negative sentiment in tweets by Democratic senators.

communication in a crisis environment, but we also consider if those partisan differences extend to how senators frame the crisis. While some senators are focusing on the implications for public health other senators are more focused on the economic implications of the public's limited mobility and reduced spending capacity. Given the issue-ownership literature that links party reputations to specific issues, we expect Democratic senators to focus on health concerns while Republican senators prioritize economics. We use our original dictionary to identify those tweets that explicitly frame the crisis in terms of economic concerns and those than frame the crisis in terms of its public health effects. Examples of those words are included in Table 4.

Looking at the graph of senators' tweets by issue frame during the first five months of 2020, we see what appears to be a partisan pattern of Covid-specific tweets by party and issue (Figure 7). For health-related information on Twitter (left-side panel of Figure 7), Democrats appear, on average, more likely to frame the pandemic in terms of its public



Figure 6. Examples of negative sentiment in tweets by Democratic senators.

Table 4. List of economic and health-specific COVID-19 words on Twitter.

Public health	Economic
Outbreak	CARES
Pandemic	CARES Act
Flatten	Back to work
Quarantine	Paycheck Fairness
PPE	Paycheck Protection
Masks	PPP
Cures	PPP loan
Nurses	Essential
Social distancing	Assistance
Social distance	Relief
Spread	Unemployment
Stay home	Labor force
Virus	Non-essential
Antibody	Frontline
Tracing	Stimulus
Fauci	Bailout
Tests	DPA
Crisis	Sick leave
Nursing	Retailer
Nurses	Mnuchin
Hospital	Monthly payment
Testing	Lenders
Uninsured	Loan
Sanitizer	Recover
Health	Rebates
CDC	Defense Production
Protective equipment	
ace cover	

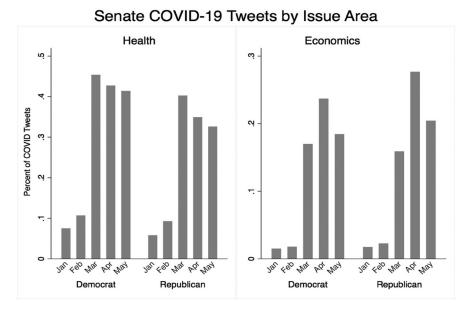


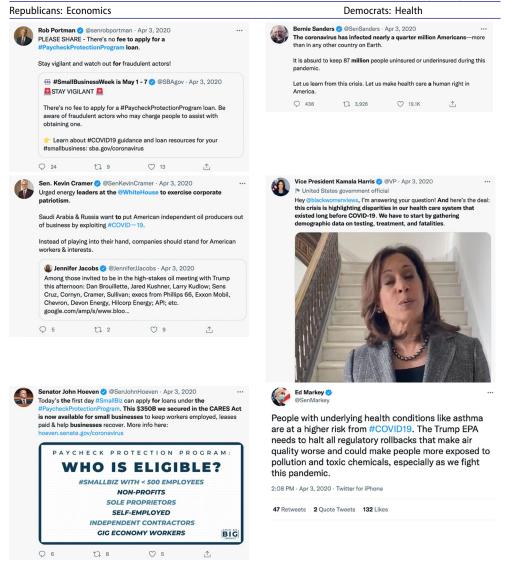
Figure 7. Senators' COVID-19 tweets by issue area and party.

health implications compared to Republicans when talking about the crisis. We see a similar pattern of rhetoric, but rather higher levels of health-specific rhetoric by Democrats. Examples of that include Sen. Bernie Sanders connecting the pandemic to the problem of underinsured Americans and then-Sen. Kamala Harris addressing the healthcare inequities made salient by the crisis (Table 5). For economic implications (right-hand panel of Figure 7), we see somewhat opposite trends such that Republicans, particularly in April and May, were communicating more about the economic impacts in their tweets than their Democratic colleagues. Examples of that include senators promoting the Paycheck Protection Program and encouraging corporate patriotism in a time of crisis. The patterns over time on issue selection are similar—as senators from both parties are likely responding to the changing nature of the crisis and political climate—but the relative level of Twitter attention by issue area is variable by party.

#### Results

To further test our expectations, we estimate a series of logit and negative binomial count models where the unit of analysis is the tweet, with fixed effects by senator. We cluster our errors by senators because the sentiment in each tweet is likely correlated within senators' Twitter feeds. The data includes a number of variables that capture differences in legislative behavior. The data for the analysis includes a binary code for party affiliation (1 for Republican, 0 for Democrats), our explanation for partisan differences in

Table 5. Example of senators' economic and health frames for the covid crisis, by party.



rhetoric and tone. We also include covariates for leadership status within the party (leader = 1), gender (male = 1), and upcoming candidacy for reelection (candidate = 1). Additional senator-specific variables include age, electoral security, ideological extremism, and total tweets to control for differences in Twitter frequency (Table 6). State-specific variables that address the severity of the crisis and local responses to the crisis are included with the number of deaths in the state and the enactment of governors' stay-at-home orders.

We control for gender given that research suggests increased social media use by minorities and that women running for Congress use more negative rhetoric on social media. (Evans and Clark 2016; Krogstad 2015).<sup>5</sup>



Table 6. Summary statistics for independent variables.

Variable	Min	Mean	Max	Std. Dev.
Senator characteristics				
Party	0	0.49	1.00	0.4999
Party leader	0	0.19	1.00	0.3894
Gender	0	0.73	1.00	0.4454
Time until next election	21,552	22,466.84	23,744	701.0990
Age	40	63.75	87.00	10.2576
Seat safety	26	53.40	68.00	6.8858
Ideological extremity	0.056	0.42	0.91	0.1629
Number of Tweets	20	759	2,242	435.6328
State characteristics				
Number of Covid deaths	0	288.11	23,905.00	1420.45
Stay at home order	0	0.27	1.00	0.445
Mask mandate	0	0.0387	1.00	0.193
Religious exemptions	0	0.3854	1.00	0.487

We consider a senator's age because a senator's familiarity with new technology, though primarily at the discretion of staff, may influence social media priorities within the communication office (Mellon and Prosser 2017). We control for whether a member is running for office in the next election cycle because senators' policy priorities and communication strategies often shift as elections near (Titiunik 2016). A state's political climate and a senator's seat security is measured by the margin of victory for the presidential candidate representing a senator's political party (Russell 2021). Additional legislator characteristics are captured with variables for legislative effectiveness, ideological extremism and the polarization among partisans (Volden and Wiseman 2014). For extremism, we use the DW-NOMINATE scores for the average ideological distance between a senator and the party median. The asymmetry in Covid-related rhetoric may be a function not just of party, but also of a state's crisis response (Kerr et al. 2021; Hao and Shao 2021). We include the state's number of Covid deaths relative to the population and tweets sent during governors' stay-at-home orders to capture the relative magnitude of the crisis among senators' constituents. We also include additional measures of mask mandates for front-facing businesses and religious exemptions to control for state-level response to the crisis.

The first model is a logit model that allows us to evaluate possible partisan differences in the broad mention of COVID-19 or related crisis issues, regardless of sentiment or issue framing (Table 7). The results suggest that senators across the political spectrum are addressing the virus; however, Republican senators are slightly more likely to mention the crisis. One reason for this may be the party's majority status in the Senate and the White House, giving them more political power to address the crisis. Party leaders and those with less certain electoral futures are also spending added time on the issue given their heightened institutional power to seek policy solutions and electoral circumstances that necessitate continual attention to the

 Table 7. Logit model of senators' tweets mentioning covid.

Up for reelection	0.0563
	(0.0812)
Male	-0.0716
	(0.0806)
Party leaders	0.246***
	(0.0687)
Age	-0.00260
	(0.00372)
Republican	0.364***
	(0.0880)
Extremity	-0.114
	(0.290)
Seat safety	-0.0124**
	(0.00519)
Total tweets	0.000117**
	(5.93e-05)
Stay home order	1.470***
	(0.0673)
Deaths	1.35e-05
	(2.21e-05)
Mask mandate	0.278
	(0.176)
Religious exmp.	-0.107
	(0.0744)
Constant	-0.218
	(1.368)
Observations	54,846

Robust standard errors in parentheses. \*\*\* *p* < 0.01, \*\* *p* < 0.05, \* *p* < 0.1.

Table 8. Count model of senators' positive words when mentioning covid.

Up for reelection 0.0222 (0.0388)  Male -0.0358 (0.0374)  Party leaders 0.0427 (0.0369)  Age 0.00108 (0.00199)  Republican 0.185*** (0.0457)  Extremity -0.377**
Male     -0.0358       (0.0374)       Party leaders     0.0427       (0.0369)     0.00108       (0.00199)     0.185***       (0.0457)
Republican  (0.0374) (0.0374) (0.0369) (0.0369) (0.00108) (0.00199) (0.00199) (0.0457)
Party leaders 0.0427 (0.0369) Age 0.00108 (0.00199) Republican 0.185*** (0.0457)
(0.0369) Age 0.00108 (0.00199) Republican 0.185*** (0.0457)
Age 0.00108 (0.00199) Republican 0.185*** (0.0457)
(0.00199) Republican 0.185*** (0.0457)
Republican 0.185*** (0.0457)
(0.0457)
Extremity -0.377**
(0.161)
Seat safety -0.00121
(0.00229)
Total Tweets -0.000101**
(4.08e-05)
Deaths 2.90e-06
(1.10e-05)
Stay home order 0.0814***
(0.0269)
Mask mandate 0.0139
(0.0397)
Religious exmp. $-0.0683*$
(0.0397)
Constant 1.663**
(0.784)
Observations 21,859

Robust standard errors in parentheses.

<sup>\*\*\*</sup> p < 0.01, \*\* p < 0.05, \* p < 0.1.

virus. While we find some partisan difference, a notable effect for Covidrelated tweets is the presence of a governor's stay-at-home order. Senators from a state with such an order are more than 30 percent more likely to talk about the crisis compared to those senators from states with no statewide mandate, highlighting the role of state response and crisis severity.

Senators' overall Covid-related Twitter content appears strongly associated with state-level conditions, but our primary interest is the nature of that response. When we disaggregate senators' Twitter rhetoric on COVID-19 by tone, we find distinct and diverging partisan patterns for both positive and negative sentiment that support our first set of expectations. We analyze the sentiment of senators' tweets with a count model that tests for partisan differences with a dependent variable that counts the number of positive or negative words in senators' Covid-related tweets (Table 8).6 For positive sentiment, we find a partisan pattern of rhetoric, similar to what we saw in the graphs (see Figure 2), such that Republican senators are more likely to include more positive words in their tweets about the virus (Figure 2). The results of the count model indicate Republican senators were more likely to use positive appeals than their Democratic counterparts—affirming our expectation that Republicans are offering a diverging message from Democrats with their positive sentiment. Republicans, on the whole, issue 1.2 times more positive tweets than Democrats, about a 20 percent higher rate of positive tweeting. We attribute this partisan difference to the institutional partisan dynamics within the Senate and senators' party position relative to the president, echoing research that confirms partisan power dynamics shape constituent rhetoric on social media (Gelman 2021; Gervais and Morris 2018; Russell 2018a, 2018b, 2021). Republican control in the Senate and White House provides the opportunity for Republican senators to take responsibility for policy solutions—seeking positive outcomes that would maintain their majority control. Even when controlling for state-level responses to the crisis, party affiliation is strong predictor of positive rhetoric.

Additional explanations include ideological extremity and Twitter norms as more moderate senators and those who limit their Twitter activity are more likely to use positive rhetoric to address the crisis. Moderate Republicans, such as Susan Collins from Maine, may be more likely to stay positive given the polarizing nature of emotional appeals and the need to highlight successes for an ideologically moderate constituency. While members of Congress with more polarized or extreme views are more likely to be featured by partisan media outlets (Davis and Dunaway 2016), it seems positive rhetoric is not driven by those more ideologically extreme senators.

For negative COVID-19 sentiment on Twitter, Democratic senators have a higher probability of using negative words in their Twitter

Table 9	Count m	nodel of	senators'	negative	words	when	mentioning	covid
iable 3.	Count III	iouei oi	senators	Heyative	worus	wileii	mentioning	coviu.

0.000007
-0.000287
(0.0508)
0.0256
(0.0756)
-0.0208
(0.0682)
0.000526
(0.00300)
-0.543***
(0.0716)
0.786***
(0.213)
0.00229
(0.00443)
-1.56e-05
(4.91e-05)
8.51e-06
(1.16e-05)
-0.167***
(0.0373)
0.0232
(0.0584)
0.00685
(0.0775)
-0.884
(1.082)
21,859

Robust standard errors in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

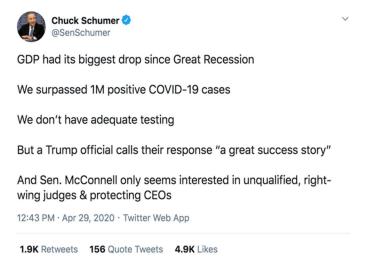


Figure 8. Democratic senator's tweets critiquing the president's COVID response.

conversations with the public (Table 9). Democratic senators are 1.7 times more likely (a 70% increase) to use negative rhetoric when talking about the COVID-19 crisis. Democratic senators, particularly those who are ideologically more liberal, use a greater number of negative words on Twitter to describe the pandemic, affirming our expectation about



With the USPS facing the twin threats of the COVID-19 pandemic and a president who wants to hasten its demise, we must put all our effort toward strengthening this American institution.

My solution? Postal banking and universal vote-by-mail.



Figure 9. Democratic senator's tweets critiquing the president's COVID response.

Democrats' higher use of negative appeals. This party polarized negativity is likely due to frustrations with the government response, specifically the Republican-controlled agenda in the Senate and the pandemic response by the White House. For example, Sen. Chris Murphy, one of the most ideologically liberal Democrats in the Senate, regularly took to Twitter to talk about Republican failings of the crisis and the looming threats of the pandemic to constituents. He characterized the Trump administration's response as "frightening" and argued that it would "cost lives."8 Additional examples of this negative COVID-19 rhetoric come from Democratic Sens. Chuck Schumer and Kirsten Gillibrand in New York who used their platform to raise alarms and criticize Republican pandemic efforts (Figures 8 and 9).

The analysis of senators' sentiment during the initial response to the Covid crisis indicates that the tone of responses divides along party lines and uses tone to reinforce different partisan perceptions about the nature of the policy problem. Even during a time of national crisis where we might expect less polarizing rhetoric, we see sentiment as a tool to signal copartisans on Twitter.

We further test senators' polarized responses to COVID-19 by looking at the issues prioritized in light of the crisis. Lawmakers use their strategic communications with constituents to frame issues for the public and

Table 10. Logit model of senators' tweets on covid's health and economic impacts.

	Health	Economics
Up for reelection	0.0284	0.0468
•	(0.0905)	(0.0958)
Male	-0.0882	0.00286
	(0.0896)	(0.107)
Party leaders	0.299***	0.406***
	(0.0806)	(0.0925)
Age	-6.37e-05	-0.00461
	(0.00553)	(0.00508)
Republican	0.0624	0.539***
	(0.0907)	(0.120)
Extremity	0.00638	-0.201
	(0.257)	(0.310)
Seat safety	-0.0101	-0.00143
	(0.00630)	(0.00643)
Total Tweets	1.22e-05	1.04e-07
	(7.83e-05)	(8.91e-05)
Stay home order	0.948***	1.377***
	(0.0831)	(0.113)
Deaths	7.43e-06	1.80e-05
	(1.56e-05)	(1.43e-05)
Mask mandate	0.225*	-0.00795
	(0.122)	(0.170)
Religious exmp.	0.0599	-0.151
	(0.0865)	(0.0939)
Constant	-0.666	-0.613
	(1.672)	(1.690)
Observations	54,836	54,836

Robust standard errors in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

potentially shape behavior (Rozell 2000; Scheufele and Tewksbury 2007). We expect senators will frame the issue—whether in terms of economic impact or public health—according to party, with Republicans prioritizing economics and Democrats highlighting health. To test our expectations about the framing of COVID-19, we estimate two logit models, similar to our first analysis of overall Covid-related rhetoric, where the dependent variable is binary and takes the value of 1 if a tweet about COVID-19 mentions a) the economic impact or b) public health implications and 0 if it does not.

The results from the model examining senators' Twitter rhetoric on the public health implications of COVID-19 suggest that party leadership and those electorally vulnerable are more likely to talk about the public health crisis (Table 10). We see no statistically significant partisan differences, but rather those senators from states with stay-at-home orders are more likely to address the public health crisis stemming from the pandemic. The salience of the health crisis may be one reason why all senators, regardless of party, are talking about the crisis in terms of its effects on public health, healthcare workers, and the effectiveness of the healthcare system. We find no evidence of polarizing frames around the issue of



Figure 10. Republican senators highlighting the economic implications of COVID response on Twitter.



Figure 11. Republican senators highlighting the economic implications of COVID.

public health, possibly due to the salience of the issue and the fact that many senators lack the political latitude to ignore the health ramifications for their constituents.

Discussions of the health implications of the pandemic do not appear to be reinforcing partisan divisions; however, when we look at those tweets talking about the economic implications, party is a significant predictor of tweets addressing the crisis. Republican senators, in particular those from states with a stay-at-home order, are more likely than Democrats to talk about the economic implications of the crisis, such as references to small business, loan forgiveness and the recovery. This matches our expectation that Republicans, due at least in part to their issue reputation on economic issues and majority status in the Senate and White House, are likely to frame the crisis to their political advantage. Examples of this GOP-heavy rhetoric on Twitter include tweets from junior Republican senators Marsha Blackburn and Joni Ernst, both highlighting the economic

ramification of the virus and small business solutions being discussed in terms of economic recovery (Figures 10 and 11). Additionally, party leaders are also more likely to address the crisis' economic implications, consistent with the finding for health-related implications and overall mentions of the crisis. The partisan difference in the frame of the issue again suggest that the mechanisms underlying senators' rhetoric are potential drivers of polarizing rhetoric. And the economic discussions are often tied to the positive rhetoric in senators' tweets, with economic-related Covid tweets using 25 percent more positive words compared to all other pandemic-related posts.

#### Conclusion

Amid one of the worst health and economic crises our nation has felt, we show party polarization persists via the rhetorical mechanisms lawmakers use to publicly engage on Twitter. National political leaders across the ideological spectrum continue to send divergent messages about how we should think about the crisis, and studies show this impacts the extent to which copartisans engage in public health efforts (Allcott et al. 2020; Gadarian, Goodman, and Pepinsky 2020; Druckman et al. 2021). Senators are increasingly key national voices and what they say, and just as importantly how they say it, can mobilize public response to an emerging pandemic. This research provides further evidence for the power of political polarization online that carries through a national crisis—a time when many people are information-seeking and primed to look for information online. In addition to the public health implications of differing descriptions of crisis severity, the health of democracy is also tested when disparate narratives are told about not only politics but the daily experiences within our society.

Our research on digital messaging suggests that partisan signals from lawmakers are not only strictly tied to content or issue attention—all lawmakers rallied around the flag to talk about the crisis—but the nature of that discussion can reinforce partisan perceptions about how we should think about the crisis. Rather than seeing a reversion to the mean in terms of a unified response to the health and economic disaster, we see how lawmakers strategically rely on tone and issue framing to tailor different partisan messages for their particular digital constituency.

We find considerable evidence to suggest that the pandemic-related information coming from senators is party-driven in both tone and, in part, issue priority—offering two important ways in which elected officials reinforce partisan perceptions despite shared experiences on a national issue. During the initial response to the pandemic, Republican senators were more likely to use positive rhetoric on Twitter, talking about the solutions being sought, the relief being offered, and the support being offered to small businesses. The positive tone of Republican senators' responses reflects the party's majority status in both the Senate and in the White House-linking partisan rhetoric to the institutional power dynamics in Washington and suggesting a "follow the leader" effect in times of crisis (Cormack and Meidlinger 2021). With the power to control the policy agenda, Republican senators were more likely to highlight positive policy solutions they could take credit for rather than decrying a subpar response when they controlled the mechanisms for a response. As the minority party in the Senate, Democrats were more likely to incorporate negative rhetoric in their crisis response—matching previous scholarship about minority-party rhetoric in both Congress and relative to the White House (Groeling 2010; Morris 2001; Russell 2021). These results link the linguistic choices that senators make in terms of sentiment to the partisan patterns that we see in lawmakers' political communication and illustrate the persistence of these partisan frames for communication despite a crisis environment.

In addition to partisan sentiment, we also find some support for partisan patterns in issue-framing, echoing issue-ownership literature that suggests Republicans benefit when issues are framed in terms of macroeconomics (Egan 2013; Petrocik 1996). In this crisis environment, Republican senators were more likely to prioritize the economic implications and necessary recovery by talking about small business, loans, and investments. While we find no evidence that Democrats prioritized the health concerns at higher rates than Republicans, this does mean that Republicans were more likely to shift the narrative toward economic concerns, with the potential to message on issue positively associated with the Republican Party. An additional noteworthy finding is that despite state-by-state variation in the severity of the crisis, most notably through stay-at-home orders, we still find robust explanatory power in senators' partisan attachments. The presence of a stay-at-home order is associate with increased COVID-19 rhetoric, but the overall response by senators is consistently predicted by political factors in addition to medical necessity.

In a crisis climate, senators' agenda-setting power is somewhat limited by the pressing needs of a pandemic, yet we still see senators using their rhetoric to reinforce their partisan identities. We may think of senators' campaign communications as the primary platform for partisan rhetoric, but even during an uncertain time for governance, senators' tweets reveal how central partisan rhetoric has become to the reputations that they build while in office. Senators get to choose how they present themselves to the public, and the rhetorical mechanisms they use to connect with constituents are variable by party affiliation—regardless of normal or crisis circumstances.



#### **Notes**

- 1. Early studies of social media and politics have analyzed Twitter as a mechanism for spreading information and seeking support (Bennett and Segerberg 2013; Jungherr and Jürgens 2013; Papacharissi and de Fatima Oliveira 2012; Poell and Borra 2012; Tufekci and Wilson 2012). Congressional Twitter studies have addressed politicians' adoption of Twitter (Chi and Yang 2010; Lassen and Brown 2011; Peterson 2012; Straus et al. 2013), and how Twitter has become a normalized communication tool in Congress (Evans et al. 2017; Gelman 2019; Gervais and Morris 2018; Russell 2018a, 2021).
- Defined by Russell (2018a), this rhetoric generally includes positive overtones that signal favoritism or support for one's own party, such as promoting the party's candidates in upcoming elections, promoting party-specific legislation, or emphasizing positive party performance.
- 3. A complete list of COVID-related words for dictionary is included in the Appendix.
- 4. Examples of both positive and negative words, and specifically Covid-related messaging, are included in the Appendix.
- 5. Race is not included in the model due to a lack of significance and minimal racial diversity in the Senate.
- 6. Examples of positive and negative words included in the Appendix
- 7. The coefficient on Republican has a point estimate of 0.543, so the ratio is exp(.543) = 0.58 times less than Dems. This means Dems have a negative tweet rate that is 1/ exp(.543) = 1.72 times that of Republicans, or 72% more. Alternatively, 1/exp(-.543-1.96\*.0716) = 1.98 and  $1/\exp(-.543 + 1.96*.0716) = 1.50$ , so Democrats have somewhere between a 50% and 98% higher negativity rate.
- 8. https://twitter.com/ChrisMurphyCT/status/1232312117190987776.

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The authors report there are no competing interests to declare.

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# Appendix. Polarized digital appeals

Table A1. Percentage of Senate tweets mentioning COVID-19.

January	8%
February	13%
March	57%
April	62%
May	56%

Table A2. Dictionary of COVID-19 related words on Twitter.

In-text words	Hashtags
CARES	Alone together
CARESAct	CARES
COVID19	CARESAct
Coronavirus	COVID19
Outbreak	Coronavirus
COVID-19	CoronavirusOutbreak
Coronavirus	CombatCOVID19
Covid19	CombatCOVI19Challenge
Coronvirus	Coronavirus
Pandemic	Covid19
COVID	Coronvirus
Covid	CoronavirusPandemic
Flatten	COVID
Quarantine	Covid
Heroes	FlattenTheCurve
PPE	COVID 19
Jersey Strong	NationalDoctorsDay
Back to work	quarantine
Masks	TogetherApart
Cures	COVID19HeroesFund
Nurses	COVID19NC
Social distancing	COVID19TX
Paycheck fairness	COVID19WA
Paycheck protection	COVID2019
PPE	COVIID19
PPP	FamiliesFirst
PPP loan	flattenthecurve
Essential	FlattenTheCurve
Social distance	fundthefrontlines
Spread	GetMePPE
Stay home	BeatCoronaVirus
Vote by mail	IDCOVID19
Virus	InThisTogether
Emergency	lowansTogether
Antibody	Jersey Strong
Defense production	LetsGetBackToWork
Assistance	LiftingUpLA
Relief	MaketheMasks
Tracing	Masks\$All
Covid	CuresForAll
Unemployment	NurseAppreciationWeek
Fauci	socialdistancing
Tests	PaycheckFairness
Crisis	PaycheckProtectionProgram
Labor force	PPE
Outbreak	PPP
Nursing Non-essential	PPPLoan PPPworks
Frontline	
	ProtectEssentialWorkers
Nurses	Social Distancing (Continued)

(Continued)



## Table A2. Continued.

In-text words	Hashtags	
Hospital	Slowthespread	
Testing	StopTheSpread	
Stimulus	StayHome	
Bailout	StayHomeforNevada	
DPA	StayHomeMN	
Uninsured	StayHomeSaveLives	
Sick leave	SweetHomeStayHome	
Retailer	Telehealth	
Sanitizer	TennesseeStrong	
Challenges	TexasTogether	
Mnuchin	ThankYouNurses	
Health	ThisIsWhatStrengthLooksLike	
Monthly payment	TogetherWeCan	
Lenders	VoteByMail	
CDC	WorldHealthDay	
Uncertainty	WVSafe	
Loan	WVStrong	
Protective equipment		
Recover		
Face cover		
Federal response		
Rebates		
Defense Production		

Table A3. Examples of positive and negative words.

Positive emotion	Happy, good, love, nice, sweet, thank, cool, alright	Total positive words in
Negative emotion	Sorry, bad, weird, problem, sad, wrong, afraid, hurt, ugly	dictionary: 620 Total negative words in dictionary: 744