

Changing the Subject to Build an Audience: How Elected Officials Affect Constituent Communication

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Abstract

The constitution guarantees citizens the right to petition their elected officials and constituent communication is a central feature of many theories of representation. Yet, little is known about what constituents say and why they raise particular issues. Using an original data set of constituent communication, we show that even though much of constituents' communication to Congressional offices follows the ebbs and flows of trending national policy debates, members of Congress are able to affect the topics about which citizens write. We demonstrate representatives' ability to create an audience for particular topics using an extensive dataset of over 2.7 million public posts and comments made on elected officials' Facebook Pages. Using text as data methods and a research design to limit potential confounders, we show that some legislators appeal to citizens interested in local political issues and discourage those interested in nationally trending controversies, a result with important implications for political representation.

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The first amendment to the US constitution guarantees the right “to petition the Government for a redress of grievances”. The right to contact elected officials has evolved into a regularly used form of political participation: organized campaigns to write Congress are a prominent component of contemporary political activism. And it also constitutes a major component of contemporary political science theories of representation. Political scientists argue that constituent communication is a central feature of how representation occurs and use a variety of experimental designs to examine the determinants of legislators’ response to constituent communication (Mansbridge, 2003; Broockman, 2014).

In spite of the central place in representation as practiced and studied, political scientists know remarkably little about what constituents say to their elected officials and why they choose to discuss particular issues. This paper seeks to address the paucity of evidence by providing a novel systematic analysis of what the public says when they interact with elected officials. We show that when the public communicates with elected officials it tends to discuss salient political topics. And when discussing issues of national importance, we also find a surprising balance in the sentiment directed towards elected officials. In spite of the wide-ranging unpopularity of Congress, we find that the public often heaps praise on their elected officials, while also occasionally lobbing vitriolic attacks on legislators.

We demonstrate that, surprisingly, elected officials are more than just passive recipients of communication from constituents. Rather, elected officials shape who participates in the conversations—with elected officials able to exert a direct and measurable effect on the number of messages received, who sends those messages, and the content of constituents’ messages. We show that when elected officials comment on salient political debates they invite messages from the public that are qualitatively different than when elected officials broadcast work they have completed in their districts. Further, when elected officials make a statement on a particular topic they direct conversation towards that issue, causing a sharp increase in discussion around

that issue.

To examine the content of constituent communication we use a new data set of over 2.7 million public posts and comments made by constituents on Facebook Pages of elected officials, along with a corresponding collection of posts from elected officials. We show that the content of communication on Facebook is quite useful for studying how constituents communicate with elected officials generally. Contrasting survey data with information about who posts on elected officials' Facebook Pages, we show that the kinds of people who write to their elected officials on Facebook are similar in demographics and socioeconomic status to survey respondents who report contacting elected officials using more traditional means. Further, we show that the issues discussed with elected officials on Facebook track broad national debates, evidence that Facebook users are not merely communicating about niche topics distinct from the issues constituents are likely to raise with offices. Our study builds on recent analyses of other social media websites (Barbera et al., 2014), while facilitating a more direct analysis of how elected officials and the public communicate with each other.

Our evidence provides a new motivation for why elected officials facilitate constituent communication. Democratic theorists usually argue that constituent communication is a valuable tool for constituents to hold their elected officials accountable or worry about particular groups exercising a disproportionate influence on Congressional offices (Mansbridge, 2003; Kalla and Broockman, 2014). This concern is valid if legislators use communication to take a biased sample of opinion from their district. Yet, legislators might also be able to improve their standing with those who contact their office. For example, Grose, Malhotra and Van Houweling (2015) show that elected officials are able to effectively react to messages from constituents and improve support after constituents write letters to legislative offices. To this end, we show that constituent communication provides elected officials the opportunity to affect the kinds of messages their office receives and, potentially, the types of

responses legislators are able to articulate to constituents. Communication between elected officials and their constituents, then, is a valuable tool for elected officials to cultivate support from constituents and to create an audience around issues. Not only are elected officials motivated to prompt constituency service requests (Cain, Ferejohn and Fiorina, 1987), they are also motivated to prompt policy messages on electorally advantageous issues.

1 Why Representatives Can Influence the Volume and Content of Constituent Communication

Constituent communication—the act of citizens contacting their elected officials and the elected officials’ subsequent response—is an essential feature of political representation. Normative theories of representation argue that communication between elected officials and constituents constitutes a crucial connection (Rehfeld, 2009). Indeed, deliberative theories of representation argue that this communication is necessary for effective representation to occur (Gutmann and Thompson, 1996; Mansbridge, 2003). According to these theories, the views that constituents express to elected officials provide a critical conduit between citizens’ priorities and the actions of elected officials while in office (Mansbridge, 1999, 2003).

While scholars have studied many features of constituent communication, little is known about *what* constituents say to their elected officials. Instead, studies of constituent communication have provided insights into the causes and consequences of any contact with a representative’s office. For example, several studies examine how descriptive representation affects constituents’ propensity to contact legislative offices (For example, Gay 2002; Broockman 2014) or how individual citizens’ own resources affect their ability to contact elected officials (Verba, Schlozman and

Brady, 1995). Other studies examine when and how Congressional offices respond to messages constructed in an experimental setting (Butler, 2014), how constituents evaluate the content of responses from Congressional offices (Grose, Malhotra and Van Houweling, 2015), and how constituents respond after being experimentally invited to Congressional town halls (Minozzi et al., 2015).

Implicit in much of the literature on constituent communication and popular press discussion thereof is a standard model of constituent communication—a model that supposes elected officials are passive recipients of communication from constituents. Under this model of communication, constituents (or interest groups of citizens) initiate communication with elected officials, who decide how to respond to the messages they receive. For example, the civic voluntarism model supposes that citizens’ propensity to contact elected officials is a function of the citizens’ own socioeconomic resources, time constraints, and whether they had been asked to participate (Verba et al., 1995). The same basic assumption that constituents (or interest groups of constituents) initiate the communication process is implicit in a large experimental literature about legislator responsiveness to constituent service requests, where the type of message sent to an office is assumed to be typical across legislative offices and not a function of the diverse ways elected officials might represent their constituents (Butler and Broockman, 2011; Butler, 2014). Given the messages, elected officials are often assumed to use the information as a biased poll of their district, to decide on what to work on (Kalla and Broockman, 2014) or how to vote on particular bills (Bergan and Cole, 2015).

When the existing literature does provide a role for legislators to influence the audience for constituent communication, the influence is not based on attributes within the individual legislator’s discretion. For example, immutable characteristics can affect the kinds of people who contact a legislative office. Constituents who are represented descriptively are more likely to contact their elected officials, in part because descriptive representation boosts trust between constituents and legislators

(Gay, 2002; Mansbridge, 1999; Broockman, 2014). Another mechanism is that the increasingly complex and expansive role of government may encourage constituents to contact their elected officials (Cain, Ferejohn and Fiorina, 1987). While on the margin individual elected officials can do little to affect the kinds of problems their constituents will encounter as they navigate governmental bureaucracy, elected officials can advertise the availability of services. And other literatures suppose that presidents can increase the incidence of constituent communication to Congressional offices (Canes-Wrone, 2006), but that members of Congress are passive recipients of the messages their office receives.

Certainly citizens can and do contact elected officials without other encouragement. But building on the insights into constituent communication in prior work, we argue that representatives have both the incentive and capacity to exercise potentially subtle influence on the types of constituents who contact their office and the kinds of comments those constituents leave. Elected officials have incentive because engaging with constituents creates opportunities for elected officials to bolster their electoral support. When representatives interact with constituents in town halls they are able to affect the likelihood those constituents will vote for their elected official (Minozzi et al., 2015). Outside of town halls representatives can respond to constituents' letters to the office with explanations that create support among constituents (Grose, Malhotra and Van Houweling, 2015).

Elected officials have more than an incentive to just interact with constituents, they have an incentive to interact with constituents on a specific set of issues. This is because many representatives have issues on which they are better suited for cultivating their constituents' support. For example, elected officials tend to focus on issues that are important to their constituency to cultivate local support (Grimmer, Westwood and Messing, 2014) or will avoid issues that highlight disagreement with constituents (Grimmer, 2013). Other elected officials may want to establish a reputation as a leader in a policy area and interacting with concerned individuals on

those areas may help cultivate that reputation.

Elected officials also have the capacity to affect the agenda for their interactions with constituents. This is because representatives often go out of their way to structure how they communicate with constituents. For example, consider how members of Congress advertise their town halls. In a July 2009 press release, Jay Inslee (D-WA) announced that he was “hosting a telephone town hall meeting tonight so he can speak with his constituents about the health care reform bill” (Inslee, 2009). Similarly, Michelle Bachmann announced in a newsletter to constituents that she “will be hosting two forums on the cap and trade policies that have been introduced in the Obama budget proposal and in the U.S. Congress. Cap and trade, which would more appropriately be labeled an energy tax, makes energy producers pay to emit carbon emissions in hopes of reducing greenhouse gases” (Bachmann, 2009). This is indicative of how members of Congress announce their town halls. In a sample of press releases and newsletters, 66% of town hall announcements focused on a specific topic.¹ In other communication, representatives also solicit constituent opinion about specific topics. For example legislators will regularly ask constituents to express an opinion about a specific issue in a newsletter. Even outside of town halls and e-newsletters, legislators can craft a reputation as effective on particularly policy areas and this can lead to increased communication from citizens on that area (Grimmer, 2013).

The result of the explicit and implicit actions is that elected officials can exercise influence over who decides to make a contact, nudging constituents with a particular issue interest to contact the office. Rather than persuade the same individuals to comment about different issues, we argue that legislators cultivate an audience with constituents who view a particular set of issues as important. This is important for

¹To calculate this number we used a collection of House press releases and e-newsletters from House and Senate offices. We identified newsletters that used the phrases, **town hall**, **open house**, or **forum** at least once. We then coded the statements as about a town hall or not and if about a town hall about a specific topic or not. Our replication file includes all of our coding decisions and corresponding texts.

representatives, because it provides the elected officials the opportunity to increase the frequency their office interacts with constituents who are most likely to have a positive experience. They can encourage statements and inquiries from interest groups where the legislator is active or prompt the public to discuss issues where the elected official has an advantageous position. Elected officials can cultivate an audience with constituents who feel strongly about an issue or with constituents who are likely to agree with decisions the representative has recently made.

We are not arguing that legislators exercise complete control over the agenda in constituent communication or who contacts the office. Rather, we argue that, on the margin, representatives are able to exercise an effect on the kind of messages that are sent to the office. The result of this process, we argue, is that it creates conditions where elected officials are able to use constituent communication to bolster support among constituents.

2 Why Facebook Data Are Useful for Studying Political Communication

While a great deal of work has been allocated to studying the consequences of communication, little is actually known about what constituents say when they communicate with their representative and elected officials' role in shaping that communication. This is because of a lack of access to data and methodological struggles in analyzing those data. Little is known, in part, because elected officials are reluctant to release information about what constituents say to the office. Elected officials are reluctant because they both want to protect constituents who reveal potentially sensitive information when writing to their representative and to protect the elected officials themselves who are often reluctant to release information that shows their actions contradict the expressed opinion of their constituents. And even if scholars were able to gain access to the communication, the large number of

messages constituents send to their legislators poses a problem for standard modes of analyzing large collections of text.

To circumvent the obstacles that have limited the study of constituent communication, we analyze over 2.7 million public posts made to elected officials' Facebook Pages from May to August of 2015. This includes all the posts from House members, senators, governors, and a subset of large-city mayors, along with all subsequent comments made to the elected officials' Pages. The result is a collection of communication that captures the views that are expressed at elected officials. Our analysis offers a distinct contribution while complementing other analyses of social media. For example, [Barbera et al. \(2014\)](#) analyze what individuals *who follow* elected officials say on twitter, along with elected officials' statements. This analysis is important, but by design cannot provide insights into the information that elected officials receive from social media posts.²

Our analysis also builds on survey work on communication with Congressional offices ([Cain, Ferejohn and Fiorina, 1987](#); [Hickey, 2013](#)). Previous scholarship has examined self-reported contacts of Congressional offices to understand who contacts the offices. This provides insights into the characteristics of people who contact Congressional offices and self-reported reasons for why they contact the office. Unfortunately, though, these self reports provide little information into what individuals actually say to their elected officials. Our posts from elected officials' Pages, however, can provide this information.

While we might be concerned that the individuals who contact elected officials on Facebook are distinct from the population that contacts elected officials through other mechanisms, [Figures 1 and 2](#) suggest that the two populations are similar. To compare the two populations we use a self-reported measure of contacting a Congressional office from the 2006 Cooperative Congressional Election Study (CCES) and attributes of the Facebook commenters ([Ansolabehere, 2013](#); [Hickey, 2013](#)). For

²That would require either obtaining the list of accounts the office follows or, more directly, an analysis of the tweets directed at an elected official.

example, the age distribution of survey respondents who contacted their government representatives (henceforth “contactors”) and Facebook users who comment on their representatives’ Pages (henceforth “commenters”) is similar. In both populations, we see a roughly normal distribution centered around 65 years of age, where the median age for contactors is 60 and the median age of commenters is 57. Thus, they conform to the general finding that people who contact their representatives tend to be older adults (Verba et al., 1995; Hickey, 2013). The gender breakdown of both populations is also similar. For the most part, men communicate with their representatives more than women, but while contactors are only slightly more male than female (50.4% male, 49.6% female), commenters are more male by a clearer margin (53.8% male, 46.2% female). A greater difference between contactors and commenters may be in education level. It is well known that people who contact their representatives tend to be highly educated (Verba, Schlozman and Brady, 1995; Cain, Ferejohn and Fiorina, 1987; Hickey, 2013) , and that finding is clearly replicated in both contactor and commenter populations. Among contactors, 38.2% ended their education with high school, 45.0% with college, and 16.8% with grad school. Facebook commenters, however, tend even more highly educated, where 20.5% of commenters ended their education with high school, 66.5% have finished college, and 13.0% have finished grad school. Still, in both populations the vast majority of people have finished college or graduate school. Thus, we have good reason to believe that the people who contact their elected officials on Facebook are representative of people who contact their representatives through any available means.

Certainly, we might be concerned that the particular way Facebook facilitates communication between representative and constituent might lead to results that are too distinct to be useful for understanding constituent communication generally. We might suspect that the communicative context and structure specific to Facebook would be very different from traditional letter-writing, email, and phone campaigns. The evidence in this section, however, suggests that the people who communicate

Figure 1: Survey Respondents (left-hand plot) and Facebook commenters (right-hand plot) have similar age distributions

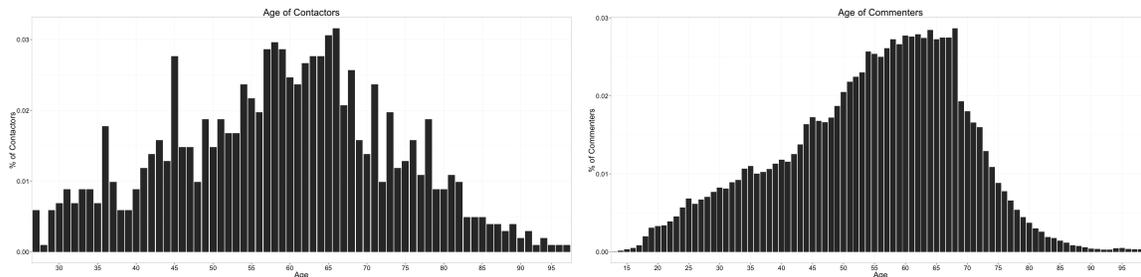
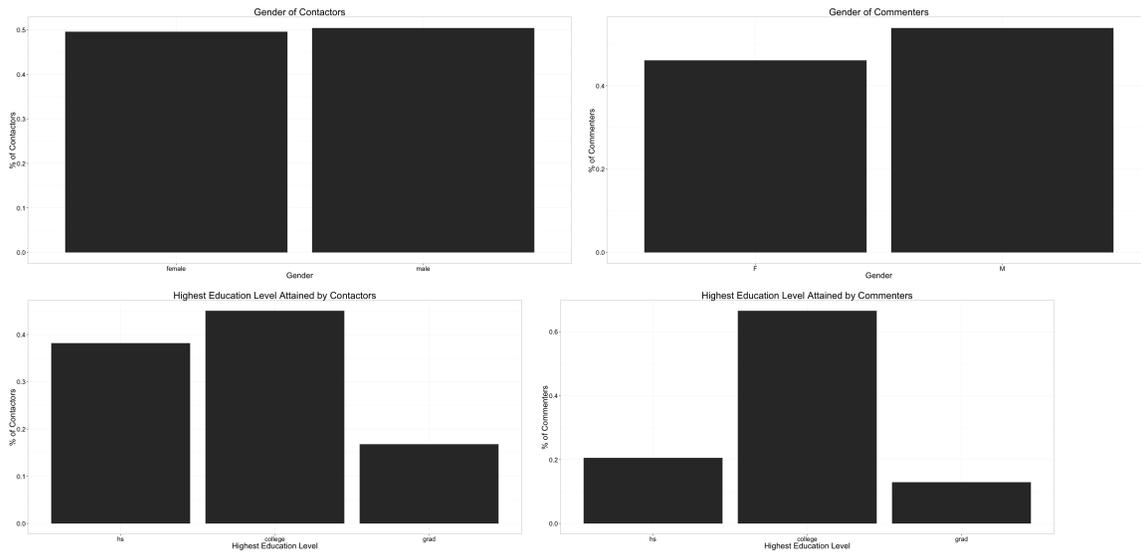


Figure 2: Survey Respondents (left-hand plots) and Facebook commenters (right-hand plots) have similar gender and education distributions



with their representative on Facebook are demographically similar to the people who contact their representative on Facebook. And, constituent communication currently takes many forms and increasingly the views expressed on social media are a key component of how elected officials learn about the views’ of the public.

Although Facebook constituent communication might not have the same features as letter-writing, it strongly resembles *town halls*—where elected officials are able to explicitly set an agenda to influence the kinds of comments and questions they receive from the public, but are also subject to whatever arbitrary question might arise from whomever decided to attend a particular meeting. Elected officials’ Facebook Pages, then, constitute a continuous and online town hall for the elected official. The result is that Facebook Pages provide a location for us to observe the sorts of messages that constituents send to their elected officials.

3 Learning the Topics and Tone of Conversation

Using the posts made on elected officials’ Pages, we are able to provide a first of its kind analysis of the issues constituents raise when communicating with elected officials and the tone of those comments. In this section we perform a comprehensive analysis of over 2.7 million posts and demonstrate that Facebook commenters are surprisingly focused on issues and generally avoid vitriol and trolling. To make this discovery, we take two complementary approaches to analyzing communication between elected officials and constituents. Our first approach is to use an unsupervised model, latent Dirichlet allocation (LDA), to automatically generate a set of categories that provide a granular view of what is discussed on elected officials’ Pages. We also analyze the posts using a supervised approach—a methodology where we set the categories before hand and then uses a statistical model to efficiently classify all the posts.

To quantitatively model our texts, we first represent the texts as a document

term matrix. To do this, we follow a series of steps that takes texts and turns them into count vectors, where each component of the count vector counts the number of times the particular feature occurs (Grimmer and Stewart, 2013). In our case, we discard stop words, remove punctuation, discard word order, and maintain the most common unigrams (single words), bigrams (pairs of words), and trigrams (triples of words). We use this representation of the text for both the unsupervised and supervised model.

We first apply a *topic model* to our text collection. Topic models are a broad class of models that encode problem-specific structure into an estimation of categories (Blei, Ng and Jordan 2003; see Blei 2012 for a comprehensive review). Topic models share two broad characteristics. The first is a definition of a topic. Statistically, a topic is a probability mass function over features. Each component of a topic describes the probability a particular feature (a unigram, bigram, or trigram) is used when discussing that topic. Substantively, topics characterize distinct substantive issues that could be discussed on legislators' Pages. In constituent communication, one topic may convey attention to Police Violence, with a high probability attached to words like **guns**, **prayers**, **police**, and **kill**. A second topic may discuss the Planned Parenthood debate, regularly using words like **care**, **health**, **children**, **women**, and **insurance**. To estimate a topic, the models use the co-occurrence of words across documents. Critically, the model determines the topic from the data, rather than us imposing the topic as the analyst. Second, a topic model assumes that posts are a mixture of the topics.

We apply LDA to over 2.7 million Facebook posts and comments on U.S. elected officials' public Pages collected over a 90-day period in the late summer to fall of 2015. Given the large number of posts, standard implementations of LDA will struggle to analyze the collection of posts. Therefore, we use an online version of LDA (Hoffman, Bach and Blei, 2010), as implemented in Řehůřek and Sojka (2010). Table 1 shows

the results of applying the online-LDA algorithm, when set to 25 topics.³ The 25 topics we analyzed are represented in Table 1 below. The first column provides a topic number for each topic, the second column represents a manually generated topic label, the third column represents stems that are indicative of the words that represent the particular topic, and the fourth column represents the proportion of all documents composed of that topic.

Table 1 shows that there is a great deal of substantive discussion on elected officials' Pages. Many of the topics are recent policy debates; they encompass posts about bills currently being discussed in Congress and political issues made prominent by current events. These topics are high volume and temporally ephemeral. Over this 3-month period, the primary campaign for the 2016 Presidential Election, the Trans-Pacific Partnership (TPP), Police violence/Gun Control, the Confederate Flag, the Iran Nuclear Deal, and Planned Parenthood were salient topics. The TPP is an excellent example of a bill under discussion in Congress. In the late summer to fall of 2015, the TPP was heavily debated in both houses, and support for the bill became a controversial issue, especially among Democrats. Thousands of Facebook users utilized their representatives' Pages to express opinions about the bill. Planned Parenthood is an example of a longstanding issue (abortion rights) made temporarily more prominent by current events. In the late summer when a series of videos were released featuring aborted fetuses and suggesting that Planned Parenthood was selling aborted fetal tissue to scientific researchers, outrage erupted among the Pro-life community. And this outrage made its mark on legislators' Facebook Pages with a barrage of comments. By the early fall, the House of Representatives introduced a bill and voted to defund Planned Parenthood for one year, a series of events that led to even more constituent comments about Planned Parenthood.

Some of our topics are political issues that tend to divide the two parties. The

³25-topics was chosen because it balances a less useful coarse representation of the texts with a more granular, but repetitive, larger number of topics. Note that we've normalized the documents to sum to 1, while the output from `gensim` will round down to zero when a topic drops below the threshold. Our results throughout hold whether we normalize the topics or not.

most prominent ones in the Summer to Fall of 2015 include Family issues, Business/Economy, Local issues, the Education to Employment pipeline, Civil Rights, Tax Policy, Immigration, Democratic Leaders, Veterans' Affairs, the Environment/Energy, and Government Waste. Some issues tend to unify most partisans from both parties—such as honoring the military and veterans or local issues/constituent services. Others, however, are issues that are consistently prominent because of their role in defining citizens' partisan identities—such as Tax policy or the Minimum wage.

Finally, some of our topics convey an expression of sentiment or anger. A portion of these expressions might be what most people imagine when they think about politics on social media—"trolling" and, more generally, an expression of vitriol. But surprisingly, there is more positive or neutral sentiment than there is negative sentiment on politicians' Facebook Pages. The positive mentions includes Personal Praise directed at government representatives or members of the community, praise for certain pieces of legislation, and informed debate of political issues and legislation. Commonly, constituents tell their representatives they are doing a great job and thank them for voting in a way they find agreeable. Negative expressions of sentiment include Vitriolic attacks, most commonly on the Affordable Care Act and abortion rights, criticism of Democratic leaders and policies from Republicans, expressions of frustration with a stalled and broken Congress, and Conservative outrage over liberal policy proposals like the Dream Act and institutions associated with the left, such as Planned Parenthood. Comments related to Legislative Praise, Legislative Debate, and Family Issues were the most common, and comments on Planned Parenthood, Personal Messages, and Conservative Outrage were the least common.

The topics in Table 1 provide a useful and specific portrayal of what is discussed on legislators' Pages. To complement the topic model organization of texts, we implement a supervised coding procedure that provides a more coarse organization of the posts. We apply two distinctive organizations of the texts. First, we analyze

Table 1: The Topics of Constituents’ and Legislators’ Posts

Topic	Keyword	Keys	Percentage
1	Legislative Praise	people,man,american,country,good	0.06
2	Political Opinion	read,agree,amen,issue,post	0.05
3	Family Issues	family,ve,years,back,time	0.05
4	Vitriolic Attacks	stop,thing,start,wrong,happen	0.05
5	Business/Economy	people,government,big,make,business	0.05
6	Presidential Election 2016	bernie,senator,sanders,bernie_sanders,trump	0.04
7	Local Issues	spell,state,city,contact,email	0.04
8	Education & Employment	work,jobs,wage,pay,people	0.04
9	TPP	vote,congress,america,obama,tpp	0.04
10	Civil Rights	law,rights,government,court,constitution	0.04
11	Personal Praise	love,job,gov,congressman,great	0.04
12	Tax Policy	tax,governor,pay,sir,social	0.04
13	Democratic Criticism, GOP	vote,republicans,republican,party,voted	0.04
14	Congressional Frustration	john,time,boehner,talk,water	0.04
15	Democratic Leaders	obama,president,happy,hillary,change	0.04
16	Veterans’ Affairs	military,day,men,veterans,sad	0.04
17	Police Violence/Gun Control	gun,prayers,guns,police,kill	0.03
18	Environment and Energy	bill,house,trade,de,act	0.03
19	Government Waste	good,money,free,job,save	0.03
20	Immigration	mr,problem,fast,track,idea	0.03
21	Confederate Flag	states,united,united_states,flag,state	0.03
22	Iran Nuclear Deal	deal,iran,war,nuclear,israel	0.03
23	Planned Parenthood	care,health,children,women,insurance	0.03
24	Personal Messages	great,praying,church,wonderful,son	0.03
25	Conservative Outrage	god,illegal,bless,god_bless,planned	0.03

the subject of posts from elected officials and comments from the public, placing all elected officials and the public’s posts into three categories: national, local, and not applicable. We define a post about a (1) national issue if it discusses a national policy issue, debate, or holiday. A post is (2) local if it discusses a local policy issue or debate or the legislator specifically. The (3) not applicable category covers the few instances where a post is made that is nonsensical. We also examine the tone (sentiment) of what is said on elected officials’ Pages. We classify the public’s comments into three categories: attack, neutral, or praise. An (1) attack is a direct statement meant to impugn the elected official. A (2) praise post is a direct compliment or expression of gratitude to an elected official, and (3) a post is neutral if it

neither attacks nor praises the elected official.

Using our straightforward coding rules, we hand coded a separate training set for elected officials' subject (2000 posts hand classified) and constituents' subject and tone (4000 posts hand classified). We then train a classifier using LASSO and ten-fold cross validation to select the model complexity penalty (Hastie, Tibshirani and Friedman, 2001).⁴ We assign documents to a particular category by choosing the category with the highest probability. Cross-validating our entire procedure yields an accuracy of 75% for the topic of elected officials' posts, 63% accuracy for the topic of the public's posts, and 66.25% for the tone of the public's posts.

When the public writes on elected officials' Pages, they discuss a wide variety of issues—not just issues of salient national importance. In total, 52% of the posts from elected officials are about national issues. This is highest for members of Congress and lowest for governors and mayors. Senators write 61% of their posts about national issues, while 58% of posts from House members are about national issues. Governors and mayors allocate 41% and 30% of their posts to national issues, respectively.

Posts from the public have a similar covariation with office. Overall 56% of posts made on elected officials' Pages are about national issues, but 64% of the posts on senators' Pages and 59% of the posts on house members' Pages are about national issues. In contrast, 32% of the posts on mayors Pages and 46% of the posts to governors are about national issues.

The tone of posts is also less vitriolic than the stereotypical portrayal of conversation on the internet. Overall, only 5% of posts explicitly attack the elected official, while 12% of posts praise representatives. Attacks are more common for members of Congress and governors than for mayors: 7.1% of posts on senators' Pages, 5.5%

⁴LASSO is essentially a linear regression with a penalty on coefficient magnitude to avoid overfitting. To determine a document's category we fit a series of binary regressions and then selected the category with the highest probability. An alternative procedure would include the margin in our training set, which yields a very similar set of classifications. Both procedures are a generalization of Naïve Bayes, where the generalization is that we do not assume the features are independent.

of posts on governors Pages, and 4.7% of posts on House members Pages are attacks, while only 2.8% of posts on mayors' Pages are attacks. Praise is also more common for mayors and governors than members of Congress: 18.3% of posts on mayor's Pages and 18% of posts on governor's Pages are praise, while 11.2% of posts to House members' Pages and 9.2% of posts to senators' Pages praise the elected official.

We can assess the validity of our tone coding a second way: using a count of “vulgar” language in posts that come from commentators. Specifically, we use a comprehensive list of swear words to examine the relationship between our automated codings of commentators' posts and incidence of swear words on posts made on elected officials' Pages. This reveals a strong relationship between attacks on elected officials and the use of swear words: when there are a higher proportion of comments that attack legislators, there is also a higher count of swear words. A 10 percentage point increase in attacks on an elected official is associated with an additional 1.2 swear words in the comment thread. Analyzed a different way, comment threads that have a higher rate of attacks also have a higher probability that at least one comment has a swear word. A 10 percentage point increase in the proportion of attacking posts is associated with a 6.7 percentage point increase in the probability a comment has a swear word, and a higher rate of swear words per comment (1.8 percent increase in the rate swear words are used). Not surprisingly, praising statements have a very different relationship with swear words—further confirmatory evidence for the validity of our automated codes. A 10 percentage point increase in comments that praise an elected official is associated with 0.24 fewer swear words throughout the comment, a 2.3 percentage point reduction in probability at least one comment uses a swear word, and a 5 percent reduction in the rate swear words are used.

4 How Elected Officials Shape The Focus and Tone of Constituent Communication

The previous section demonstrated, for the first time, that a large share of the communication elected officials receive from constituents is focused on issues, with only a small share of content vitriolic or trolling. Using the collection of messages from elected officials' Facebook Pages and our automated codings, we now examine how elected officials affect the types of comments they receive. Given the structure of Pages on Facebook, we examine the total reaction to elected officials' statements and how the content of what politicians post affects what the kinds of messages left on their Page. As we have argued above, this structure mirrors how elected officials facilitate other communication with constituents, such as the question and answer dynamic in a town hall.

Elected officials, through the types of messages they post, are able to affect the volume of messages they receive on their Page. This is evident in Table 2, which shows that when politicians post on national issues—coded using the supervised learning classification from the previous section—they increase the traffic to their Page. In Column 1 we show that the typical response to a post on a national topic results in 24.8 more comments in response (95-percent confidence interval [21.76, 27.83]). Of course, a concern with all of these relationships is that characteristics of the politician—such as level of office, ideology, or national popularity—could confound our results. To mitigate the effect of these and other time-invariant confounders we examine the relationship while also including legislator fixed effects. The second column shows that the large increase in total responses to a post remains, with a post on a national topic resulting in 19.2 more comments (95-percent confidence interval [16.36, 22.04]). Likewise, when legislators engage in a topic that is salient with constituents they receive more attention. We measure the trending of rank of each topic from Table 1 each hour, ranking the topics from 1, the most

salient, to 25, the least salient, and then assess the effect of posting on that topic in the subsequent hour. The fourth column shows that, after conditioning on fixed effects, posting on the top-ranked topic yields about 6.21 more responses than posting on the tenth most salient topic (95 percent confidence interval [3.1, 9.4]). The final two columns of Table 2 shows that we reach a similar conclusion if we analyze the log of the number of posts: posting on national topics increases the total attention to the post.

Table 2: Posting on National and Trending Topics Increases Overall Responses

	Number Posts	Number Posts	Number Posts	Number Posts	Number Posts	Number Posts	Log Posts	Log Posts
Intercept	20.79 (1.16)	-	37.98 (1.19)	-	15.68 (1.04)	-	1.23 (0.01)	-
National Post	24.82 (1.55)	19.20 (1.45)	-	-	20.08 (1.13)	14.52 (1.06)	0.73 (0.01)	0.53 (0.01)
Trending Rank	-	-	-0.96 (0.20)	- 0.69 (0.18)	-0.57 (0.14)	-0.35 (0.12)	-	-0.002 (0.001)
Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes

Focusing on national and trending topics also increases the number of constituents who respond to legislators’ posts, but decreases the share of the comments that come from constituents. Table 3 shows that after legislators post on national topics they increase the number of constituents who respond, but decrease the share of responses that come from constituents. The first four columns of Table 3 reveal posting on national topics increases the number of responses from constituents, though note that the increase in the number of posts from constituents is substantially lower than the overall increase in posts.⁵

While the counts of who is participating are important, elected officials are also interested in the relative composition of who posts on a topic: the share of posters who constituents and non-constituents. Offices often want to target their responses at constituents for electoral reasons and this will be easier when constituents compose

⁵The same relationship holds if we analyze the logarithm of the number of constituent posts.

a larger share of the respondents. There is also a statistical reason to analyze the share of posts from constituents: because some offices receive many comments, they exert a great deal of influence on the regression estimates. Analyzing the share of comments removes the share of the influence of these observations.

The two right-hand columns of Table 3 show that posting on national topics decreases the share of posts that come from constituents. The bivariate relationship shows that, on average, posts on a national topic have six-percentage points fewer comments from constituents than local posts (95-percent confidence interval [-0.07, -0.05]). The lower-proportion of responses from constituents remains even after including legislator fixed effects.

Table 3: Posting on National and Trending Topics Increases Number, But Decreases Share of Constituent Responses

	Number Const.	Number Const.	Number Const.	Number Const.	Number Const.	Number Const.	Share Const.	Share Const.
Intercept	3.97 (0.20)	-	7.60 (0.23)	-	4.72 (0.29)	-	0.45 (0.002)	-
National Post	4.98 (0.28)	4.42 (0.29)	-	-	5.13 (0.31)	4.80 (0.32)	-0.06 (0.003)	-0.006 (0.003)
Trending Rank	-	-	-0.26 (0.04)	-0.17 (0.04)	-0.21 (0.04)	-0.13 (0.04)	-	-
Elected official Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes

Elected officials, then, are able to exert an influence on both the number of posts that they receive in response to their messages and the composition of who replies to their posts. Elected officials are also able to shape the agenda with the content of their posts. Table 4 shows that when elected officials post on a particular topic, they receive a greater share of comments about that topic. We focus on how elected officials affect the share of comments on a post about either national or local issues. We do this, just as with our analysis of constituent comments, to limit the influence of high-leverage observations and because elected officials are often interested in the relative share of posts on a particular topic. This reveals that legislators are able to

exert a substantial influence on the composition of the subject of messages received. For example, when legislators post on national topics they increase the share of comments about national topics 9-percentage points (95-percent confidence interval [0.083, 0.097]). In contrast, posting on national issues decreases the share of posts from constituents about local issues—defined as either about local political issues or the representative directly—8 percentage points (95-percent confidence interval [-0.077, -0.090]). Accordingly, a government official posting about local issues raises the share of constituents’ comments on local issues by around 8 percentage points.

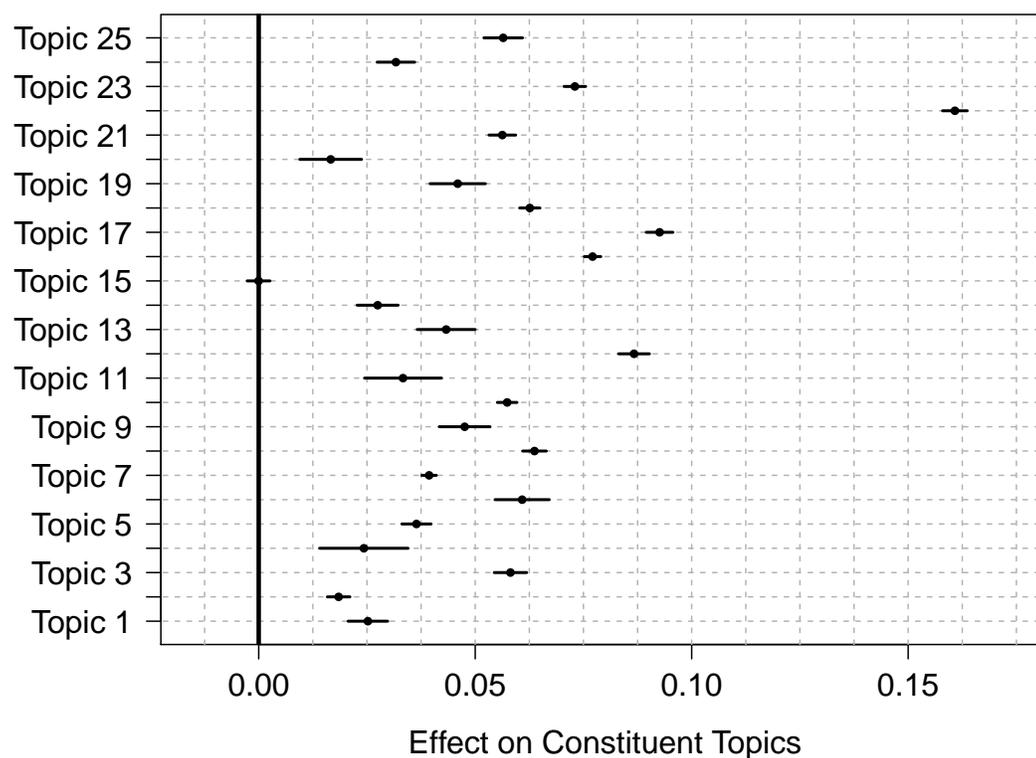
Table 4: Legislators Affect the Subject of the Comments they Receive

	National Count	National Count	National Share	National Share	Local Count	Local Count	Local Share	Local Share
Intercept	6.05 (0.45)	-	0.47 (0.002)	-	6.63 (0.35)	-	0.49 (0.002)	-
National Post	14.68 (0.63)	9.43 (0.61)	0.14 (0.003)	0.09 (0.004)	6.07 (0.49)	4.84 (0.51)	-0.13 (0.003)	-0.08 (0.004)
Trending Rank	-	-0.21 (0.07)	-	-0.00 (0.000)	-	-0.13 (0.06)	-	0.00 (0.000)
Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes

Table 4 shows that legislators are able to exert an influence over the kinds of comments they receive. Of course, grouping issues into national and local issues is a coarse partition of what legislators are discussing and potentially could overstate the influence legislators exert over the subject of what the public discusses on politicians’ Pages. To demonstrate that legislators exert a more fine-grained control over what posts they receive from commenters, we examine the relationship between the topics of legislators’ posts and the subsequent topics of posts from constituents. For the models presented here we assign each post from a legislator to the topic with the maximum proportion. Figure 3 shows the increase in the proportion of comments about each topic, given that the legislator posted on that particular topic. The solid dot is the point-estimate while the intervals are 95-percent confidence intervals.

Figure 3 shows that across nearly all topics when legislators post on a topic they

Figure 3: Relationship Between Legislators' Topics and Constituents Topics



increase the share of constituent comments on that topic. The effect is largest for discussions about the Iran nuclear agreement. When a legislator posts on the Iran nuclear agreement there is a 16-percentage point increase in the share of comments about the Iran nuclear deal (95-percent confidence interval [0.158, 0.164]). The lone topic where legislators appear able to exert little influence is on vitriolic attacks, primarily because elected officials rarely write a post that is substantially about vitriolic attacks.

Table 5 shows the effect averaged across all the topics, revealing the consistent and robust effect of legislators' topics on the subsequent response from constituents. When elected officials post on a topic they increase the number of responding posts about the topic and the share of responding posts about the topic. The increase is robust and remains even after including elected official fixed effects.

Elected officials exert a clear and specific influence over the subject of what

Table 5: Posting on a Topic Increases Attention to That Topic

	Number Posts	Number Posts	Share Posts	Share Posts
Intercept	2.42 (0.02)	- -	0.04 (0.000)	- -
Elected Official's Topic	4.1 (0.08)	4.1 (0.07)	0.06 (0.0003)	0.06 (0.0003)
Fixed Effects	No	Yes	No	Yes

constituents discuss with them and the volume of posts received. Table 6 shows that elected officials also exert an influence over the tone of the messages they receive. When elected officials post on national issues they increase the share of comments that attack the elected official, though we fail to reject the null of no effect when we include fixed effects. There is a marked decrease, however, in the share of comments that praise elected officials when they post on national topics, with a post on a national topic decreasing the share of comments that praise the elected official 3 percentage points.

Table 6: Posting on National Topics Decreases Praise for Elected Official

	Number Attacks	Number Attacks	Share Attacks	Share Attacks	Number Praise	Number Praise	Share Praise	Share Praise
Intercept	1.52 (0.18)	- -	0.04 (0.001)	- -	3.45 (0.21)	- -	0.15 (0.001)	- -
National Post	1.95 (0.24)	1.24 (0.21)	0.01 (0.001)	0.001 (0.001)	1.25 (0.28)	1.80 (0.28)	-0.05 (0.002)	-0.03 (0.002)
Trending Rank	- -	-0.04 (0.03)	- -	-0.000 (0.000)	- -	-0.05 (0.03)	- -	-0.00 (0.00)
Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes

Table 6 shows that elected officials are able to exert an influence over the sentiment expressed in response to their posts, though there appears to be a limited influence on the rate of attacks. Of course, there are other measures of the disdain elected officials might face online. An angry public might express their distaste with a large number of swear words. Table 7 examines the rate that posts on the elected

official’s Page make use of swear words.

Table 7: Incidence of Vitriol (Swears) on Elected Officials’ Pages

	Number Vitriol	Number Vitriol	One Vitriol	One Vitriol	Log Rate Vitriol	Log Rate Vitriol
Intercept	0.84 (0.09)	-	0.13 (0.002)	-	0.03 (0.001)	-
National Post	1.78 (0.13)	1.08 (0.12)	0.16 (0.003)	0.12 (0.004)	0.01 (0.001)	0.006 (0.001)
Trending Rank	-	-0.03 (0.01)	-	-0.002 (0.0003)	-	0.000 (0.0001)
Fixed Effects	No	Yes	No	Yes	No	Yes

Table 7 shows that when elected officials engage in national topics, they encounter more swear words overall and at a higher rate per comment. For example, when legislators post on a national topic, they observe 1.1 additional posts that contain a swear word (95-percent confidence interval, [0.86, 1.34]). A different way to measure the incidence of vitriol is to ask the probability that at least one post contains a swear word. The fourth column shows that posting on a national topic causes a 12 percentage point increase in the probability of at least one swear word in the subsequent posts—nearly doubling the baseline rate of 13 percentage points (95-percent confidence interval [0.11, 0.13]). The final column shows that posting on a national topic causes a 1% increase in the rate of swear words across posts.

Elected officials, then, exert a noticeable influence over the subject and sentiment of subsequent posts. When elected officials wade into national debates they receive more responses and more responses on that topic, but they also risk greater scorn from constituents and less praise. In contrast, posting on local issues leads to fewer responses, but a larger share of responses that come from constituents and that praise the elected official. Rather than mere passive recipients of constituents’ views, elected officials are able to exert influence over the types of comments they receive.

5 Conclusion

We have shown that elected officials are able to cultivate a specific audience for public messages. To demonstrate this, we have analyzed over 2.7 million public posts and comments made on representatives' Pages on the social media site Facebook. Not only do our findings illuminate why constituents contact elected officials about particular issues, it also reveals what constituents contact their elected officials about. We demonstrate that constituents raise substantive national policy issues with their representative, engage on local issues, and praise their elected officials at twice the rate they attack.

Our findings show that elected officials are not just passive recipients of messages from the public. Rather, elected officials are able to interact with constituents, soliciting comments from constituents that are likely to bolster support for the elected official. This provides a very different view of why constituent communication matters for political representation. Communication is not just an opportunity for representatives to learn what particularly passionate constituents think about issues or, more generally, to take a biased sample of opinion in their district. It is also an opportunity for representatives to interact with constituents who share the same issue priorities as elected officials.

Constituent communication on controversial issues is more similar to the purpose of constituency service than previous literature has supposed (Cain, Ferejohn and Fiorina, 1987). Much like constituency service, representatives view it as an opportunity to bolster electoral support. And like constituency service, representatives are able to take actions that increase the likelihood the public will interact with the office. This electoral motivation suggests that communication between constituents and elected officials is not just about constituents expressing views. It is also about representatives fortifying support.

Our findings raise several new and important questions about legislative behav-

ior, political communication, and representation. Of obvious interest is understanding how this effect varies across different media. We have presented evidence that elected officials attempt to set the agenda when they hold town hall meetings in their districts. More comprehensive evidence is needed to understand when and how elected officials are able to affect the content of messages they receive. Further, our findings raise new normative questions about the value of constituent communication for political representation. Most troubling is that our results might imply that constituent communication is more useful for elected officials to garner support than for constituents who want to hold their elected officials accountable.

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