

## ORIGINAL ARTICLE

# Say it again with feeling: Issue ownership and candidate communication using Twitter

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## Abstract

**Objectives:** We investigate to what extent partisan political candidates in the United States pay attention to different issues in their campaign communication, and whether they systematically deliver messages using different types of sentiment.

**Methods:** We analyze the 267,538 tweets issued by candidates for the U.S. Congress during the 2018 midterm elections using a combination of latent topic modeling, sentiment analysis, and regression analysis, estimating both issue emphasis and the emotional tone of communications.

**Results:** We find that candidates discussed a small number of distinct issues. Sentiment analysis reveals that the emotions used to convey these topics varied considerably more than interparty emphasis. Moreover, we observe that Democrats and Republicans discussed the same topics in very different ways, with Democrats—the out-party at the time—proving more negative in their messaging.

**Conclusions:** When partisans discuss those issues their respective parties “own,” there are asymmetries in the emotion they use to communicate about these issues. The concept and measurement of issue ownership are complicated.

## KEYWORDS

agenda-setting, campaigns, issue ownership, sentiment analysis, social media, Twitter

The Democratic and Republican Parties have long been perceived to be differentially associated with particular issue domains central to American politics (Petrocik 1996). This association—issue ownership—is useful for partisan elites attempting to present a stark alternative to their electoral opponents and an attractive set of policy goals to their supporters. It also simplifies the electoral environment, clearly distinguishing the priorities of the parties and, subsequently, enhancing their ability to effectively communicate their message.

But, why does the mass public perceive certain issues to better “match” with one party than the other? We know that Republican messaging emphasizes taxes more than Democratic messaging does. Likewise, Democrats place greater emphasis than Republicans on education policy in party and campaign platforms. That said, not all issues receive differential attention from the parties. Moreover, members of both parties,

when in power, are charged with crafting policy and voting on all manner of issues. No elected official is completely free from the issues emphasized by the other party (Sides 2006): Democrats must address national defense, foreign policy, and taxes, just as Republicans must address education, healthcare, and social security, despite these issues being perceived to be strongly associated with one party (Petrocik 1996). Finally, parties are punished for (perceived) poor performance on major issues like the economy and foreign policy, regardless of ownership (Marsh and Tilley 2009).

More than mere emphasis, we argue that *how* party members discuss issues impacts perceived ownership and agenda-setting, and distinguishes the parties from one another. Republicans do not merely discuss taxes more than Democrats, they convey anger and disgust about the size of the federal government and its negative impact on people. Democrats do not merely discuss climate change more than Republicans, they convey anger at Republicans' lack of initiative about this issue and fear that we are approaching a point of no return. We argue that the concept of issue ownership should be seen more broadly as a combination of both content and style, with a focus on issue emphasis and emotional delivery—it is not just what you say, but how you say it.

In this article, we fuse work on emotions and elite social media communication, examining what issues candidates for congressional office during the 2018 U.S. midterm elections tweeted about, and what emotions they used in discussing those topics. Much of the research on issue ownership is based on what scholars have deciphered from people's perceptions of parties and campaigns (Petrocik, Benoit, and Hansen 2003), or, more recently, from campaign ads (e.g., Ridout and Searles 2011; Sides 2006, 2007). In this work, we employ a different tactic, investigating issue ownership based on how candidates for office actually speak about issues in campaign messages to would-be constituents. In particular, we use topic modeling—a latent variable formulation of automatic content analysis—to identify major political issues discussed using 3,761,698 words nested in 267,538 tweets across 767 candidates for the U.S. House and Senate. We find that candidates spent most of their time on Twitter discussing approximately 17 different topics, such as healthcare, the economy, and climate change. Although the issue ownership literature would predict partisan asymmetries in the extent to which these topics were discussed by candidates, we observe little evidence for heterogeneity in topic focus across party lines. We also observe few differences by candidate race or gender, incumbency status, or race competitiveness.

We do, however, observe partisan differences in the emotional delivery of issue content. Using validated dictionaries of words corresponding to discrete sentiments, we find that both Democrats and Republicans tend to employ angry rhetoric more than any other positively or negatively valenced emotions. However, the emotions used by the parties differ depending on the substantive issues they are discussing. For example, Democrats were more fearful in their tweets about guns and the economy, more disgusted when discussing Trump and the state of social security, and more angry about the economy and healthcare than their Republican counterparts. Republicans, on the other hand, were more sad than Democrats when discussing guns and social security, angry in their communications about taxes and working people, and enthusiastic when discussing the military. Importantly, we find that Democrats—the party out of power in our data—are more negative in their messaging than Republicans, the party in power.

These findings have a number of implications for the issue ownership literature. First, they showcase a conflict between bottom-up perceptions of issue ownership, which fuel assumptions about elite behavior, and actual estimates of elite rhetorical style. Even though the public perceives some issues to be “owned” by one party more so than the other, this ownership does not appear to be the product of mere emphasis on political issues in top-down campaign communication. Simply put, both candidates from both U.S. parties frequently discuss the relatively small number of issues that typically animate campaigns. Ownership may be more a product of emotion—*how* candidates speak about political issues—than emphasis. While rhetorical “style,” very generally, has received increasing attention in the issue ownership literature, our results suggest it is more of a central issue than a peripheral one, and one that can be systematically estimated and assessed vis-à-vis increasingly accessible tools web scraping and content analysis tools. Finally, as a more general implication of our findings, we suspect the differential role of emotions in communicating about substantive political issues, especially in the many cases where Republicans and Democrats employ

emotions of opposite valence, is likely to contribute to mass polarization, which is primarily affective in nature (Iyengar et al. 2019).

## BACKGROUND

Issue ownership is typically defined as either the perceived *association* between particular issues and particular parties (Walgrave, Lefevere, and Tresch 2012), or, the classic conceptualization, perceived *competence* of one party when it comes to a particular issue (Petrocik 1996). How one comes to perceive either association or competence is unclear. As Therriault (2015) notes, perceived issue ownership could stem from “the parties’ reputations for competence, their histories of attention to issues, their policy positions, or something else” (p. 929). Teasing out which of these possibilities, among others, finds the most support has become a central concern in recent years and for good reason. To know how parties come to be linked to particular issues is to know how to manipulate the electoral environment in one’s favor.

The most fruitful investigations in this vein examine how political messaging of various types can promote issue ownership. Walgrave and colleagues (2009), for example, find that media exposure to party issue positions can have a significant impact on parties’ ability to claim ownership over new issues that are not already associated more so with one party than another. When it comes to preowned issues, ownership can only be swayed in instances of asymmetric exposure to party issue positions. Other scholarship, similarly based on exposure to party media appearances in an experimental framework, finds that media appearances are more useful for reinforcement of preowned issues than altering perceptions of issue ownership (Tresch, Lefevere, and Walgrave 2015).<sup>1</sup>

Interestingly, Seeberg 2020 argues that parties can counteract another party’s issue ownership. This is accomplished by portraying the opposition as having performed poorly on the issue and reframing the issue using a different context. This approach changes the basic nature of the issue in such a way that enables the issue to be seen as unowned or unsettled. These findings highlight the importance of the political campaign for establishing and shifting partisan issue ownership. It is precisely during political campaigns when parties are most likely to attempt to leverage issue ownership in their favor. The campaign is when the stakes are high. Yet, campaigns tend to focus on the relatively small number of issues that all parties must address, regardless of perceived ownership (Sides 2006). For example, the 2016 U.S. presidential election was focused largely on healthcare, immigration, terrorism, and foreign policy. These topics form a mixture of issues whose ownership is not exclusive to either the Democratic or Republican Party. Candidates from both parties had to address these issues in the debate stages, in advertising, and in other campaign communications.

When the issues are largely fixed, and only positions vary, such as in campaigns, strategies like reframing (Egan 2013; Holian 2004; Sides 2006) and attacking the other party’s performance (Kahn and Kenney 1999) are likely to be most effective at mobilizing one’s base and persuading the limited number of true Independents who are persuadable. Because issue ownership, and messaging that attempts to reinforce or alter it, is most consequential during campaigns, we focus our investigation on campaign messaging.

### It’s not just what you say ...

More than emphasis on a particular issue, or mere illumination of one’s position on an issue, recent work suggests that *how* the parties and their candidates communicate about issues is central to both the reinforcement and alteration of perceived issue ownership, in terms of both competence and association (Holian 2004). Along these lines, we propose an additional mechanism by which the parties may be capable of fostering issue ownership: emotion. The selective emphasis in party platforms, campaign speeches, floor speeches, and other communications on particular issues surely aids in associating certain parties with those issues. It also likely helps the message of the issue travel more widely.

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<sup>1</sup> Also see Stubager and Seeberg (2016).

However, emphasis is merely one component of elite communication capable of guiding perceptions of issue ownership (Tresch, Lefevre, and Walgrave 2015; Walgrave, Lefevre, and Nuytemans 2009). Indeed, the very elite messages at the center of studies of issue ownership are at the center of investigations into the impact of emotional cues (Brader, Valentino, and Suhay 2008), polarizing cues (Nicholson 2012), and general style (Savoy 2018). Elites, by virtue of both being human and strategic actors, embed emotional cues in their speeches and other pleas to constituents. There is almost no effective communication without sentiment of some sort.

Emotion underlies messaging. Democrats mobilize their base not by merely stating their stance on healthcare policy, but by demonstrating how upset they are about the state of healthcare in the United States and the treatment of the subject by their opponents. Republicans behave similarly when it comes to issues like welfare, the deficit, and immigration. More than merely engaging in positively or negatively valenced emotionalism in their messaging, engagement with discrete emotions may be important. Indeed, previous work finds that particular emotions have different effects on information processing, political behaviors, and political attitudes (e.g., Marcus and MacKuen 1993; Marcus, Neuman, and MacKuen 2000). In his investigation of the role of emotional cues in political advertisements, Brader (2005) finds that cueing enthusiasm increases interest in politics and motivates participation, while fear increases support for fear-mongering candidates and promotes information seeking. Valentino et. al. (2011) similarly examine the effect of emotional cues on campaign participation, finding that anger mobilizes individuals to vote and participate in other campaign activities. Thus, some understanding of the discrete emotions that political elites employ in political messaging is an important, albeit missing, component of our understanding of the parties' ability to foster issue ownership about issues, specifically, and elite communications more generally (e.g., Nai 2021; Ridout and Searles 2011), although some work has focused on this in the context of campaign ads, specifically. It is how they *actually* make the appeal, not merely how certain appeals might impact voters if they are employed.

## HYPOTHESES

Contrary to some previous work that views issue ownership as driven by an asymmetric emphasis of party elites on particular issues, we expect to observe little by way of partisan differences in issue emphasis. This is because campaigns tend to focus on the relatively small number of issues that all parties must address (Sides 2006)—it is impossible for one party to avoid talk of the economy, for example, even if the other party is typically more closely associated with economic issues.

H<sub>1</sub>: Issue emphasis will covary inconsistently with the partisanship of candidates.

Instead, we expect to find that campaign communications about political issues vary more by their delivery, or their “style,” than their relative emphasis. This comports with campaign literature showcasing the attempts—and occasional success—of parties at strategically (re)framing how political issues are discussed (e.g., Egan 2013; Holian 2004; Sides 2006). Moreover, recent work on populist communication styles finds that politicians tend to engage in emotionalism on social media (our focus) (Ernst et al. 2019).

H<sub>2</sub>: The sentiment with which issues are communicated will systematically relate to issue emphasis to a greater extent than candidate partisanship.

We similarly expect to observe a divergence in the emotions that party candidates use in speaking about issues. Since major party candidates cannot simply ignore major issues, they must speak about the issues in different ways. They must take different positions on the issues and convey those positions in new ways in order to differentiate themselves from one another. Although we do not examine issue positions, we do investigate whether the emotional language used to discuss political issues varies by party.

H<sub>3</sub>: We will observe significant interactions between candidate partisanship and both negative and positive sentiment.

Finally, we expect candidates associated with the party out of power—Democrats, in this case—to exhibit negative emotions (e.g., anger, fear, and disgust) in their discussion of political issues to a greater degree than candidates representing the party in power. There are several reasons to expect this. First, out-parties tend to attack the in-party's performance as part of the regular procession of campaigns (Kahn and Kenney 1999). "Attacks" are largely couched in more negative sentiments, especially where there is a polarized electorate. Second, recent work finds that populist styles—which have become increasingly prevalent in the United States—tend to be conveyed using negative emotions (Ernst et al. 2019). While we do not examine populist content, specifically, there are similarities between populist narratives and out-party competition against a ruling party in polarized campaigns.

H<sub>4</sub>: Out-party candidates are more likely to exhibit negative emotions—anger, fear, and disgust—in their discussion of issues during the campaign than the party in power.

## DATA AND ANALYTICAL STRATEGY

Before data collection, we set parameters on the universe of elite communications we intended to capture and explain. Recent years have seen a marked increase in the proportion of elected representatives on social media platforms such as Facebook and Twitter (Peterson 2012; Straus et al. 2013). Given that elites were already predisposed to communicate via soundbites in traditional media (Bennett 2016; Graber 1976), social media platforms are natural, attractive alternatives to such venues. Moreover, both Democrats and Republicans tend to devote most of their tweets to campaign messages and to a more limited extent, personal information (Evans, Cordova, and Sipole 2014). Because Facebook data cannot be easily captured for analysis, we focus on elite Twitter communication.

Rather than collect elite social media communications within an arbitrary time frame, we center our efforts around a major "focusing event." Such a strategy allows us to more completely define the sampling frame, avoid arbitrary cutoffs, and make more specific substantive inferences about the nature of elite communication in a particular, presumably normatively important, context. Because of the salient nature of elections to political communication and public opinion, and our relative lack of understanding of elite communication on social media platforms, we opted to collect Twitter data from all candidates running for office in a 2018 U.S. midterm general election.

Using software that interacts with Twitter's application programming interface (API), we scraped all tweets from major party U.S. congressional candidates who had active campaign Twitter accounts with an associated Twitter user identification number for the 2018 midterm elections from the end of their respective primaries until the general election. We collected data only from their campaign accounts, not incumbent official government accounts. Eight hundred thirty-three candidates fit these criteria, though some of these candidates did not tweet from their official accounts in the time period we specified. Removing inactive candidates results in a data set containing 267,538 tweets from 767 different candidates for seats in both the U.S. House and Senate. We then merged these data with information about candidate and district characteristics, including the candidate's party, race, and gender, as well as vote share (a proxy for competitiveness), campaign spending, and incumbency status.<sup>2</sup> This makes for a rich data set that captures variance across a host of campaign characteristics and units of analysis.

Our analyses require estimates of both substantive content regarding political issues and policies and the emotional sentiments used to contextualize and deliver that content. Substantive content can be measured at least two ways. The easiest entails constructing a dictionary of words that are indicative of various

<sup>2</sup> District characteristics, including the candidate's party, race, and gender, as well as vote share (a proxy for competitiveness) came from various sources including the Federal Election Commission, Project Vote Smart, candidate webpages, and general Internet searches.

political issues and policies, and then counting how many times those words appear across tweets (subsetting by parties, challenger status, and any other moderators of interest) (Gainous and Wagner 2014). Indeed, this is how we begin our investigation below. We constructed this dictionary in multiple stages. The first version of the dictionary consisted of the ideological terminology identified by Grossmann and Hopkins (2016) in their investigation of party asymmetries in the use of ideological and group-based language. Next, we examined the 2016 Democratic and Republican Party platforms, further integrating new words that were either explicitly ideological, such as “fairness,” “equity,” and “entrepreneurship,” or that were explicitly indicative of specific political issues and policies, such as “DACA” (Deferred Action for Childhood Arrivals), “agriculture,” and “bankruptcy.” The full list of policy and ideological terms appears in the [Supplemental Appendix](#).

The second way we can estimate the nature and breadth of particular substantive content—which is built on the former, coarser procedure—is through latent variable modeling methods, such as latent topic models (Ostrowski 2015). Similar to factor analysis or latent class analysis, this general family of procedures models observed words as a function of a much smaller number of latent topics. For instance, the words “health,” “preexisting,” and “Obamacare” are all obviously related to healthcare. Rather than model the frequency of particular words, it makes better theoretical and empirical sense to model the general topics for which those words relate since those are the constructs in which we have the most interest.

When it comes to estimating the emotions in which substantive content is couched, we turn to a family of automated text analysis procedures broadly referred to as “sentiment analysis.” Sentiment analysis works by quantifying sentimental valence (i.e., negative, positive) and discrete emotions (e.g., anger, fear, joy) in textual material using predetermined dictionaries of words which are indicative of such sentiments.<sup>3</sup> In the most basic sense, this procedure searches for words belonging to certain categories of emotion and then produces frequencies of such categories across a corpus of text (tweets, in our case). This is very similar to how we initially gauge issue content, except that others have already developed and validated extensive sentiment dictionaries for a review see (Bravo-Marquez, Mendoza, and Poblete 2014). We rely, here, on two of the most frequently employed dictionaries: the Afinn Lexicon (Afinn) and the NRC Word-Emotion Association Lexicon (NRC). The Afinn dictionary includes 2475 words, each of which is measured on an ordinal scale that gauges the extent of positive and negative sentiment. Similarly, the NRC dictionary is comprised of 13,900 words that are categorically classified according to which discrete sentiment they best represent. This dictionary aids us in determining which discrete emotions are most frequently at play in campaign communications. The precise content of these dictionaries can be examined using the R `tidytext` package.<sup>4</sup>

## EMPIRICAL RESULTS

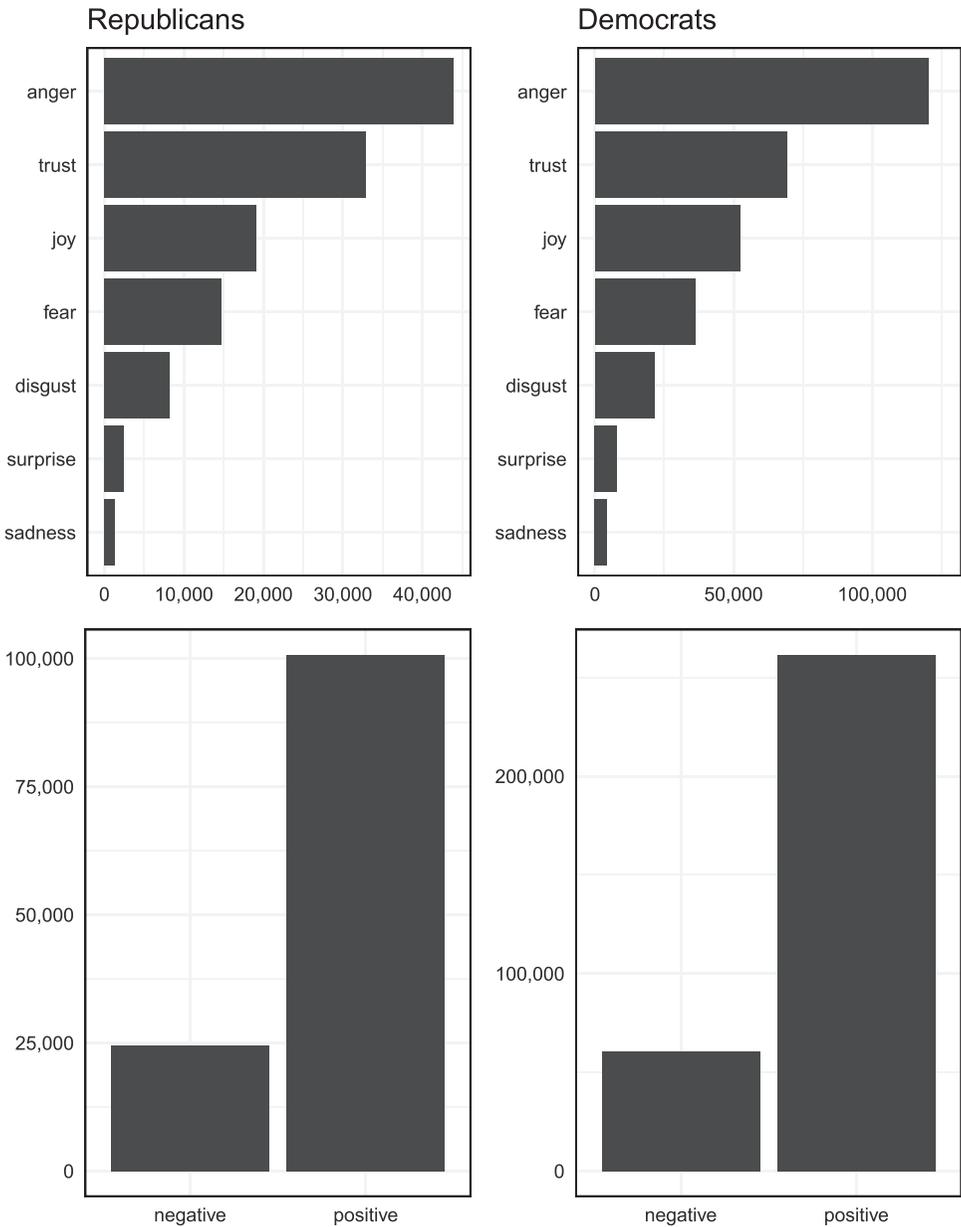
We begin our analysis by examining the distribution of the various types of sentiment captured using the NRC lexicon. Sentiment is considered in both a discrete fashion, by particular emotions (anger, anticipation, disgust, fear, joy, sadness, surprise, and trust), as well as in a directional fashion, by sentimental valence (positive or negative). For example, words such as “impurity” and “burnt” are indicative of disgust, just as words such as “fortune” and “embrace” are indicative of joy.<sup>5</sup> Relative frequencies of the most frequently observed discrete sentiments, by candidate party, appear in Figure 1.

The emotion most frequently conveyed by both Democrats and Republicans is anger. Interestingly, words falling in the trust and joy categories are the next most common for both parties. That said, it is

<sup>3</sup> In the sentiment analysis literature, sentiment is used when speaking of emotional valence (i.e., positive, negative) and emotion is used when discrete emotions are connected to words (e.g., anger, joy).

<sup>4</sup> <https://cran.r-project.org/web/packages/tidytext/index.html>

<sup>5</sup> We conceptualize “joy” and “surprise” as observable linguistic consequences of enthusiasm—the positive emotion considered most frequently in political science research (e.g., Brader 2005; Marcus and MacKuen 1993; Valentino et al. 2011). Enthusiasm can also be subdivided into “hope” and “pride,” though those emotions do not cleanly manifest in language in readily decipherable ways.



**FIGURE 1** NRC sentiment distribution, by discrete emotions (top panel) and sentimental valence (lower panel), Democratic and Republican candidate tweets

clear that Republicans are considerably more likely to express trust than Democrats, at least proportionally. Importantly, these emotions are positive, whereas the less frequently emphasized emotions—excepting anger—are negative (fear, disgust, and sadness, in order from most to least frequent). The relative expression of positive and negative sentiment, by partisanship, appears in Figure 1. Positive sentiment outweighs negative sentiment by more than threefold. This runs counter to popular stereotypes of politicians’ negativity, and the polarization it foments. Figure 1 also shows that Democrats and Republicans behave in nearly identical ways in terms of the emotions they convey in campaign communications.

**TABLE 1** Top 10 stemmed sentiment-based and issue words by party

Negative sentiment				Positive sentiment				Issue words			
Democrats	<i>n</i>	Republicans	<i>n</i>	Democrats	<i>n</i>	Republicans	<i>n</i>	Democrats	<i>n</i>	Republicans	<i>n</i>
Fight	8229	Fight	2118	Support	12,894	Support	6936	Commun	6204	Tax	2990
Stop	4151	Stop	2014	Join	8539	Join	2801	Health	5137	Job	2768
Gun	2750	Cut	1126	Protect	6326	Live	2199	Healthcare	4169	Nation	2109
Cut	2746	Hard	1039	Care	5944	Honor	2132	Job	3959	Commun	2072
Pay	2727	Illeg	806	Live	5507	Endors	2037	Polit	3762	Busi	1872
Hard	2720	Question	770	Proud	5409	Proud	1698	Nation	3754	Veteran	1686
Question	2074	Pay	736	Win	4086	Protect	1628	Tax	3752	Polit	1577
Violenc	1989	Attack	696	Honor	3970	Win	1495	School	3290	Law	1490
Attack	1802	Ill	569	Endors	3913	Care	1249	Public	3257	Economi	1486
Fire	1779	Fire	531	Love	3621	Secur	1225	Secur	3072	Govern	1314

*Note.* The unit of analysis is the word.

In order to provide a more nuanced view of both sentiment and substantive topics conveyed across election tweets, we list the top 10 words from the Afinn lexicon and issue dictionary employed by candidates, subset by candidate partisanship, in Table 1. Perhaps the clearest initial observation that can be made from the word counts presented in Table 1 is that there is a great deal of similarity in word usage across parties, at least when it comes to sentiment. Candidates from both parties are seeking the “support” of would-be constituents, asking citizens to “join” them in “protecting” the country by “fighting” to “stop” the other side. Congressional candidates are squarely bipartisan in the platitudes they use to deliver their appeals. Among the top 10 negative words, 7 of the words are the same for Democrats and Republicans, albeit in different orders of frequency. When it comes to positive sentiment, 9 of the 10 words overlap. Where differences are observed, they mostly regard words that are also political in nature. For instance, two of the most frequently employed negative words among Democrats—that are not employed much by Republicans—are “gun” and “violence” (stemmed). On the Republican side, “illegal” (stemmed) is frequently employed, most likely in reference to illegal immigration. There is only one nonsubstantive difference worth noting: the tenth most frequently used positive sentiment word for Democrats is “love” and “security” for Republicans. This could reflect differing value priorities, as previous research suggests (Jacoby 2014). Thus far, then, we do not observe much partisan asymmetry in the words used to convey positive/negative emotions.

We do observe some partisan differences in the substantive words that candidates employed, which suggests the possibility of communicative differences across those issues most associated with each of the parties. Of course, candidates from both parties frequently talk about “jobs” and “taxes,” and invoke “politics,” more generally. But, as we might expect from the issue ownership literature (e.g., Petrocik 1996), the parties somewhat diverge from there. For instance, Democrats frequently invoke “community,” “health/healthcare,” and “school,” whereas Republicans frequently speak of “business,” “veterans,” the “law,” and “economics.” Altogether, 5 of the 10 top issue-related words used by candidates in tweets are shared by both parties. Considering that we are only presenting the top 10 words in this initial, descriptive examination of the data, we possess mixed evidence that the parties actually emphasize different issues in general elections.

Proportionally, about 7 percent of the tweets we examined contain issue words. As for the relative distribution of sentiment, we calculated the percentage of tweets containing words representing each discrete emotion (NRC). The results indicate that about 4 percent of tweets have anger words; the same is true for

**TABLE 2** Bivariate relationship between frequency of use of Top 10 issue words by party

Democrats top 10	<i>r</i>	Republicans top 10	<i>r</i>
Commun	0.15*	Tax	-0.18*
Health	-0.10*	Job	0.02
Healthcare	-0.07	Nation	0.13*
Job	-0.05	Commun	0.09
Polit	-0.08	Busi	0.13
Nation	-0.22*	Veteran	0.10
Tax	-0.25*	Polit	-0.12*
School	-0.03	Law	-0.18
Public	-0.14*	Economi	0.02
Secur	-0.19*	Govern	-0.01

*Note:* The unit of analysis is the candidate. \* $p \leq 0.05$ .

trust words.<sup>6</sup> Furthermore, about 3 percent of the tweets contain joy words, 2 percent have fear words, both disgust and surprise words show up in about 1 percent of total tweets, and, finally, less than 1 percent include sadness words. We performed these same calculations across party and there were no major differences to speak of; no more than 1 percentage point separated Democrats and Republicans on any of the discrete emotions.

Before moving to a more nuanced look at potential partisan asymmetries in the use of emotional language to frame issue messaging in tweets, we examine the correlation between the Afinn ordinal scale that measures the relative positive/negative valence of the message and candidates' propensity to use each of the top 10 words from Table 1. We consider Democrats and Republicans, and the issue words they are most likely to use, separately. Positive correlations indicate that partisans are generally positive when they speak about the issue in question; negative correlations indicate that they are generally negative. The patterns we observe in Table 2 make substantive sense. For example, when Democrats talk about health in the context of the 2018 campaign they tend to be negative—criticizing Republicans for attempting to dissolve Obamacare was a common tactic. For similar reasons, when Republicans talk about taxes they tend to be negative—a common Republican talking point on the campaign trail centers on Democrats' frivolous spending and desire to raise taxes.

Importantly, these patterns provide suggestive evidence for  $H_3$  and  $H_4$ . Especially for Democrats (the out-party), we observe significant correlations between issue emphasis and sentiment in 6 of the top 10 issue words ( $H_3$ ). Moreover, we find that Democrats are significantly more negative than positive in their discussion of 5 of the topics, whereas Republicans are more negative than positive on only 2 ( $H_4$ ). This suggests that, in the age of polarization, it might be more common to criticize one's political opponents on issues—including those that one's base tends to care about and support—rather than merely strike a positive chord about one's own track record on those issues. In other words, negativity about the out-party is more common than positivity about the in-party—a dynamic that unfolds at the individual level in the form of negativity bias and negative partisanship (e.g., Abramowitz and Webster 2016).

<sup>6</sup> The raw numbers reported in Figure 1 show that there are more anger words than trust words—this is true because the unit of analysis is tweets instead of words. More tweets contain multiple anger words than contain multiple trust words.

## Party asymmetries in issue emphasis and emotions

Thus far, we have provided a description of our data set and found evidence that the parties are quite similar in both the issues they emphasize and the emotions they use to convey their positions about those issues. The next step of our analysis—which reaches beyond previous investigations of elite social media communications—is to combine sentiment and substance. In particular, we examine whether Democrats and Republicans systematically deliver their messages using different emotions. These analyses test our theory that perceived issue ownership is driven by more than the parties' relative emphasis on issues, and, especially, by the way that the parties communicate about these issues using emotion. We are testing two hypotheses. First, that issue emphasis covaries only weakly with partisanship ( $H_1$ ). Second, that the sentiment with which issues are communicated are more systematically related to issue emphasis than mere partisanship ( $H_2$ ).

Based on the observations in previous sections, we expect that much of the content communicated by candidates can be distilled down to a relatively small number of substantive topics along which sentiment and partisan emphasis—when considered jointly—may vary. To investigate this possibility, we turn to latent variable models capable of capturing topical structure across observed words. More specifically, we use latent Dirichlet allocation, a method of latent topic analysis, to identify sets of words that characterize different “topics” within the corpus of candidate tweets.<sup>7</sup> Latent topics from a topic analysis are akin, in analytical spirit, to latent dimensions from a factor analysis or principal components analysis. Just as we expect a small number of latent dimensions—systematic sources of variance—to underwrite a set of survey responses about a particular issue, we expect that a relatively small number of general topics explains the substantive content appearing within and across tweets. Capturing the general substantive topics that candidates discuss—that is, the issue domains at the center of theories of issue ownership—allows us to employ more of our data than word-level analyses and in a more parsimonious way.

We relegate the details of this component of our analysis to the [Supplemental Appendix](#). Most importantly, we found that 17 topics characterized the brunt of tweets we examined: “Taxes,” “Campaigns,” “Economy,” “Healthcare,” “Voting,” “Courts,” “Education,” “Corporate (America),” “Working People,” “Guns,” “Endorsements,” “Elections,” “Trump,” “Military,” “Social Security,” “Social/Climate” (which pertains to social issues and climate change), and “Pre-Existing” (which refers to preexisting medical conditions, specifically). That these particular topics emerged makes sense, both intuitively, with the 2018 midterm election in hindsight, and given the coarser word-level analyses presented above. In addition to the obvious issue domains discussed by the issue ownership literature, as well as campaign and voting-related topics, Trump, endorsements, climate change, and preexisting conditions, are all new or context-specific issues that were focal points of the 2018 election cycle. For example, Democrats were campaigning against Trump, and many Republicans were aligning themselves with him. That preexisting medical conditions emerged as a topic distinct from the more general healthcare domain also makes sense given the strong emphasis of Democrats on the negative consequences of the dismantling of the Affordable Care Act for those with preexisting conditions (Pear 2019). Even though we may expect little interparty variance in the relative attention or emotional delivery of certain topics (e.g., campaigns, voting), most of the other topics correspond to issue domains identified to be associated more with one party than the other (e.g., healthcare, guns).

In order to examine variation in the discussion of topics across tweets by emotional delivery and partisanship, we regress the proportion of the total words represented by each respective topic on the proportion of total words represented by each discrete sentiment in the NRC dictionary discussed above as well as a dummy variable for (Republican) partisanship. Positive coefficients denote a positive association between each of the sentiments and discussion of the dependent variable topic, and a predisposition for Republicans to discuss that topic more than Democrats. We also control for vote share, incumbency, chamber, spending, candidate race, and candidate gender. Coefficients associated with the discrete sentiments and candidate partisanship appear in Table 3.<sup>8</sup>

<sup>7</sup> See documentation on the `textminer` package for full details on the package we use to conduct the analysis, and topic modeling more generally.

**TABLE 3** Modeling latent topics as a function of discrete emotions and party

	Latent topics								
	Taxes	Campaigns	Economy	Healthcare	Voting	Courts	Education	Corporate	Working people
Anger	0.27*	-0.31*	-0.19*	-0.21*	-0.02	0.49*	-0.29*	0.22*	-0.11*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)
Disgust	-0.12*	-0.03	0.21*	0.07	-0.13*	-0.14*	-0.07*	0.10*	0.23*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)
Fear	-0.06	-0.19*	-0.02	0.04	-0.10*	-0.04	-0.09*	-0.21*	-0.18*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)
Sadness	0.02	-0.06	0.04	0.01	-0.12*	-0.06	-0.08*	0.08*	-0.06
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)
Surprise	0.01	-0.01	0.00	-0.05	0.09*	0.08*	-0.10*	0.13*	-0.05
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)
Trust	0.04	0.03	-0.16*	-0.17*	-0.04	0.07*	-0.03	0.09*	-0.09*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Joy	-0.20*	-0.01	-0.00	-0.08*	-0.15*	-0.11*	0.17*	-0.23*	0.06*
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.03)
Rep	0.06	-0.20*	0.42*	-0.36*	-0.23*	-0.16*	-0.12	0.13	0.04
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.07)	(0.08)	(0.08)	(0.08)
$R^2$	0.13	0.17	0.15	0.13	0.15	0.33	0.18	0.19	0.14

$n = 698$

	Latent topics								
	Guns	Endorsements	Elections	Trump	Military	Social security	Social issues/ Climate	Preexisting conditions	
Anger	-0.15*	-0.10*	-0.20*	0.29*	-0.10*	0.14*	0.13*	0.19*	
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	
Disgust	0.06	-0.09*	0.04	0.05	-0.14*	0.19*	0.14*	-0.06	
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	
Fear	0.08*	-0.21*	0.12*	-0.05	0.10*	-0.07	0.33*	-0.12*	
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	
Sadness	0.13*	-0.09*	-0.05	-0.01	0.01	0.04	0.01	0.18*	
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	
Surprise	-0.01	-0.13*	0.08	0.00	-0.02	-0.01	0.04	0.05	
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	
Trust	-0.08	0.02	0.02	0.00	0.03	0.02	-0.10*	-0.05	
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	
Joy	-0.01	0.12*	-0.01	-0.10*	0.05	0.01	0.05	-0.18*	
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	
Rep	0.02	-0.03	0.36*	0.26*	0.31*	-0.06	-0.01	-0.01	
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	
$R^2$	0.08	0.13	0.12	0.13	0.09	0.09	0.24	0.15	

$n = 698$

Note: The unit of analysis is the candidate. Standardized OLS coefficients, standard errors in parentheses,  $*p \leq 0.05$ .  $n = 693$ .

We begin by considering partisan asymmetries across topics. The additive effect of partisanship is significant with respect to only 8 of 17 topics, controlling for other factors. In other words, evidence that Democrats actually speak about some issues more than Republicans (and vice versa)—an implication of at least perceived issue ownership<sup>9</sup>—is quite limited, per our hypothesis. Republicans are more likely than Democrats to talk about the economy and the military, as well as other issues where issue ownership is less relevant, such as elections and Trump. Democrats are more likely than Republicans to talk about health-care, an issue they are perceived to own (e.g., Petrocik 1996). However, Democratic attention to campaigns, voting, and the courts are seemingly context specific, and the former two hardly count as “issues.” Of the 12 issues where we would expect some partisan differences—that is, evidence of ownership—such differences were observed with respect to only three issue topics: economy, healthcare, and military. Of course, this means neither that parties do not own issues, nor that voters do not perceive the parties to own issues (the evidence on which many issue ownership claims rest). These patterns do, however, suggest that simply measuring the attention that candidates give to issues in their communication may fall short of a complete understanding of *why* the masses differentially connect particular issues to the parties.

Instead of asymmetric partisan attention, we expect emotional delivery to more strongly relate to issue emphasis. And, indeed, we find a great deal of evidence for the systematic association between discrete sentiments and issue communication. Beginning with negative emotions, the effect of anger is statistically significant in 16 of the 17 models, albeit in different directions. For example, there is a positive and significant relationship between candidates’ use of anger and their propensity to discuss issues related to taxes, the courts, corporate America, Trump, social security, climate change and other social issues, and preexisting conditions. On the other hand, there is a negative average relationship between candidate use of angry language and communication about campaigns, the economy, healthcare, education, working people, guns, endorsements, elections, and the military—topics about which candidates tend to be positive about, or ignore (e.g., even though the Democratic Party does not make the military a focal element of their platform, candidates discuss this issue in a positive light due to the general positive valence of the issue). We also observe that both disgust and fear language are significantly related to issue emphasis across 11 of 17 topics, and sadness is significantly related to six topics. That makes a total of 19 positive and significant relationships between the use of negative emotional language and these topics and 24 significant negative relationships.

There are many fewer significant relationships between the use of positive sentiments and the propensity to tweet about these topics. Indeed, there are only 8 significant positive relationships between topics across all 3 positive emotions, and 13 significant negative relationships. Surprise is positively related to the propensity to discuss voting, courts, and corporate America. Trust is positively related to discussing the courts and corporate America. Finally, joy is positively related to education, working people, and endorsements. Surprise is negatively related to discussing education and endorsements; trust is negatively related to discussing the economy, healthcare, working people, and social/climate issues—all issues that Democrats were negative about in 2018. The higher count of negative relationships between issue discussion and sentiment, relative to positive relationships, is driven by joy. Candidates who express joy to a high degree in their tweets are less likely to talk about taxes, healthcare, voting, the courts, corporate America, Trump, and preexisting conditions.

These analyses show that sentiment varies more along issue topics than does relative issue emphasis by party candidates, as we hypothesized ( $H_1, H_2$ ). Despite previous evidence for particular associations between parties and issues, it appears that partisans devote about the same amount of time to the discussion of a relatively small set of issues that have come define contemporary American electoral politics.

<sup>8</sup> Full results with estimates for control variables appear in the [Supplemental Appendix](#). The total number of cases drop from 767 in the prior candidate level analyses to 698 only because some were not included in the random sample of 2380 from the larger corpus.

<sup>9</sup> It is unclear what competence-based issue ownership would predict, which we view as a limitation of “bottom-up” analyses of issue ownership based on public opinion data alone.

Finally, we note that campaign, district, and candidate characteristics for which we control, but only present in the [Supplemental Appendix](#), do not relate to candidate communication nearly as strongly or systematically as partisanship and sentiment. Across the 102 coefficients associated with two-party vote share, incumbent status, chamber, campaign spending, candidate race, and candidate gender across 17 models, only 23 were statistically significant and none of the 6 predictors had statistically significant coefficients across a majority of the models.

## Combining emphasis and emotion: A new look at ownership

Our final set of analyses examines the propensity for Democratic and Republican candidates to differentially employ discrete emotions in their discussion of the 17 political topics. Interactions between partisanship and each sentiment can be used to model such a possibility. Because this analysis involves 117 distinct interaction terms, we cannot provide a hypothesis about each conditional relationship. Instead, our two final hypotheses regard broad trends in the results. First, we hypothesize that we will observe significant interactions between candidate partisanship and discrete sentiments for a majority of issues ( $H_3$ ). We consider the evidence in two parts, taking the positively and negatively valenced sentiments in groups. Second, we hypothesize that the party out of power, Democrats, will exhibit more negative emotions than the party in power, Republicans ( $H_4$ ).

To test these hypotheses, we reestimate each of the models in [Table 3](#), adding interactions between partisanship and each emotion. Because each interactive model contains 21 independent variables of sorts (i.e., including the interaction terms), we provide a summary of results pertaining to the interactive terms in [Table 4](#).<sup>10</sup> This table contains the estimated ordinary least squares (OLS) coefficient for the relationship between each emotion and each issue for Democrats and Republicans. We only present coefficients that are statistically significant at the  $p \leq 0.05$  level.

First, we note that every model (topic) has at least one significant interaction, and most have several; there are up to five significant interactions associated with a single topic. Interpreting results from the perspective of the discrete emotions, the application of each emotion varies by candidate partisanship in at least some instances, and fairly common when it comes to anger, disgust, fear, and joy (each of which have six to seven significant interactions with partisanship). It is fairly apparent, then, that Democrats and Republicans use various positive and negative sentiments *in different ways* when communicating about political issues on Twitter.

Second, we observe that Democrats are more negative than Republicans in 15 cases out of 23 significant interactions with anger, disgust, fear, or sadness.<sup>11</sup> Topics include the economy (anger, disgust), healthcare (anger), courts (fear), elections (anger), campaigns (disgust), working people (disgust), guns (disgust, fear), Trump (disgust, sadness), the military (disgust), social security (disgust), and preexisting medical conditions (sadness). The most and largest differences tend to involve the emotion of disgust. Political scientists have only begun to examine how disgust operates in politics, considering moral variants of disgust (e.g., [Horberg et al. 2009](#)) and methods by which physical disgust is translated into political evaluations (e.g., [Aarøe, Petersen, and Arceneaux 2017](#); [Kam and Estes 2016](#)). Our results suggest that political disgust may be a top-down phenomenon, driven by elite communication.

This particular element of observed partisan asymmetries—the general negativity of Democrats—may be a function of an electoral environment where Republicans were defending unified party government, and Democrats were desperately trying to mobilize (would-be) constituents in an effort to regain congressional power. But, campaigns are precisely where most relevant political communication from parties and candidates (tautologically) occurs. If the out-party's modus operandi is to express anger about the treatment of their issues by the in-party, and the in-party's proclivity is to express positive sentiments about the

<sup>10</sup> Full model results are in the [Supplemental Appendix](#).

<sup>11</sup> These come in the form either greater positive coefficients or smaller (in absolute value) negative coefficients.

**TABLE 4** Relationship between discrete emotions and latent topics across party

	Discrete emotions														
	Anger		Disgust		Fear		Sadness		Surprise		Trust		Joy		
	D	R	D	R	D	R	D	R	D	R	D	R	D	R	
Taxes	0.20	0.37												-0.28	-0.05
Campaigns			0.13	-0.10	-0.32	-0.09			0.19	-0.09	0.18	-0.18	0.04	-0.16	
Economy	-0.07	-0.35	0.40	0.14	0.11	-0.05									
Healthcare	-0.10	-0.34													
Voting					-0.28	-0.05								-0.25	-0.04
Courts					0.11	-0.14					-0.02	0.21			
Education														0.26	-0.01
Corporations									0.24	0.06					
Working people	-0.18	-0.01	0.39	0.14					0.09	-0.14					
Guns			0.33	-0.08	0.27	0.01	-0.01	0.15							
Endorsements	-0.18	0.00			-0.37	-0.09								0.17	0.01
Elections	-0.08	-0.29												-0.09	0.13
Trump			0.16	-0.02			0.11	-0.06							
Military			-0.07	-0.19					-0.21	0.10				-0.03	0.19
Social security			0.53	0.03			-0.17	0.10							
Social/Climate									0.13	-0.02					
Preexisting							0.22	-0.06	0.03	-0.14					

*Note.* The unit of analysis is the candidate. Standardized OLS estimates. Only those where  $*p \leq 0.05$  for the interaction between emotion and party are shown.

D = Democrat, R = Republican. See [Supplemental Appendix](#) for full model results.

job they have done across the board, then emotional delivery of campaign communications appears to be more important in distinguishing the parties than relative issue emphasis. Altogether, these findings provide nuance to our understanding of how issues may come to be connected to particular parties vis-à-vis party actions (i.e., communications) and demonstrate that variation in communication patterns are a joint production of substance and delivery.

## CONCLUSION

Despite public perceptions of asymmetric issue association and competence, and experimental evidence revealing the effectiveness of selective issue emphasis on the part of elites, we find little evidence that partisan elites spend their time discussing different political issues. For the most part, Democratic and Republican candidates discussed similar substantive issues, at similar rates, irrespective of gender, race, incumbency status, or competitiveness of their race. What does appear to distinguish Democratic and Republican campaign communications is the *emotional delivery* of issue content. While political candidates from both parties tended to communicate about voting, campaigns, and working people in positive ways, and taxes using negative emotions, other issue communications were asymmetrically couched in positive or negative sentiment.

That Republicans and Democrats employ emotions of opposite valence in many of the cases where we would expect firm perceptions of issue ownership also has implications for mass polarization. If mass issue ownership perception is based as much on delivery as emphasis (or even more so), interparty divergence

in the emotional appeals at the heart of such delivery is likely to excite affective polarization—the growing division between Democrats and Republicans in their emotional reactions to the out-group. Perhaps, then, the act of “owning” the opposition is more important than owning the issue being debated.

Of course, our study has limitations. Twitter is but one of many platforms by which political elites can communicate their policy stances and interact with constituents. Future research should not only consider other traditional and social media platforms but also how effective they are, relative to one another, in successfully communicating the candidate’s message. We also acknowledge that our study is limited to a single campaign cycle. There may be differences in communication patterns during campaigns, in general, and off-cycles. Our data are also limited to a single country, the United States. Testing our hypotheses in other electoral contexts will only strengthen our relatively weak understanding of the circumstances in which political parties engage in particular styles of communication. Finally, we note that the dictionary-based approach to studying sentiment that we employ is limited: context can differ for many words and not every word is included in the dictionaries. However, alternatives to the dictionary approach are limited, as well. One alternative is to use topic modeling to decipher sentiment, similar to the way we used in with respect to issues. However, this is not currently the norm in sentiment analysis and these strategies are still being developed. We encourage others to continue refining methods for automatically deciphering various elements of communicative style and look forward to contributing to the development of these methods in our own work.

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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