

**When Do Politicians Grandstand?**  
**Measuring Message Politics in Committee Hearings**

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## **Abstract**

While congressional committee members sometimes hold hearings to collect and transmit specialized information to the floor, they also use hearings as venues to send political messages by framing an issue or a party to the public which I refer to as “grandstanding.” However, we lack clear understanding of when they strategically engage in grandstanding. I argue that when committee members have limited legislative power they resort to making grandstanding speeches in hearings to please their target audience. Using 12,820 House committee hearing transcripts from the 105<sup>th</sup> to 114<sup>th</sup> Congresses and employing a crowd-sourced supervised learning method, I measure a “grandstanding score” for each statement that committee members make. Findings suggest that grandstanding efforts are made more commonly among minority members under a unified government, and non-chair members of powerful committees, and in committees with jurisdiction over policies that the president wields primary power, such as foreign affairs and national security.

Keywords: congressional committees, hearings, grandstanding, message politics, text analysis

Additional notes: Supplementary materials will be available in an online appendix. Replication files are available in the JOP Data Archive on Dataverse (<http://thedata.harvard.edu/dvn/dv/jop>).

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While congressional committee hearings are designed to collect and transmit policy relevant information to the floor (Krehbiel 1992), committee members sometimes use hearings as opportunities to send political messages by taking positions on policy issues or framing the image of a party or the administration (DeGregorio 1992; Del Sesto 1980; Esterling 2004; Farnsworth 1961; Huitt 1954; Park 2017), a set of behaviors I refer to collectively as “grandstanding.” When members grandstand in hearings, would the statements they make merely be spontaneous reactions to witnesses’ testimonies, or would there be any systematic reason for them to do so? Previous studies find that what members say in hearings influences public opinion (DeGregorio 1992; Kriner and Schikler 2014) and is rewarded by special interests (Esterling 2007; Ray 2018). Yet, despite the increased political salience of congressional hearings in recent years, we do not have clear understanding of when and why committee members use hearings to send political messages or grandstand.

There are a handful of previous works that directly or indirectly address this question. Extant literature finds that members tend to grandstand and promote their predetermined views in hearings when committee members’ policy preferences are polarized (Huitt 1954; Park 2017) or when political benefits of grandstanding is likely to be large – e.g. when the issue is salient (DeGregorio 1992; Park 2017). Although not directly referring to committee hearings, Fenno (1973) argues that while conducting committee activities members can achieve their reelection goals by taking positions in a way to represent and protect their constituents’ interests. Further, the literature on message politics hints a similar story but emphasizes partisan competition for winning the majority control in a chamber as a major reason for position-taking (Evans and Oleszek 2001; Lee 2011, 2016). However, these electoral accounts have been neither explicitly argued nor tested in a committee hearing setting.

In this study, I propose a new theoretical explanation and argue that committee members tend to grandstand as an electoral campaign strategy especially when they lack institutional power to pursue their policy agenda. That is because when they have limited opportunities to please voters by making policies representing their interests, members will resort to making speeches to please them. Specifically, I identify three such conditions in which members have limited legislative power within a committee: being a member of a minority and opposition party, a non-chair member of a prestige committee, or a member of a committee with jurisdiction over issue areas that the president dominates such as foreign and national security policies.

To test this theoretical claim, I construct an original dataset of committee hearing transcripts on 12,820 House hearings from the 105<sup>th</sup> to 114<sup>th</sup> Congresses and measure a “grandstanding score” for each individual statement made by committee members utilizing a crowd-sourced supervised learning method. Then, I aggregate the score by individual member in each Congress to conduct a member-level analysis. Taking advantage of the panel structure of the member-level data, I estimate within-individual effects of members’ minority and opposition party status. By additionally conducting a statement-level analysis and exact matching, I test whether the same member tends to grandstand more in prestige committees or in committees dealing with foreign or national security policy issues than in other committees.

The key findings are as follows. First, minority members are more likely to grandstand than majority members in order to offset their lack of institutional power to advance legislation, particularly under a unified government. Second, grandstanding statements are more frequently made by non-chair members of prestige committees (Appropriations, Budget, Rules, Ways and Means) in which committee leaders propose most of the bills. Third, members of Congress are more likely to grandstand in hearings before the committees dealing with policies where the

president plays a primary role, such as foreign affairs and national security. These findings suggest that committee members grandstand in hearings not just spontaneously but rather for a more systematic reason: to compensate their lack of ability to affect policy and to verbally appeal to their target audience. In addition, it further implies that grandstanding, which is often considered wasteful, can be a useful political tool for politicians to communicate issue frames to voters or any other external audience and thus can change the electoral climate in favor of themselves and their party.

More broadly, it also contributes to the literature on message politics. Message politics refers to the practice by party leadership encouraging its members to repeatedly advertise the party's themes and policy stances to the public to enhance party image while tainting the public standing of the other party or the president (Evans and Oleszek 2001), and it is increasingly employed as a party-level campaign strategy as a result of intensified partisan competition (Lee 2011, 2016). In light of this literature, findings of this study suggest that messaging activities are exerted even in committee hearings, which is a novel addition to the existent literature.

Furthermore, this article provides a new insight to the classic discussion on show-horses versus work-horses (Matthew 1959; Payne 1980). Previous studies demonstrate that show horses focus on fostering their public recognition and are relatively less ambitious about policy-making whereas work horses emphasize their legislative activity more than public perception and that individual members tend to be classified as either type. However, the finding that the same member grandstands if situated in a committee environment with less legislative opportunities but does not otherwise implies that members' role choices may not be a deterministic feature of individuals such as personality as commonly believed (Payne 1980) but rather a strategic choice made under varying contexts.

## Theory

Members of Congress are known to be single-minded reelection seekers (Mayhew 1974). In order to achieve this goal, they are incentivized to use their limited time and resources in a way to maximize their chances of reelection. While in D.C., they spend over 35% of their time on legislative and policy work which usually happens in committees,<sup>1</sup> and individual committees spend significant time on holding public hearings. This suggests that committee activities including hearings may reward members electorally (Fenno 1973). This section explains how committee members can utilize their participation in public hearings to enhance their reelection prospects and which institutional constraints may affect members' strategic behaviors.

Once a committee member decides to participate and talk in a hearing, I assume that he can utilize his chance to talk in two different ways to maximize the odds of reelection: One is to ask witnesses for policy relevant information and have constructive discussion on a policy issue with an intention to make a policy benefiting his constituents; the other is to give a political statement with an intention to take positions on policies along with his supporters and even give them a guidance of how to view -in other words, frame- an issue, a party or the President and his administration, which can be further used to formulate campaign messages (Park 2017).<sup>2</sup> Note

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<sup>1</sup> From "Life in Congress: The Member Perspective" which is a report produced by the Congressional Management Foundation and the Society for Human Resource Management.

<sup>2</sup> It is possible for a member's speech to do some of both, but it is also possible to place members' statements on a continuum depending on the intensity of one style over the other. In order to simplify the theoretical reasoning, I assume that a statement can be characterized as either one of the two participation styles represented by these two extreme poles on a continuum.

that in a hearing, each member can request a chair for a chance to give an opening statement and ask questions of witnesses in a Q&A session with a time-limit of five minutes, which works as a budget constraint so that a member should strategically optimize the allocation of their time on either of the participation styles.

Members' statements they strategically make in hearings can be rewarded through the increase in their reelection prospects, but the reward mechanism may depend on the legislative constraints under which individual members are situated.<sup>3</sup> For example, those who are institutionally endowed with the authority and power to move their bills forward successfully can be benefited more by focusing on learning about the policy issue through hearings, and thus, their statements are likely characterized as information-seeking. On the other hand, those who lack such power can hardly gain electoral rewards by appealing to voters based on their legislative achievements, and thus their relative payoffs from grandstanding increases. In the following subsections, I identify individual members' minority and opposition party status and committee environments as institutional constraints placed on their legislative potent.

### *Minority Status and Divided Government*

In contemporary Congress, the majority party wields disproportionately more control over legislative processes and resources than the minority (Cox and McCubbins 1993, 2005). It is easier for the majority to set the agenda and pass preferred legislation so long as it enjoys

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<sup>3</sup> However, of course, the chances that voters are directly exposed to conversation going on in each public hearing are low except the ones on highly salient issues that the media intensely report. Rather, members are assumed to communicate what they said in hearings through other channels such as newsletters, press releases or social media (Slapin et al. 2018).

sufficient internal agreement. Thus, majority members are known to be more effective in legislation (Volden and Wiseman 2014). In contrast, minority members possess little power over legislative processes, and as a result they focus on achieving their goals by sending political messages (Lee 2011). The messages may blame the majority party for bypassing the minority's views or blocking passage of bills that the minority supports and call for a change in party control in the next election. Thus, Lee (2011) argues that while majority members use their institutional power to make policies, minority members focus on grandstanding and message politics. Therefore, I expect minority members to make more grandstanding statements in public committee hearings (*Hypothesis 1A*).

Additionally, given that most hearings are intended for overseeing the executive branch, committee members of the opposite party as the president likely see hearings as opportunities to deploy political messages critical of the president. Therefore, under a unified government, minority party committee members are doubly incentivized to use committee hearings to highlight policy failures of the government in order to degrade public support for their partisan opponents in Congress and in the White House. Consequently, I expect that minority party committee members are more likely to grandstand under a unified government (*Hypothesis 1B*).

### *Powerful Committees*

Some committees tend to provide their members with relatively little legislative opportunities for various reasons that are unique to each individual committee. This study identifies two such types of committee environments.<sup>4</sup> The first is powerful committees.

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<sup>4</sup> However, I acknowledge that these are not a complete set of categories of the committee environments restricting legislative power of their members. Rather, there can be other types that



The House Committees on Appropriations, Budget, Rules, and Ways and Means are often referred to as the powerful or prestige committees due to their ability to influence almost everyone and every bill in the House (Smith and Deering 1997). The Rules Committee determines a special rule under which each bill will reach the floor. Appropriations and Budget Committees pass spending bills, and because virtually almost all legislation addresses budgetary issue, these committees enjoy jurisdiction over most legislative matters. With authority over all tax bills, as well as the most nationally salient issues, the Ways and Means Committee commands exceptionally broad jurisdiction.

However, while these committees may exercise outsized influence in the chamber, non-chair members of these committees have few opportunities to initiate legislative action because high-priority bills are often introduced by the chair rather than by the members. Indeed, Volden and Wiseman (2014) find that non-chair members of powerful committees tend to have lower legislative effectiveness scores.

In addition, much of their committee work concerns bills that fall under the jurisdiction of other committees.<sup>5</sup> As a result, powerful committee members have low motivation to seek information through public hearings on these bills, and members may focus on using hearings as opportunities to conduct message politics. Thus, I expect that non-chair members of powerful committees are more likely to grandstand in powerful committee hearings (*Hypothesis 2*).

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are not necessarily mutually exclusive. One alternative category can be select committees for their lack of authority to legislate bills, and another can be oversight-oriented committees.

<sup>5</sup> However, note that the Ways and Means Committee has a unique policy-oriented jurisdiction (e.g. social welfare programs) just as do other non-prestige committees.

### *Jurisdiction with the President's Dominance*

Compared with the president and the Senate, the House possesses relatively weak authority over foreign and national security policy than on other domestic public policies.<sup>6</sup> For example, the Constitution gives the president the exclusive power to negotiate treaties, appoint ambassadors, and command the nation's armed forces, and endows the Senate exclusively with the Advice and Consent Power. Though war declarations require approval in both houses of Congress, the president dominates war decisions in practice (Johnson 2013).

This presidential dominance over foreign and national security policy may incentivize members of committees with jurisdiction over these policy areas to engage in message politics for at least two reasons. First, given their relatively weak legislative powers in these policy areas, messaging is a more impactful legislative tool than it is for members of other committees. Second, more power means more responsibility. Thus, when performing oversight on these policy areas, committee members can find more opportunities to speak critical of the president who holds primary responsibility on these issues. Thus, I expect committee members to engage in grandstanding more often when participating in hearings held by committees with jurisdiction over foreign affairs or national security policy (*Hypothesis 3*). During the period I analyze, I identify four such committees: The Committees on Foreign Affairs and Armed Services, the Select Committee on Benghazi, and the Permanent Select Committee on Intelligence.

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<sup>6</sup> This is not to say that the House wields no power over foreign and military policy, as its budgetary and investigatory powers enable it to influence policy in these areas. However, because the House lacks the formal powers over these policy areas that the president and the Senate enjoy, they wield relatively less power.

## Data and Methods

To examine committee members' political messaging behavior, I use 12,820 House committee hearing transcripts from the 105<sup>th</sup> to the 114<sup>th</sup> Congresses to construct a unique variable which measures an individual member's relative propensity to grandstand in committee hearings.<sup>7</sup>

Unlike more commonly used floor speech data, the format of these hearing transcripts varies across committees and Congresses with much irregularity in labeling of the chair, adding witness information to the transcript, and including documented testimonies in the middle of statements.

In order to deal with these challenges and to correctly identify committee names, committee chairs, committee members, and witnesses and remove texts that are not spoken, I utilized both Python to implement an automated scraping and parsing method and performed extensive manual clean-up.<sup>8</sup>

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<sup>7</sup> The transcripts were downloaded from the Government Publishing Office (GPO). The original data I constructed include both the House and Senate hearing transcripts, but this study focuses only on the House since committee activities are emphasized more in the House than in the Senate (Aldrich and Rohde 2009), and the House has larger membership with more variations to explore. Before the 105<sup>th</sup> Congress, each Congress includes only a handful number of hearing files that are not representative of the hearings held in the Congress. Also, hearing files of less than 20KB do not contain any statements. Thus, I exclude these hearings from the analysis. The number of representatives and statements in each Congress is in Table A1 in the online appendix.

<sup>8</sup> In order to identify the names, members, chairs and ranking members of committee, I referred to and cross-checked with the committee membership data provided by Govtrack.com

(<https://github.com/unitedstates/congress-legislators>) and by Stewart III and Woon.

This study utilizes 1,026,677 statements made by committee members during public hearings which account for slightly less than a half of all committee hearing statements. Each statement is labeled with speaker-level information such as the speaker's first and last names and a unique member identification code, a "Govtrack" number, as well as hearing-level information such as a committee code, date and hearing title.<sup>9</sup>

To measure the intensity of grandstanding of each statement, I use a supervised learning method, which is preferred to an unsupervised learning method when there is a preset categorization to be applied. Supervised learning methods require a subset of data to be manually classified by human coders. Following recent studies which demonstrate that crowd-sourced human-coders perform better as a group than several trained coders in terms of consistency and reproducibility of the codes (Benoit et al. 2016, Montgomery and Carlson 2017), I employed online workers at Amazon Mechanical Turk (MTurkers, in short) using SentimentIt.

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<sup>9</sup> The remainder of the committee hearing statements consist of witness testimony and procedural statements. Witness testimony is excluded based on the identifying speaker-level information that does not correspond to a member of Congress. Procedural statements are excluded by removing the first and last statements of a hearing if they contain 80 words or less, statements coming right before the first witness' opening statement since they tend to introduce the profiles of witnesses, statements that include "come to order", "recognize", "expired", "yield", "adjourn" or "recess" and contain 80 words or less, and those including both "thank you" and "yield" and containing 50 words or less, etc. However, I keep statements containing procedural remarks that are longer than 80 words because such a long statement may contain non-procedural contents which should be included in the analysis.

SentimentIt is a software developed by Montgomery and Carlson (2017) to facilitate posting, collecting and analyzing text-coding tasks for MTurkers as well as evaluating the job performance of individual workers and screening out those whose choices are deviant relative to other workers. Unlike the conventional method of manually classifying each text into one of the binary or multiple categories predefined by a researcher, SentimentIt promotes measuring the relative intensity of one concept through repeated pair-wise comparisons of randomly paired texts in the sample. As a result, SentimentIt yields a continuous measurement of a unidimensional concept in each unit of text and places texts on a continuum.<sup>10</sup>

The procedure to construct the grandstanding score is as follows. First, in order to select training texts, I conducted sampling twice: Once only from the 114<sup>th</sup> Congress and then from the 105<sup>th</sup> through 114<sup>th</sup> Congresses after the study expanded to cover a broader range of time period. In each phase, I randomly chose a subset of hearings, decomposed long statements into paragraphs, and merged them back with adjacent short paragraphs if they are too short for workers to make decisions on them. Among these preprocessed statements, which I will now refer to as paragraphs, I sampled 1000 of them that contain from 50 to 120 words in the first sampling phase and 2000 in the second.<sup>11</sup>

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<sup>10</sup> Because this method of measurement measures legislators' relative tendency to grandstand or the relative intensity of grandstanding of each statement it does not allow measuring the overall prevalence of grandstanding statements in the entire corpus. Their overall prevalence can be measured through binary coding of the concept in future research.

<sup>11</sup> Note that the second sampling excluded the hearings that were chosen in the first, and larger training set generally helps prediction performance of the learning models. Therefore, I use the

Second, in each unique task assigned to a worker, I presented two randomly paired statements drawn from the sample and asked workers to indicate which one would be better described as opinionized or grandstanding as opposed to fact-based or information-seeking. Although I am measuring the relative intensity of grandstanding in each statement, in order to give coders a clearer definition of what is not grandstanding I conveniently label the opposite end of the spectrum as “factual or information-seeking”. In the instructions, I define a grandstanding statement as a statement that does one of the following: 1) denounces or praises a person or an institution (e.g. a party, its members, the president, a government agency, a witness or others); 2) takes a position on a policy (which includes subjective interpretation of a policy-relevant situation); 3) asks questions meant to embarrass or attack a witness.<sup>12</sup> I also specified that a statement is factual or information-seeking if it 1) offers an objective description of a policy-relevant situation, or 2) asks a witness a question in purpose of fact-finding or seeking expert opinion. Then, I present illustrative examples of statement drawn from the data corresponding to each case. The full instructions are in the online appendix.<sup>13</sup>

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samples obtained from both sampling procedures with weights applied to learners. The sampling procedure for the training set and calculation of the weights are detailed in the online appendix.

<sup>12</sup> Further justification for this definition is provided in the online appendix.

<sup>13</sup> I acknowledge that a grandstanding statement in a hearing can also be stated as a question as if the speaker seeks for information. To give MTurkers a clear guidance about how to deal with this type of statements, in the instructions I emphasized that “not all questions are information-seeking but can be part of grandstanding depending on what is being asked and how.”

Third, I set SentimentIt to compare each paragraph to 20 other randomly paired paragraphs. This setup generated 30,000 comparison tasks which were divided into multiple batches. Workers received \$0.08 for completing each task.<sup>14</sup>

Fourth, I trained potential workers using a Qualtrics survey in which I provided detailed instructions about the task, a coding scheme, and examples of statements which can be clearly categorized as grandstanding statements and non-grandstanding statements. The survey consists of five unscored practice questions and six scored test questions. Each of the eleven questions is followed by the correct answer and justifying explanations. Only workers who submitted correct answers to five of the six test questions are granted a qualification to work on this task. Among 387 volunteers, only 169 workers attained qualification and worked on the task.

Fifth, after collecting data from each batch, I identified those whose task results are too deviant from other workers by fitting a Stan model, a built-in function of the SentimentIt package.<sup>15</sup> Below presents one of the practice questions used to train workers, and the correct answer for this is Statement A:

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<sup>14</sup> For the texts that are easier to comprehend, SentimentIt recommends 10 paired comparisons and \$0.04 per comparison. However, given the high level of complexity of the hearing statements, I set the bar higher and paid more as specified above.

<sup>15</sup> See Montgomery and Carlson (2017) for a more detailed explanation of the Stan model that estimates the SentimentIt score (or the grandstanding score in this study).

**Table 1. An Example Practice Question Used to Train Workers via Qualtrics Survey**

**Practice Question #1.**

Please read two statements below and click on the button that corresponds with the statement that is relatively *more opinionized/grandstanding* or *less factual/information-seeking*.

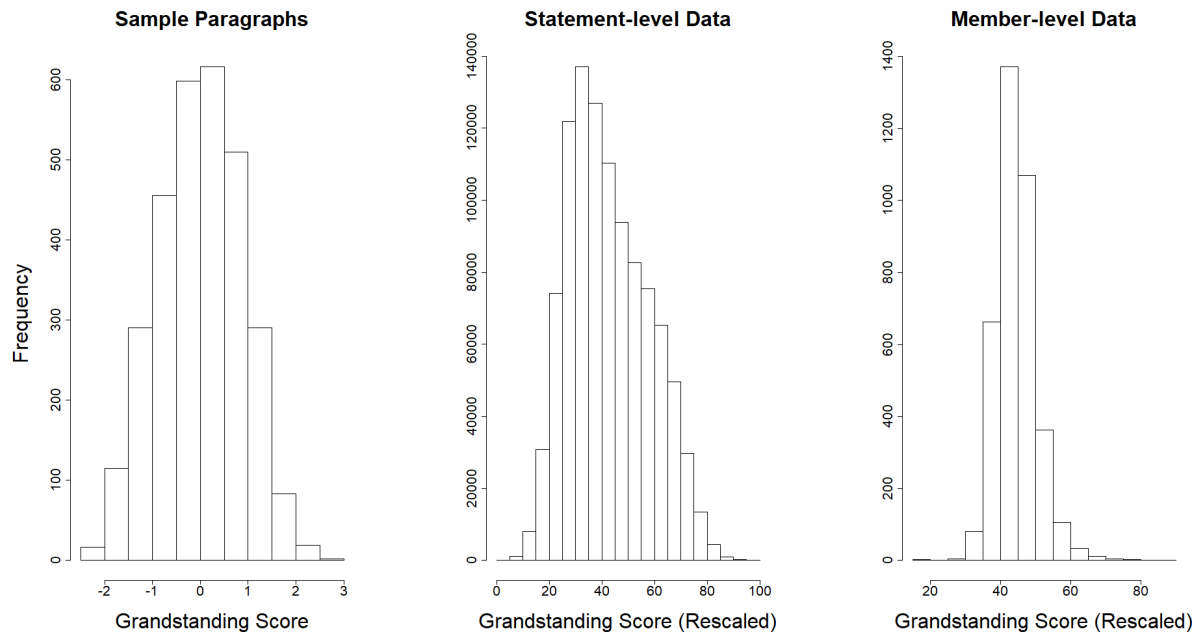
A statement is more opinionized or grandstanding if it denounces or praises an institution or a person, or expresses subjective views on a policy or a situation more explicitly and strongly.

A statement is factual or information-seeking if it gives objective description of a situation or asking witnesses for information or their opinion. **Which of the two statements below is more opinionized/grandstanding or less factual/information-seeking?**

**Statement A:** That is an extraordinarily important program that the committee strongly supports. I am very passionate about it, and could you talk to us about why you proposed cutting that program by nearly 40 percent? I hope that is not something that you intend to do. I would hope you will be as strong a supporter of that program as this committee is.

**Statement B:** And, finally, what can we do to ensure the Military Health System has trained and ready providers to support the readiness of the force and provide a valued health benefit to our beneficiaries?

**Figure 1. Distribution of Grandstanding Score**



Note: The grandstanding scores for the statements in the entire dataset are rescaled to run from 0 to 100 and are reflected in the last two graphs. The scores are aggregated by each member in each Congress in the member-level data.



Sixth, through the repeated pairwise comparisons of paragraphs, the SentimentIt package provides “a grandstanding score” for each paragraph. It ranges from -2.4 to 2.6 with almost normal distribution. The first graph in Figure 1 presents its distribution for the 3000 sampled paragraphs.

Next, I preprocess the entire corpus by tokenizing, stemming, lower-casing and removing punctuations and stop words and then construct three different document matrices: a doc2vec matrix and two document term matrices with either a plain bag of words approach or the term frequency-inverse document frequency application. Further details on the choice of key parameters used for each document matrix are discussed in the online appendix.

For the purpose of cross validating the final model’s out-of-sample prediction performance, I randomly chose 300 paragraphs from the sample and set them aside. Using the values in each of the three document matrices for the remaining 2700 sample paragraphs as independent variables and their corresponding grandstanding scores as a dependent variable, I fit 13 different learners: Random Forest, Lasso, Support Vector Machine, Gradient Boosting Machine, Discrete Bayesian Additive Regression Tree sampler, Bayesian Generalized Linear Model and Linear regression with varying parameters for the first four models, which results in 39 model predictions for each paragraph in total. Then, I fit an Ensemble Bayesian Model Averaging model which assigned non-zero weights to 9 of the 39 models and combined them.<sup>16</sup>

The use of the ensemble method in combination with three different document-level matrices significantly improved the out-of-sample prediction of the grandstanding score. By

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<sup>16</sup> This ensemble method tends to better perform in predictions than any individual learning algorithm can do alone (Montgomery et al. 2012; Opitz and Maclin 1999, Rokach 2010).

predicting the 300 virgin paragraphs using the ensemble model, I measure the root-mean-squared-error (RMSE), and it is 0.613. Compare it to the RMSE from the best single learning algorithm, Support Vector Machine of the Kernlab package using the doc2vec matrix, which is 0.63 and to those from the other models ranging from 0.631 to 1.391. The Pearson's correlation coefficient between the SentimentIt scores and the predicted scores of the ensemble model is 0.703 while the same best performing single model produced the correlation of 0.673.<sup>17</sup>

Finally, I rescale the grandstanding score to run from 0 to 100. Then, I aggregate the score by member and Congress, and the score runs between 17.65 and 85.78. The pooled member-level standard deviation across time is 4.34.<sup>18</sup> The distributions of these rescaled measures are presented in the second and third graphs of Figure 1, respectively.

In order to substantively validate the grandstanding score, I analyze the most frequent words of the statements in the bottom quartile and those in the top quartile. The full list of these words and detailed analysis are in the appendix. The analysis suggests that the grandstanding statements in the top quartile are featured by making “point”(-s) on “problem”(-s) and “concern”(-s) on the most salient, divisive issues such as “secur”-(ity), “tax”, “health” “care” and “drug” frequently mentioning the “presid”(-ent), “administr”(-ation) and emphasizing adjectives

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<sup>17</sup> In order to further validate the measurement statistically, I also tried the “Word score” model, which is widely used in the political science literature (Laver et al. 2003), and predicted the virgin paragraphs. However, its prediction is significantly worse than my model: The RMSE is .808 and the correlation is .597. These were computed using the plain document term matrix with 6000 words which is the size of the matrix at which the word score model performed best.

<sup>18</sup> The formula is provided in the online appendix along with descriptive statistics.

and adverbs. On the other hand, the non-grandstanding statements tend to refer to the words relevant to information-seeking: “inform”(-ation), “expla(i)n”(-ation), “report”(-s), “record”(-s), “research”, “data”, “studi”, “estim”(-ates), “assess”(-ment), “percent(-ages)” and “rate”(-s).

Furthermore, I analyzed the top 30 and bottom 30 statements which I present in the appendix. The most grandstanding statements tend to promote members’ opinions on policies, criticize a head person of an executive body or grill a witness while the least grandstanding statements tend to delve into details on a policy issue and ask of witnesses’ expectation on policy consequences, etc. These substantive analyses confirm that the grandstanding score successfully captures key characteristics of grandstanding statements and distinguishes them from those not.

**Figure 2. Average Grandstanding Score Over Time**

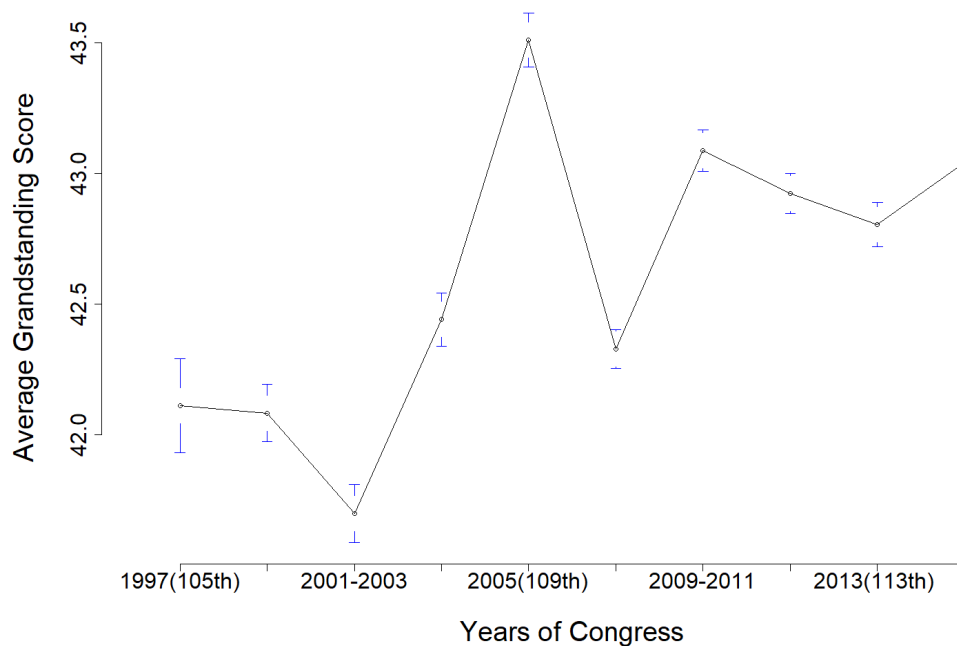


Figure 2 displays the changes in the grandstanding score over time. Each dot represents the average grandstanding score in each Congress with bars indicating 95% confidence intervals. It seems that legislators grandstand more over time, but the size of the increase is trivial.

**Figure 3. Partisan Difference in Grandstanding Scores Across Congresses**

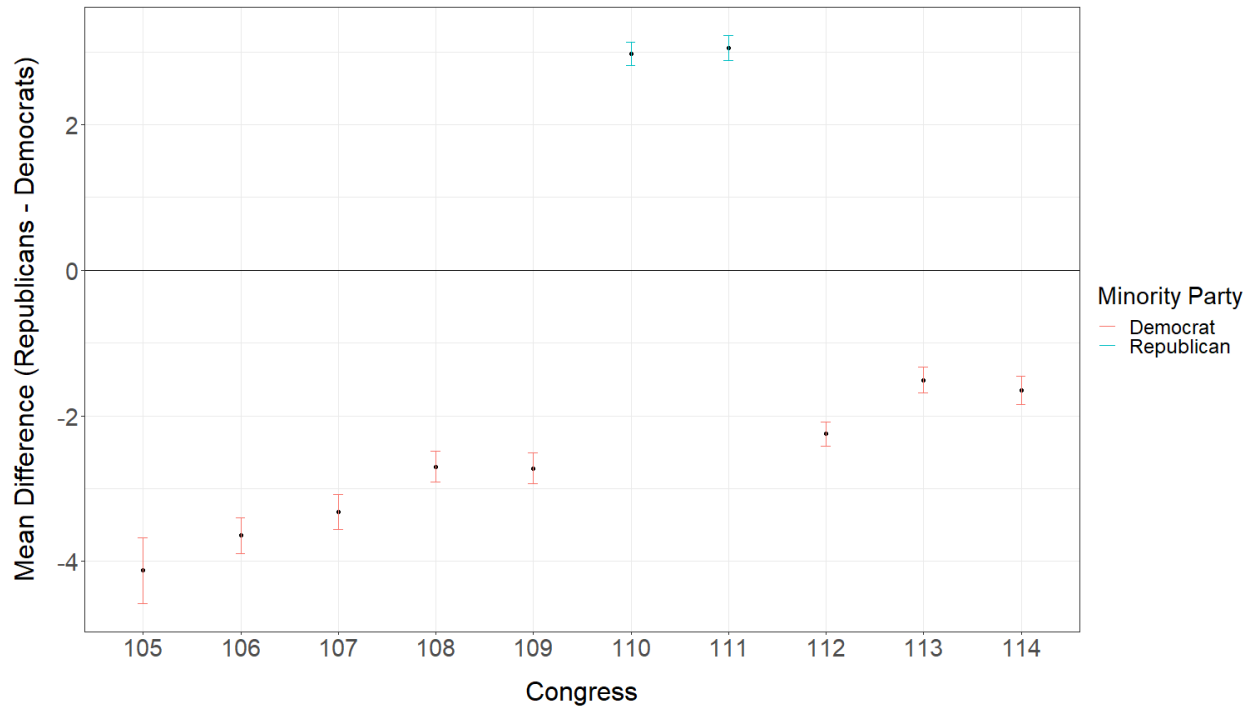


Figure 3 on the mean difference between Democrats and Republicans across the ten Congresses with 95% confidence intervals shows a more informative, interesting pattern: In eight Congresses in which Democrats were the House minority they grandstanded more than Republicans on average whereas in two Congresses, 110<sup>th</sup> and 111<sup>th</sup>, where Republicans held the minority status Republicans grandstanded more. This result provides preliminary evidence in support of the first hypothesis on the minority members' behavior.

Figure 4 plots the distribution of the grandstanding score for the 114th Congress by the DW-Nominate score including the names of outliers. Those who made less than ten statements are colored in grey to reflect the relative reliability of the scores. For example, Paul Ryan who served as the Speaker of the House made only one statement. Except those with too few statements, Walter Jones (R-NC), who served on the Armed Services Committee, has the highest grandstanding score among all House members. Charles Rangel (D-NY) who served on the

Ways and Means Committee ranks the second. The third place goes to Adam Schiff (D-CA) who served as a minority member of the Select Committees on Intelligence and Benghazi Terrorist Attacks, which further validates the measure because both committees were notorious for members' grandstanding and partisan fight in hearings during the 114<sup>th</sup> Congress. On the other hand, the least grandstanding representative is Alex Mooney (R-WV) who served on the Natural Resources Committee classified as a constituency-committee (Smith and Deering 1997).<sup>19</sup>

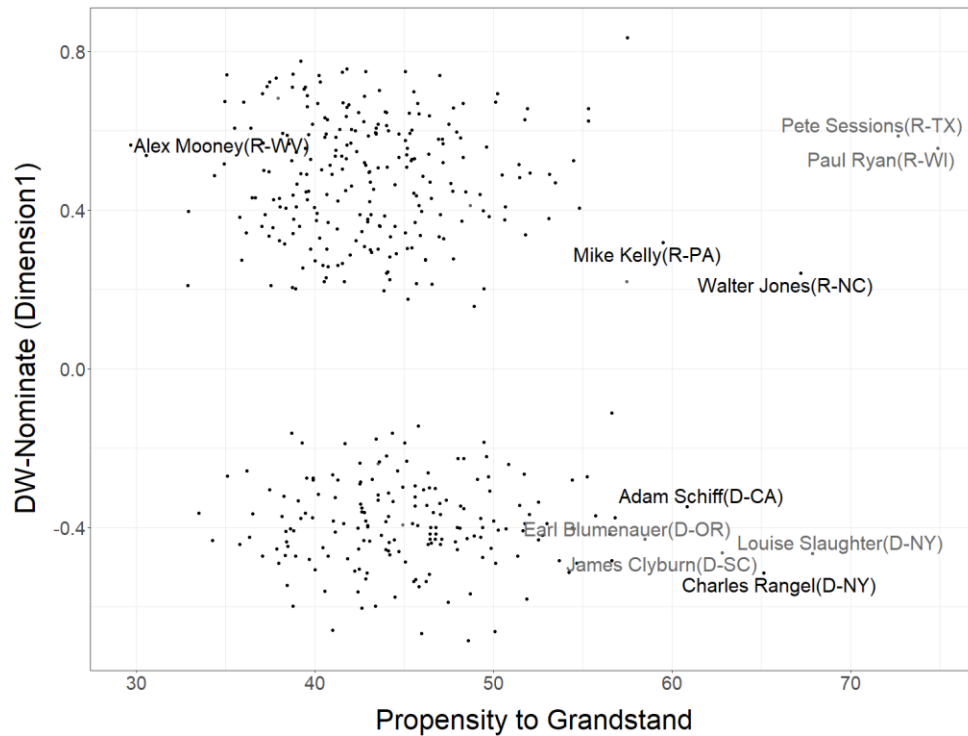
In order to establish a better causal relationship proposed in the hypotheses, this study estimates the within-individual effect of the key explanatory variables. To test the first hypothesis on member's minority status and its effect under unified government, I utilize the member-level data and binary indicators for the minority status and unified government. In the member-level regression model, I include fixed effects for member and Congress with clustered standard errors by member.<sup>20</sup> Including the member-fixed effects leverages the panel structure of the data given members' repeated observations over time, which allows estimation of within-individual variations and facilitates making causal claims. The estimators indicate whether a change in a covariate makes the same member behave differently while controlling for any individual-specific unobservable, static confounders such as personality. In addition, Congress fixed effects account for any trends in grandstanding specific to each Congress.

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<sup>19</sup> He also served at the Budget Committee, but there is no statement he made in this committee.

<sup>20</sup> Multilevel modeling literature argues that random effects for a level with too few groups may bias the group-level variance components as well as the group-level fixed effect estimates (Bryan & Jenkins 2016; Maas & Hox 2005). Thus, in all models, I choose to include Congress fixed effects, not random effects.

**Figure 4. The Grandstanding Score by DW-Nominate Scores for the 114<sup>th</sup> Congress**



Despite the advantage of the member-level analysis in estimating within-individual estimators, the hypotheses on committee variations has to be tested using the statement-level data because some members sit on multiple committees so that using the member-level data it is impossible to tease out and compare members' statements made in certain committees from those made in other committees. Thus, using the statement-level data, I conduct exact matching to compare grandstanding scores of the same member in the same Congress inside and outside of power committees, and I do the same for committees with jurisdiction over foreign affairs or national security. The simple mean difference using a matched data set will provide a within-individual effect of committees. Additionally, in order to test the effect of individual committees separately instead of collectively, I also present a regression model with committee fixed effects along with Congress fixed effects and random intercepts for members and hearings. However, note that the committee fixed effects will not serve as within-individual estimators.

In the regression analysis, the following set of control variables are included to account for potential confounders. First, because those more loyal to the party may endeavor to send partisan messages during hearings more than those less so, I include an indicator for party leaders and the individual members' party unity score which measures the frequency of voting with the party median on party unity votes.

Second, electorally insecure members may benefit more by appealing to moderates while in contrast for secure members are less likely hurt but rather benefited by sending position-taking messages to their core supporters. Thus, I account for members' electoral security by including the percentage of the votes that a member won in the previous election. Also, given the first-past-the-post electoral system, the effect of members' electoral security may not increase linearly with their messaging effort. Therefore, I also include the percentage of the vote squared.

Third, because senior members enjoy more power and influence and are likely to have accumulated more expertise in their committee's jurisdiction, they are in a good position to raise their voices and send partisan messages during hearings. However, as with electoral security, the effect of additional terms served may not have a linear effect on grandstanding. Therefore, I include the number of terms served by a member as well as its squared term.

Fourth, given the previous finding that polarized policy preferences among committee members leads members to grandstand (Huitt 1954; Park 2017), in the statement-level analysis I control for the level of polarization within each full committee measured by the distance between party means of the DW-NOMINATE scores following the practice in McCarty et al. (2006). I use the level of polarization for a full committee for subcommittees under it.

Fifth, because members may have stronger motivation to grandstand on salient issues with broader audience, in the statement-level analysis I control for the number of members who

spoke in each hearing as a proxy for the level of attention given to each hearing. Note that issue salience can also be measured by counting the number of times an issue is mentioned in news media, but this type of variable may suffer from endogeneity with the grandstanding score.

In addition, I include the absolute value of the first dimension of each member's DW-NOMINATE score and indicators for partisan affiliation, female members and freshmen. In the member-level analysis I include indicators for chairs of committees or subcommittees, but in the statement-level analysis I include indicators for chair's statements and ranking members' statements, respectively. Also, I control for the frequency of statement of each member in each Congress in the member-level analysis but not in the statement-level analysis because it is unlikely to affect the intensity of grandstanding of each statement theoretically. I retrieved the party support scores from Voteview.com, but most of the individual-level variables are retrieved from the Legislative Effectiveness Score dataset constructed by Volden and Wiseman (2014).<sup>21</sup>

In order to compare effect sizes across the covariates, I rescaled some variables to range from 0 to 1 if they do not. These variables include ideological intensity, legislative effectiveness score, vote percentages, and seniority. Descriptive statistics are in the online appendix.

Also note that in the current article, I include select committees such as the Permanent Select Committee on Intelligence, the Select Committee on Benghazi and the Select Committee

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<sup>21</sup> I do not control for the legislative effectiveness score (LES) because members choose their strategy- either grandstanding or legislating- in a hearing based on institutional constraints, and thus controlling for the LES may introduce post-treatment bias. However, including it in the model does not change the results. Similar logic may apply to the party unity score as well, but including or excluding this variable in the model does not change the results, either.



on Energy Independence and Global Warming because their hearings merit analysis. However, for fair comparison only among the standing committees, I additionally present the same set of analysis and its results excluding these select committees in the online appendix. The results barely change, and their substantive interpretations remain the same.

### **Individual-level Analysis**

The first two models in Table 2 present results using member-level data with fixed effects for Congresses as well as members rendering the coefficients within-individual estimators. The dependent variable is the individual member's grandstanding score in each Congress. Recall that the pooled member-level standard deviation across time is 4.34. The first model includes only the minimum number of control variables to show the reliability of the results presented in the second model which includes the full set of controls. In both models, minority status and its interaction with the unified government indicator are positive and statistically significant, which supports the first hypothesis. Specifically, based on the second model, under divided government a minority member is more likely to grandstand than he would as a majority member by .608 point which constitutes about one seventh of the within-individual standard deviation of the grandstanding score. In addition, under unified government a minority member is more likely to grandstand by 1.286 points accounting for about one third of the within-individual standard deviation than he would as a majority member. Therefore, under both government types the same member is more likely to grandstand when he is of the minority party, but the gap is greater under unified government as expected. Furthermore, a majority member is more likely to grandstand under divided government by 1.35 points than under unified government. Thus, both majority and minority members tend to grandstand more under divided government.

**Table 2. Regression Results**

Model description	Member-level		Statement-level	
	Model 1	Model 2	Model 3	Model 4
Minority	.527** (.254)	.608** (.263)	.949*** (.059)	.964*** (.065)
Unified	-.101 (.510)	-1.350 (.922)	.357 (.263)	-.381 (.291)
Minority*Unified	.636** (.305)	.678** (.338)	.138* (.081)	.125 (.090)
Party support		.516 (2.765)		-.567 (.595)
Vote share (%)		6.569 (7.285)		7.023*** (1.849)
Vote share squared		-.048 (.047)		-.045*** (.012)
Seniority		.685 (4.146)		1.517* (.815)
Seniority squared		.082* (.044)		-.047*** (.011)
Ideological intensity		-3.213* (1.690)		-.849* (.448)
Democrat		-6.449 (6.562)		.248 (.253)
Freshman		-.900*** (.248)		-.428*** (.080)
Female		-		-.425 (.326)
Chair	-1.212** (.481)	-1.141** (.483)		
Subcommittee chair	-1.487*** (.240)	-1.510*** (.239)		
Chair's statements			-4.334*** (.048)	-4.363*** (.049)
Ranking member's statement			-.879*** (.074)	-.942*** (.075)
Party leader	1.109* (.567)	1.226** (.552)	.172 (.145)	.083 (.146)
Statement frequency	-14.899*** (1.212)	-14.610*** (1.220)		
Number of speakers			4.203*** (.308)	4.161*** (.309)
Polarization within committee			-.924** (.457)	-.946** (.458)
Constant	40.918*** (.236)	38.970*** (3.471)	43.507*** (.357)	41.885*** (.889)
Member effect	Fixed	Fixed	Random	Random
Hearing effect	-	-	Random	Random
Committee effect	-	-	Fixed	Fixed
Congress effect	Fixed	Fixed	Fixed	Fixed
Observations	3,708	3,637	999,666	987,808

Standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

The dependent variable is grandstanding score.

Note: The coefficient for the female variable in Model 2 was not estimated due to collinearity.

Here, it is interesting but also counterintuitive to note that when a member becomes a minority member he grandstands more when his party controls the White House than he would when his party does not control neither the White House nor the House of the Congress. This is probably because under unified government the majority has less motivation to send critical messages against the administration so that committee chairs are less likely to hold hearings which may potentially provide minority members with opportunities to grandstand; however, under divided government chairs may more actively hold hearings on partisan issues in which majority members can send partisan messages, and as a result minority members end up grandstanding more to counteract majority members' messaging effort.

### **Statement-level Analysis**

In order to test the hypotheses on committee effects, I utilize statement-level data and exact matching on members in a given Congress. Grandstanding behavior measured at the statement-level is more appropriate to test the committee effects, given that each statement can be nested within its specific committee of origin, but the statement-level regression models do not facilitate within-individual estimators. As an alternative solution, I isolate members of Congress who served on both a powerful committee or a committee with jurisdiction over foreign affairs or national security policy as well as at least one additional committee in the same Congress and then aggregate these members' statement-level data by member, Congress and whether a statement was made in one of the committees of interest or not in order to exact-match the aggregated data based on this information. The procedure is as follows.

First, I measure the average grandstanding score for each member inside and outside of the four powerful committees in each Congress and do the same with regards to the four

committees with jurisdiction over foreign affairs or national security policy. There are 564 non-chair members who have served in at least one powerful committee and at least one non-power committee in the same Congress, and 758 members who have served on at least one committee with jurisdiction over foreign affairs or national security policy and at least one other committee without jurisdiction over those types of policies. I treat these two samples of members as separate samples in the remainder of the analysis using matching.

Second, using only the data on these samples of members of Congress, which constitutes my matched data sets, I compare the average grandstanding scores of their statements made during hearings held by the committees of interest to those made during hearings held by other committees. In the first sample of 564 members who served on at least one powerful committee and other committee in the same Congress, the average grandstanding scores for their statements made during hearings held by those committees are 47.913 and 45.428, respectively. The size of the gap is a little more than a half of the pooled within-individual standard deviation of the grandstanding score. In the second sample of 758 members who served on at least one committee with jurisdiction over foreign affairs or national security policy and one other committee in the same Congress, the average grandstanding scores for their statements made during hearings held by those committees are 46.606 and 44.556, respectively. The difference accounts for .472 times the pooled within-individual standard deviation.

**Table 3. Difference in Means Using the Matched Dataset to Test Committee Effects**

Treatment Committees	Powerful	Foreign & Security
In these committees	47.913	46.606
In other committees	45.428	44.556
Difference (in times of s.d.)	2.485 (.573)	2.050 (.472)
P-value from a t-test	.000	.000
Number of members	564	758

Note: To test the effect of powerful committees, all chairs' statements were excluded from the analysis.

Third, using t-tests, I find that members grandstand more in hearings held before powerful committees and committees with jurisdiction over foreign affairs or national security policy than they do in hearings held by other committees (p-value < .001 in both tests). The results are summarized in Table 3. These results using matching provide within-individual effects of committees and empirical support for the second and third hypotheses. For the purpose of robustness checks, I further conducted regression analysis using the matched datasets with the treatment variable and the same set of controls included in Model 2 in Table 2. The coefficients on the treatment variable barely change from the size of differences between the treated and controlled groups presented in Table 3. The full regression results are in the online appendix.

While the results using matching showed the collective effects of certain types of committees, it is worth measuring the effects of individual committees and check if there is any variation among powerful committees and among the committees with jurisdiction over foreign affairs or national security policy. To this end, Models 3 and 4 in Table 2 present regression models using the statement-level data with committee fixed effects along with fixed effects for Congresses and random effects for members and hearings to account for group-level variance. The dependent variable is the grandstanding score of each statement. Model 3 includes only the minimum set of controls, and Model 4 presents the full set of control variables. However, note that the effects estimated in these models are not within-individual estimators.

The key finding of this statement-level regression analysis is the coefficients on the fixed effects for individual committees which facilitate comparison of the relative levels of grandstanding across committees. These coefficients in Model 4 are presented in Figure 5 with

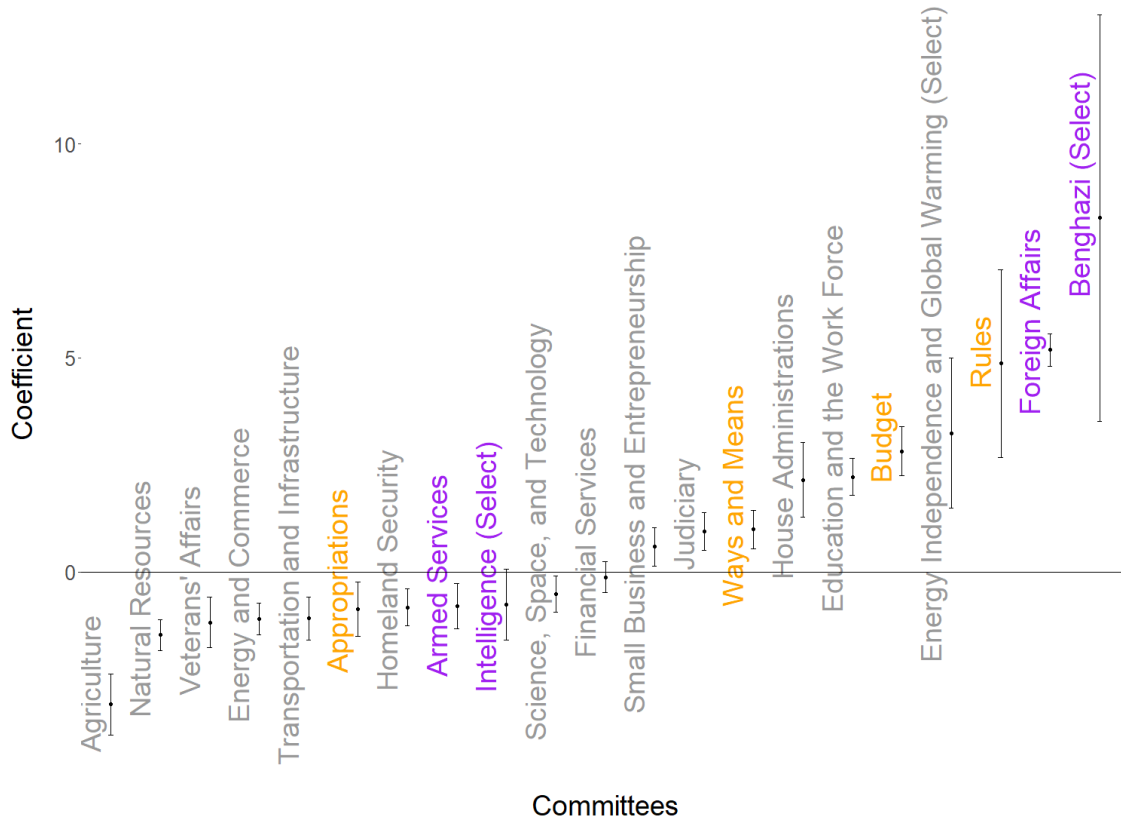
95% confidence interval.<sup>22</sup> The names of powerful committees are in orange, and the names of committees with jurisdiction on foreign affairs or national security are in purple. The Committee on Oversight and Government Reform is set as the baseline category in the model because its average grandstanding score is close to the mean grandstanding score of all statements in the data. Note that there are 22 unique committees, and the coefficient of the baseline group is not measured.

It is interesting that there are some variations within each set of committees of interest. However, all powerful committees except the Appropriations committee have positive and statistically significant coefficients corroborating the results in support of the second hypothesis. Two of the committees with jurisdiction on foreign affairs or national security policy ranks the top two committees mainly contributing for the empirical support of the third hypothesis. However, the Permanent Select Committee on Intelligence scores low with statistically insignificant coefficient, which may be because it holds most of the major hearings in closed-door sessions so that it is hard to capture the true characteristics of their hearings. The Committee on Armed Services ranks low as well, which is probably because although it deals with security issues that the President dominates it has to debate and consider the defense authorization bill annually which keeps the committee busy with legislative activities in the early months of a year.

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<sup>22</sup> Table A4 in the online appendix presents the coefficients on committee fixed effects as well as the average grandstanding score of statements made in hearings before each committee.

**Figure 5. Coefficients on Individual Committees in Model 4 with 95% CI**



The names of the powerful committee are in orange, and those of the foreign or national security committees in purple. The baseline committee is the Committee on Oversight and Government Reform. Therefore, no coefficient is estimated for this committee.

In summary, my results demonstrate within-individual effects supportive of all the hypotheses presented in this article through panel data analysis and exact matching. First, minority members are more likely to engage in grandstanding behavior in general than they do when they were majority members, and this is particularly more so during periods of unified government. Additionally, the finding that both majority and minority members tend to grandstand more under divided government suggests that oversight is one of the major sources of grandstanding and emphasizes committee chairs' power to gatekeep issues to be considered in hearings in a way to facilitate majority members' grandstanding while blocking that of minority members. It further implies that net grandstanding activities is likely be larger under divided government than under unified government.

Second, the same member tends to engage in more grandstanding behavior in hearings held by powerful committees than he does in hearings held by other committees. This suggests that characteristics of powerful committees such as leadership-centered legislative procedures may incentivize ordinary members to focus on position-taking during public hearings.

Third, members of Congress are more likely to grandstand during hearings held by committees with jurisdiction over foreign affairs or national security policy. The President has more power and responsibility over these policy areas so that members of Congress are relatively more interested in sending political messages during hearings held by these committees as compared to hearings held in other venues.

However, these findings should be interpreted as providing descriptive evidence in favor of the hypotheses rather than definitive evidence due to the observational nature of the data.

## **Conclusion**

This paper has demonstrated that congressional committee members tend to grandstand in committee hearings when they have limited legislative opportunities to pursue their own policy agenda using original data and a new measurement, the grandstanding score. This finding further implies that members resort to making statements favorable to themselves or their party in order to appeal to voters if they cannot effectively appeal by making policies representing their target audience. Therefore, members' grandstanding behavior in committee hearings may be a part of their electoral campaign strategy deliberately chosen rather than spontaneous reaction to the discourse occurring in hearings. Especially given the previous findings that public hearings affect the president's approval rating and solicit campaign contributions (DeGregorio 1992;



Esterling 2007; Kriner and Schikler 2014), this electoral explanation of members' grandstanding behavior in hearings gains power. Further, this explanation illuminates the role of committee hearings as a communication channel between members of Congress and the public which has been discussed in classic literature on congressional committees (Fenno 1973; Huitt 1954) but received less attention in recent studies. Therefore, this article contributes to the study of congressional committees. More broadly, it also makes a novel empirical contribution to the literature on message politics by finding that messaging activities manifest even in committee hearings.

Given that committee hearings continue in Congress at an unabated rate despite the waning influence of committees in the legislative process under the strong party government (Aldrich and Rohde 2009, Rohde 1991), it is important and timely to study committee members' political motivation to hold and participate in hearings other than conducting committee business. This article addressed one mechanism: to send political messages to the public. Although this analysis did not find much variation across time in committee members' messaging efforts in hearings because it only looked at the period in which the transition from committee government to party government was already settled, future research utilizing hearing data extended to earlier Congresses to test whether this messaging trend increased over time as the legislative role of congressional committees diminished will be productive.

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### **Biographical Statement**

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## Appendix (For Print)

### 1. Top 30 and Bottom 30 Statements:

#### A) Grandstanding (Top 30 statements in a descending order):

[1] " And even the environmental movement should realize that the worst polluters in the world were the Socialist and Communist governments. People take better care of their own private property than is taken of property that is in public ownership. I haven't been to this area, but I bet these people take good care of their property. It is so sad to think that a lot of these people, or most of them, are people who came from Cuba where land was confiscated and taken away from them by a Communist dictator, and now they come to the United States, a country that is supposed to be a free country, yet these people are coming all the way from south Florida to Washington, DC, to try to defend their little piece of the American dream. The unbelievable thing is, this is happening all over this country. These liberal, left-wing, Socialist, big-government types think they can run everybody's life better than they can themselves. So they don't mind coming in and doing a really cruel thing and taking away this property. And I just think that we need to speak out against it and that it needs to stop, or at least hopefully we can slow it down a little bit. Thank you."

[2] " Let me just say that this was a half-a- billion-dollar mistake and I would ask that we point out that there was an action taken by your body under a justification of a legal definition that I think is a threat to both Democrats and Republicans that the word ``is" is, and that for somebody to sit there and ignore the law and redefine the word ``is" I think the American people are outraged that a half-a-billion-dollar issue was raised while legal jargon was ignoring the fact that the law is in there. And I don't think Democrat or Republican wants to have to add in every law that it will never happen. I yield back to the gentleman."

[3] " And were never willing to admit just how oppressive they really were. I think it is time that we insisted that they face this reality of what Marxism/Leninism is all about. I think it is time that--there are many millions of Muslims around the world, many if not most who could be friends and be open to these kind of ideas of accepting people and not oppressing somebody simply because they worship God in a different way. We need to call to task the Saudis and the Pakistanis and these other people who have supposedly been on our side and quit trying to treat them with kid gloves because it ain't going to work. These regimes are basically gangster regimes in terms of the way they treat their people and it shouldn't be tolerated and the United States has done that. Shame on us. Thank God for you and Chris Smith and other people who have committed their lives to exposing those people who are stepping on the religious freedom of other human beings. Thank you very much for being with us today, and I think I am supposed to gavel this down. This hearing is now adjourned."

[4] " But I want to say one thing, though. I remember watching on television, as many people have. And it was really heart-rendering and warm when I saw the replica of the Statue of Liberty and everything it stood for. And all I can say is when we saw the tanks rolling in and as they brought the--basically, I understand they were drugged, hyped-up people from outside of Beijing in to roll over those people as they were screaming for help and screaming for the rest of the people to cry out for freedom, I mean, I just--I--it broke my heart. And for all those that are still fighting for freedom in China, they represent one-quarter of this world population. And yet we seem to turn our backs on them again and again. And I am glad that the people here in this room stand up for freedom and stand up for those, and I will always remember that photograph. Yield back the balance of my time. Thank you."

[5] " Right. And it is difficult, especially right now when we are having trouble recruiting, to walk away from people with a genuine love for their country. Obviously, it is not a policy. And to turn away from people who have done nothing wrong and to choose others who have committed some offenses and have been arrested for offenses and to say you are somehow better than others simply because of who people are--I am embarrassed. I mean, there is not a whole lot more to say except that I apologize that we use the wrong yardstick to measure a person's worth and devotion to the country. And it is my fervent hope that in 15 or 20 years we will change. Because I will tell you for myself that I may be straight, but I am not narrow. And I think that this policy here is very, very narrow. Thank you, and I yield back. I am sorry, may I take that one question, Chairwoman?"

[6] "The hubris shown by HHS is downright insulting and callous to the millions of families and individuals suffering under this broken system. This is a clear example of unaccountable government; one that refuses to recognize its failings even when it is presented with constructive recommendations for improvement. We want to help in this committee, this Congress wants to help, but we can't help you if you are not even willing to admit there

is a problem. We are not talking simply about wasted dollars or lost program efficiencies. We are talking about lives ruined, about dreams that are shattered, we are talking about preventable tragedies and lives lost."

[7] " I know that in all likelihood the vote that we will take in this committee will be on partisan lines, which was different than '74. I am not making this allegation, but I have had constituents say that this is a Republican coup d'etat to take out a Democratic President they could not defeat. Whether you agree with that or not, should we be concerned that, in the future, impeachment will be used as a partisan tool? Father Drinan. Well, that's the great danger. I keep wondering why the arguments that the Republican majority use, why haven't they persuaded any Democrats? Why haven't they changed public opinion? There is something very fundamental in the American psyche that we don't want this process and that I tried to be--tried to listen to. What is that argument? And the people are very troubled. And to repeat what I have said before, I think there is going to be a big popular uprising against this process."

[8] " Now, it is important for us, who are so self- absorbed in our own importance in this particular trivial pursuit, to recognize that there is a whole world out there. Southeast-Asian economies are crumbling, Iraq is preparing weapons of mass destruction, there is a new palace revolution within the Kremlin, and as we speak, 6 million political prisoners in China are suffering fate that most people in this country cannot even comprehend. So I would like to call on you, Mr. Chairman, to follow the example of Senator Thompson, who recognized that there is nothing there, throw in the towel and call off the investigation. What we are witnessing is an irresponsible and reckless partisan political theater of the absurd, with self righteousness oozing, oozing from the pores of this committee, at a time when the country is, in fact, in need of dealing with serious domestic and international issues. Last night, as we were here until past 11 voting, some of us went into the Cloakroom and watched Ken Burns' Masterpiece, the Lewis and Clark expedition, and it sort of restored one's faith in both the past and future of this country. But, frankly, I couldn't care less whether these breathless movies showing Sweet 'N Low being put into a coffee at a White House gathering, whether it is released Tuesday or Wednesday or next Friday afternoon, and this pathetic attempt to make it appear that we are dealing with issues of major import, matters of deep concern for the United States, when military officers are testifying that nobody altered these films, that mistakes were made in releasing them late, never having made a mistake in my life, I really have no sympathy for people who make mistakes in the White House or elsewhere, but I just think it is important to wake up and realize that there are real issues to be dealt with, and this trivial pursuit needs to come to an end. Campaign fund-raising reform is long overdue, the Republicans are as guilty as the Democrats of historic mistakes and we better move on to some real issues. Thank you, Mr. Chairman."

[9] " Well, just for the record, Mr. Chairman, I would hope that this breach of professionalism of Peter Glick and the Pacific Institute is not just swept under the rug like so many of these other violations that we have seen. And quite frankly, and I am sorry this is a political thing, my observation is any time a Republican does anything like this, you know, all of a sudden there is an uproar. But you can have all kinds of emails between people talking about hiding the real facts and trying to prevent other people from actually publishing their findings scientifically which of course violates every scientific principle, and they just get away with it. But I think it is time for us to quit ignoring these violations by radical environmentalists."

[10] "The gentleman is absolutely correct. The thing that irritates me most, you--maybe not you personally, but the agency, both agencies, supported the language as we wrote the bill. You supported it and said it would work. It was our intent to import those dead bears and to improve the stock of the remaining bears. And we have done part of that thanks to Canada and the Eskimo people in Canada. But this is ridiculous. I mean, I have yet to hear anybody justify not allowing the dead bears in. This has got to be the dumbest thing I have ever heard in my life, that you are going to punish the Canadian people, disrespect the Congress, because you won't import dead bears that no longer can do anything. I mean, I say this is why we have a real problem with government today, is you. The gentlelady."

[11] " Reclaiming my time, as you know, I am chairing the Immigration Subcommittee, and we held 15 hearings in 2 months. But I will just give you my opinion that if we adopt this plan, and I hope that we do today, and I don't know why we shouldn't, that it is completely unworkable that every time an e-mail or a phone call is made, that you have to convene the bipartisan staff. It is just absurd. The Minority, when you were the Majority, would never have done that. We will never get this done if we have to tie ourselves in knots in that way. And I would think that would be a dumb way to do it. That is just my opinion. And certainly I know that Chairman Thomas would never have agreed to that. The Chairman is not me, and it is not you, and we have to have some trust that day-to-day routine stuff and oversight of this is going to be done in a proper way."



[12] " Thank you. Mr. DeMarco, I have said this to you before. As I listen to your defense, and I do consider that defense, and rightfully so, I said to you and I begged you, do not mistake a comma for a period. We can get so caught up in saying what we have achieved that we fail to know that we can do better, and I think that is what troubles me and that is what troubles many Members of Congress. And I say it to you with all sincerity, I am not trying to hurt your feelings or anything like that, but I have to tell you I am talking about some people who are in pain, I mean big time. So I beg you do not mistake a comma for a period."

[13] " Mr. Chairman, I know we are getting ready to vote, so I just want to say something quickly. Venezuela is a nation that has an abundance of oil. And also had an abundance of middle class. And under this socialist policy, they have destroyed the middle class and destroyed a nation. They can't even get toilet paper now, they have a shortage of toilet paper, let alone newspaper print. And we are getting blamed up here in the United States for making it happen. That's nonsense. I think we need to take action. We don't need any more talk. They have had enough talk. The people are suffering. We need to take action. And I'm sorry for my colleagues' viewpoint and disappointed in that viewpoint. But I feel the pain in Venezuela. It is wrong what is happening to those people, and we need to stand up and be vocal about it and not be silent. So I am glad this committee is doing this. And I appreciate the chairman's action. Also on our friends that are in Nigeria, people forget they locked, before the kidnapping, they locked young children in a building and burned them to death. This is something we need to take action. If anybody has a heart, look around the world. United States is a leader. I am tired of leading from behind. I yield back."

[14] " Made no investigation. Yet you said we have six investigations going and it is a serious issue. I think that should have been the first thing on your list. I have heard the opposing side say we are spending a lot of money on this investigation, why? And I can't help but think my brothers and sisters in uniform fought for this Country on the beaches and jungles and deserts defending the freedoms guaranteed by the Constitution, and the IRS takes that with, well, it must not be very important to them. And that is insulting to me. It really is. Freedom of speech is very dear to my heart, as is the rest of the Constitution. I fought in two wars. I don't care how much it costs to guarantee those freedoms. And I would like to thank the chairman and the committee for spending so much time and energy on this. But I am going to cut through everything, because I don't really believe you when you say it is going to--20,000 pages and it is going to take years to get emails."

[15] " Well, I can tell you, and I don't know if you picked up on it, but I am extremely frustrated by how our country has handled this. We have allowed this to go on. We have allowed our own citizens to be victimized by it. We have put enormous burdens on our law enforcement as though they don't have enough on them already. I think it ought to be evident that they do. And the administration's policies, frankly, are not only disappointing, it is just incomprehensible that we continue to allow this to happen. Mr. Chairman, I yield back."

[16] " I am really happy that you brought that up because I, obviously, have taken some very tough stands against the Chinese Government and I just--our greatest ally in the fight to create a better world is--are the people of China. And this is all--in fact, the motive here between Chris and myself, we are motivated by--we want to help the people of China. So thank you for making that distinction. We don't want anybody to think otherwise. By the way, but about communism--you know, I have studied communism from the time I was a kid. I mean, I actually read Marx and Lenin and all these things. This is certainly not a Marxist government there. I mean, when you have--this is more like a fascist--a Leninist fascism. But it is not--it is no longer the idea that they are going to create this new man, as Marx was suggesting, by ridding us of this profit motive and property rights to own things. But it is fascism of some kind."

[17] " Would you please all talk to your friends in the majority party and tell them that? And I am not trying to be facetious here, but it is very, very frustrating when I--I think these are good people. Ninety percent of the people in Congress are really good people on both sides of the aisle. And yet I think we have just somehow got to come to terms here with the fact that we are putting our country in a very precarious position, and we are passing on these tax cuts that we are taking, we are passing on this huge, huge debt to our kids and grandkids, which I think is immoral. We should not be doing that. To me, fiscal responsibility is a family value and should be a national value as well, and we are just doing the wrong thing here. Any thoughts about what we can do to try to reimplement this rule?"

[18] " But it is absolutely critical that this administration take serious our enemy. America needs to know its enemy. It is radical--it is a bunch of radical folks all over the world, who want to destroy it. They are going to continue to attack us. Whole body imaging is not going to prevent, and even the canines are not going to prevent, bombings. There is no way unless we search every body cavity on every person who wants to come into this Nation. But we know one of the big, glaring, flashing dots is radical Islam. We have got to start focusing upon that. There is absolutely no question about that. Our people are going to die. Those who are worshipping at the altar of political

correctness are going to--that worshipping at the altar of political correctness and not profiling our enemies is going to result in killing American citizens. With that, Mr. Chairman, I yield back. My time is up."

[19] " Mr. Chairman, I am just having a great time. My Democrat colleagues are sitting up here and espousing all these things and haven't cracked a smile once. This is hilarious. I mean, you have rigged, wired, and stacked the system, and I compliment you. You have got a Republican President to go along with you and sign the turkey into law. So now we are stuck with it. But, I mean, this is just ludicrous. The top four donors of 527s--you know, we talk about getting money out of politics. They have given over \$71 million to these groups. Republicans, they always tell us how we have got millionaires. Our guys are too cheap to give that kind of money. Where do you find these people? I wish you could tell me. I would love to know because we don't come close to that. You have done it magnificently. You have done it with the cooperation of some Republicans. It is just yet another illustration of how the law has been consistently abused in this area by one party using it as a club against the other. You did it to us. You did it well. I compliment you. We will eventually figure it out, maybe. That is what happened with the soft money. You guys got going on that first, and then we finally figured it out and got pretty good at it, and so it was time to change the rules again. In one of the sweet ironies, though, which I love of campaign finance regulation, there is always the unexpected, and the unexpected was this tiny little 527, the Swift Boat Veterans, which raised a miniscule fraction of money compared to these big things that we have seen up on the screen. But their message broke through, and it got Bush reelected. That was sweet. I did enjoy that. And maybe it will happen again. But it happened in spite of your best efforts. You know, all that rhetoric we heard about we have got to get the money out of politics, and that was the whole premise of Shays-Meehan, and this is the result, \$71 million by the top four big Democrats here in 527s."

[20] " No, I am not going to yield, because I got to tell you something. There is such a disconnect in this town with the way the real world works. General Motors does not need the help of the taxpayers to subsidize their cars. You want to move a market? Throw \$7,500 on a Cruze. Not from the General Motors, from the taxpayers. You want to see that needle jump? You want to put thousands of people back to work? You can do it in a lot of different ways. But you know what? Stop taking it out of my wallet. And I am deeply offended by the attitude down here that somehow this merry-go-round is going to continue to spin and there is no consequence. There are a hell of a lot of important things that happen, unintended consequences, by people who have never done it, don't have any skin in the game, and are spending taxpayer dollars. That is absolutely ridiculous, and that is something we have to stop doing. This has nothing to do with Mr. Akerson. This has nothing to do with General Motors. This has to do with an administration that can't keep its fingers out of pie."

[21] " They did. The Interurban. One of the disappointments--and I don't want to overemphasize this plan business, but one of the disappointments I have had as a Republican was that we always--in one case, President Bush gave zero, as Ed mentioned. And in other cases, we always had to fight to give Amtrak enough to fail. I mean, we always nibbled around the edges; \$800 million, a billion, a billion 2, a billion 4, never enough to take care of your backlog or never enough to put new rolling stock on the tracks. And part of the plan has to be, we are either going to make the societal decision that we are going to be in the passenger rail business, or we should get the hell out of it and close down Amtrak and be done with it. But this sort of nibbling along is ridiculous. I for one think that a trillion used to be a lot of money around here. It is not so much any more. And I for one say spend the trillion, get this thing done, and get it done right. You know, I think this hearing has demonstrated, and I am glad we are all in agreement that this pilot line is going to be from Chicago through Toledo to Cleveland, and so we don't have to worry about it anymore."

[22] " People got upset about those things, because they can comprehend figures like that. But when we hear these billion dollar figures today--we are dealing with \$277 million misspent, and nobody really is upset about that, but they should be. They should be shocked. And people in charge of this should be ashamed, embarrassed; and we should be bending over backward to do everything possible to make sure that this type of misspending or misappropriation of funds or this scandalous waste doesn't happen again. But because it's not coming out of anybody's pocket except the poor taxpayers, nobody is really going to get upset about it. But I commend you for holding this hearing, and I hope we can hear something about how we can keep this from happening in the future. Thank you very much, Mr. Chairman."

[23] " You know, I think that is such an incredibly subjective kind of punishment, and if we are going to be relying on reputations and history writers, et cetera, rather than concrete sanctions, as a way, we are in deep trouble here, I think. What one may think is a horrible rebuke, and something that will change behavior, to another person is just, you know, nothing. Anyway, the difference between, you said that the difference between major league and minor

league is just a few days. If you think it is so important, and you have complete control over those minor league players, why is it that even there, that they penalties are as light as they are? I mean, if you mean zero tolerance, if you really mean zero tolerance, in a setting where you control, and which is often the entry point for young athletes, why don't you do more there?"

[24] " It is the minority that always gets us in trouble. It is that one or two outside the norm that causes everyone to have a blemish. As we are bringing this bill forward, I want these things to be mindful, because if you are one of the 5 or 10 percent that have had a horrific experience, then you are somewhat loathe to place this opportunity on someone else because it does sting and it is painful and it is argumentative and it is debilitating, and particularly when it is not your fault, it is even more of this. You are thinking to yourself that poor person who really went and charged on my Target or--not even on my Target--they went and charged and got the merchandise. They are scot free. They are enjoying the goods that they have stolen virtually from Target and nobody is chasing them. The police do not have time for it. There is no opportunity to go after those bad people. The poor person in my end of the world who is wrongly used as the victim ends up having to deal with it. So, I guess my caveat is I am willing to pursue and proceed, but Ms. Wu brings some very important cogent points to bear, and I hope we all use those as we move this legislation forward."

[25] " I guess, how realistic is that? If you're a dictator who--you became the dictator because your father died, so you've always been in charge. Your father was a ruthless person. Do you think then he's going to think well, you know, I think I'll take my chances here and let all these people that I've ruled very cruelly for all these years take me to court, because I think they're going to be very generous in their dictates? Or do you think he's going to kill 70,000 people, do you think he's going to murder people, as many as he can, and run a war of attrition? I think this is one of the issues that we really have to rethink. I mean, I know it's not political to say that but, you know, is it really worth the murder of 70,000, 100,000 people, tanks mowing them over, being bombed from the air, mostly children. In a war, children always lose. Or do you let one really nasty, terrible, horrible human being potentially escape? I don't know. Maybe they had it right for centuries before we had our more strict dictates in law. I put it out there, because I've got to tell you, I thought that this is probably what Hosni Mubarak was going to do, also. I thought he would roll the tanks. He seemed to be more of a human being at the end and didn't do that, but this guy, of course, did. I don't know where else would he go? If he's going to be tried by his own people--Ambassador, go ahead. I'm sorry."

[26] " No, sir, I will not. And I think that is shameful. I think it actually contradicts exactly what you think you are here to testify about. And I think it taints the value of this panel that could have been a thoughtful discussion but it is not. This is a panel designed, with your conscious participation or not, to try one more time to embarrass the President of the United States and his administration by overstating an issue which is sacred to all Americans, religious freedom. But, of course, in order to do it, we have to, in an almost Stalinist-like fashion, have signs of Democratic icons to rub Democratic faces in it, as if those icons would be on the same side of this dispute today. But since they are all deceased, it would be hard to gainsay that. And so I say to you, as a member of this committee who actually shared the concerns you say you have last week, that I think this is a shameful exercise, and I am very sad you have chosen to participate and be used the way you are being used, just as you were in the previous questioning, as if people are going to jail over this. Shame. Everybody knows that is not true. Catholic Hospitals supported the compromise. They are not afraid of closing down hospitals in America. If we want to have a legitimate debate about, you know, where is the right boundary, let's have it. But overstating it and making charges that are just outlandish and, frankly, beyond the pale serves no purpose other than political demagoguery in an election year. And men and women of the cloth, it seems to me, ought to run, not walk, away from that line. I now yield to my colleague from Connecticut, Ms. Rosa DeLauro."

[27] " And I worry about it, Madam Chair, that the fact is the big guys get away with murder while the little guys like Panama are waiting in hand with everything we have ever asked from them, but because they are so little we don't want to bother with the negotiations, and I just think it sends a really wrong message. I think any parent would never accept the same thing in their family, and I don't think in the international community we should accept it, either. Thank you very much."

[28] " It is baffling, is it not? Representative, I mean, I think there is some confusion sometimes. We think that the government is somehow just this benevolent monarch that showers on the people all these gifts. But the reality of it is every single penny that the government uses comes out of a hardworking American taxpayer's pocket. Unfortunately, only half of us are paying taxes anymore. Please explain, because I think these types of hearings allow the community to understand. Every single penny that Ohio needs, where does it come from?"

[29] " I would love this. It is amazing to me that your family was the only one who worked in all of America, that none of us did. See, the difference between people who think that homeownership should be left to the private market and people like me who think the government has a role to play to ensure that the middle class can afford homes because nobody else has ever done it in the history of the world except when government got involved, that is the only time it has ever happened. The reason I think that is because people like me would never have gotten into the middle class. We would still be driving trucks for vegetable farms that don't exist anymore. And I know that is fine. That would have served your purposes just fine. But most of my constituents would never have owned a home. And I personally think that is what has made America great. That is how my kids went to college, remortgaging the house. Now I know that many people in the financial services world don't have to do that. Many people, most people do. And that is why I came today. I am not opposed to trying to narrow some of these things down. Nobody wants bad mortgages given out to bad people or people who can't afford it. That is ridiculous. It kills the whole system. But to sit here and pretend or argue--"

[30] " Well, I can only operate from my own personal experiences, but if you make it hard enough on people, and if we are going to call this a war on drugs, if we are at war with people, then we do whatever it takes to get the job done, and we don't coddle the people and we don't say, you know, you have been a misunderstood child, you know, you have killed our kids and you are ruining our economy and you are hurting our people, and, therefore, we are going to punish you, and we are going to severely punish you. We take that policy in the little county that I am from. We have the lowest crime rate in the State of Texas. Now, do you feel that what happens to these people when we interdict and catch them is harsh enough to keep them out of this very lucrative trade, or do they just serve their time, 22 months, and get right back in the trade?"

## **B) Non-grandstanding (Bottom thirty statements in a descending order):**

[1] " Thank you. Mr. Cox, let me ask you a couple of questions, kind of process questions. The payments are done quarterly. Is that correct?"

[2] " Thank you. Before I ask my question and Mr. Chairman, I ask unanimous consent for inclusion in the record the testimony of Charles M. Auer pursuant to the previous agreement with you all and members maybe they are able to submit questions to him for the record."

[3] " That concludes this hearing. Without objection, all Members will have 5 legislative days to submit additional written questions for the witnesses and additional materials for the record. The gentleman from Virginia?"

[4] " Without objection, so ordered. Since your written testimony has been made a part of the record, the subcommittee would request that you limit your oral testimony to 5 minutes. Mr. Cannon, you may proceed."

[5] "Well, let me ask a question. The more machines that are built lowers the cost of production. Can somebody elaborate on that quantitatively? Can you do that, Dr. DeSimone?"

[6] " Okay. So you are asking for, what is that? What percentage increase are you asking off of your current expenditures?"

[7] " Without objection, so ordered. Since your written testimony has been made part of the record, the subcommittee would request that you limit your oral testimony to 5 minutes. Welcome. And, Ms. Hedlund, you may proceed."

[8] "Well, let me ask you a quick question again. Is there any existing vehicle for that type of collaboration now, any multinational agency or anything that you know of? Dr. Greer."

[9] " I call the subcommittee back to order. We will begin our round of questioning, 5 minutes, to Mr. Lamborn."

[10] " Thank you, sir, and I'll begin the questioning. We'll start the clock with 5 minutes. Mr. Robotti, a question for you. How much do you rely on Section 404, in terms of making decisions about companies? What is your reliance on Section 404?"

[11] " So let me ask you a couple of questions about current FIFRA process. Under the current FIFRA implementation process are pesticide applicators required to be trained?"

[12] " And you are familiar with that? The questions I had asked you pertaining to that you could answer for me? Is that correct?"

[13] " Okay, and one more follow-up question to Ms. Hollein. Do you think end-users pose a systemic risk?"

[14] " Mr. Fields and Ms. Schiffer, we thank you for your testimony. Members may submit questions in writing. Without objection, the hearing record will remain open for 60 days for members to submit written questions and provide extraneous material for the record. Without objection, so ordered. Thank you for your participation."

[15] " Without objection, so ordered. Since your written testimony has been made a part of the record, the subcommittee would request that you limit your oral testimony to 5 minutes. Dr. Robyn, you may proceed."

[16] " Also in your testimony, you note that EPA could implement a prioritization process which specifies timelines for Existing Chemical Review. Could you elaborate on the benefits of a prioritization process and how it would improve "

[17] " Last, I would like to ask--we have more questions, but we will submit them in writing to you and ask you to get back to us--but according to your calculations, what would the cost be of enacting H.R. 2774? Do you have an estimate of that?"

[18] " I appreciate that. Let me ask very quickly just a couple of questions. Ms. Olsen, the Shirley and Spiegler plan, if I understand it, does it assume that 5 percent of the 12.2 percent is transferred to a private account, and then there is a mandatory supplemental contribution of 5 percent?"

[19] " Thank you very much, Mr. Chairman. I guess my question is directed to Mr. Hughes and Mr. Loman. Your testimony indicates that the Department of the Interior has some vague concerns with the prohibition on rights-of-way contained in H.R. 2909. Can you be more specific as to what those concerns are?"

[20] " Thank you. Mr. Kosiak, you have provided very helpful testimony. I will also ask unanimous that all members may have 7 days to submit a written statement for the record. Without objection so ordered."

[21] " Dr. Reicher, let me ask you a question if I could. You were at Google previously? Is that correct?"

[22] "For our second panel, we have the following witnesses: Mr. Mitch Bainwol, President and CEO for the Alliance of Automobile Manufacturers; Mr. Kirk Steudle, Director at Michigan Department of Transportation; Ms. Laura MacCleery, Vice President of Consumer Policy and Mobilization at Consumer Reports; Ms. Ann Wilson, Senior Vice President at the Motor and Equipment Manufacturers Association; and Mr. Gary Shapiro, President and CEO at the Consumer Technology Association. We do appreciate you all being here today. Mr. Bainwol, why don't we begin with you? You are recognized for 5 minutes for an opening statement, please."

[23] " OK. Dr. DiPentima, let me ask you, can you comment on the impact of the Trade Agreements Act on the IT community? Are IT companies forced to manufacture the same items in separate facilities because of the TAA?"

[24] " Could you please submit for the record a summary of the functions of data hub that may relate to an earlier question I asked? Could you do that for me, please, sir?"

[25] "Okay. One other question. Ms. Cohen, you heard the previous discussion with regard to definition of U.S. personnel. Do you want to share your perspective there?"

[26] " Dr. Boskin, I wanted to ask you, how would you go about assessing a risk adjusted rate of return? Mr. Cavanaugh in his written testimony talked about an adjusted risk rate of return. What would your comments be on that, and then I want to ask also Mr. Cavanaugh?"

[27] "Thank you. I would ask unanimous consent that the three statements previously submitted to the committee be entered into the record. Without objection, so ordered. Mr. Waxman, do you have any followup questions?"

[28] " Without objection, the witness's full statement will be inserted into the record. And, of course, each of you all are summarizing your statements. I want to thank Dr. Barth. At this time, our second witness is Ms. Janice Ayala, deputy assistant director of the Office of Investigations at United States Immigration and Customs Enforcement at the Department of Homeland Security. Welcome, Ms. Ayala."

[29] " Now, moving back to previous items of discussion, the SMRs. Just in general, how many applications do you anticipate receiving over the next couple of years, Dr. Lyons?"

[30] " OK. Thank you. And, Mr. Bardee--or, excuse me, Mr. Cauley, you noted that FERC has recently approved the NREC Critical Infrastructure Protection Version 5 standards which become enforceable on April 1 of next year, related to cybersecurity. First question is, can you briefly expand on the new Version 5 cybersecurity standards?"

### Analysis of the Most Frequent Words

In order to substantively validate the grandstanding score, I analyze the most frequent 200 words of the statements in the bottom quartile and those in the top quartile after removing the most frequent 50 words.<sup>23</sup> Table 4 presents the list of words in a descending order by their frequency. The words that are overlapping in both sides are in italic. Although the overlapping words may seem less informative than the words exclusive in each side, as long as the frequency of the overlapping words is markedly different between the two lists, they are informative as well in capturing the substantive differences between grandstanding and non-grandstanding statements.

The most frequent words in the statements with grandstanding scores in the top quartile suggest that grandstanding statements tend to focus on “*problem*”(-s) and “*concern*”(-s) frequently mentioning “*presid*”(-ent) and “*administr*”(-ation) using emphasizing adverbs and adjectives such as “*realli*”, “*lot*”, “*even*”, “*sure*”, “*everi*” and “*best*” and opinion-related expressions such as “*mean*”, “*believ*”(-e), “*agre*”(-e), “*must*” and “*critic*(-al)”. While these statements do talk about “*bill*”(-s), “*law*” and “*polic*”(-es) on real issues such as “*secur*”(-ity),

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<sup>23</sup> Without removing these top 50 words, about 30 most frequent words in each list are almost identical making it hard to contrast the features of the two types of statements. The top 50 words are as follows: mr, go, thank, think, know, can, just, one, want, get, state, question, year, chairman, time, peopl, like, hear, work, us, need, make, now, say, today, look, issu, also, program, well, come, ask, committe, thing, much, use, member, way, take, right, talk, govern, import, nation, back, new, mani, feder, see and system.

“tax”, “job”(-s), “econom(-y)”, “*health*” “care”, “energi”, “drug” and “educ”(-ation), etc., note that these words are highly related to the most salient issues that tend to divide the country by party lines.<sup>24</sup>

On the other hand, the most frequent words in the statements with grandstanding scores at the bottom quartile suggest that the opposite end of the grandstanding style is featured by “*statement*”(-s) on “*record*”(-s), “*inform*”(-ation) and “*report*”(-s) as well as questions “*requir*”(-ing) “*answer*”(-s), “*comment*”(-s) and “*expla(i)n*”(-ations) from “*wit*”(-nesses) “*testify*”(-ing) based on objective figures presented in “*number*”(-s), “*percent*” (-ages), “*rate*”(-s) and “*rank*”(-ings) to check if the knowledge they have is “correct”. Furthermore, these statements often talk about “*technolog*”(-y) and “*research*”-related “*term*”(-s) such as “*data*”, “*studi*”, “*author*”, “*estim*”(-ates), and “*assess*”(-ment). However, note that the expressions typically used for procedural statements such as “*next*”, “*okay*”, “*5*”-“*minut*”(-e) time limit and “*without*” “*object*”(-ion) are also captured in this list. This is because some procedural statements containing more than 80 words still remain in the data and they are not grandstanding statements.

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<sup>24</sup> Although some of these words also appear in the list of the frequent words in non-grandstanding statements as shown in Table 4, the words I pointed out rank relatively higher in the list for grandstanding statements. For example, “*problem*” is the second most frequent word in the latter while it ranks the 190<sup>th</sup> place in the former. The same applies to the discussion on the featured words in non-grandstanding statements presented in the following paragraph.

**Table 4. Featured Words in Grandstanding vs. Non-grandstanding Statements**

Grandstanding	<p> <i>countri, problem, realli, congress, said, tri, concern, american, good, system, help, secur, lot, even, fact, put, first, job, money, administr, provid, bill, law, point, last, mean, busi, forward, may, understand, service, someth, hope, percent, believ, care, fund, cost, sure, health, part, unit, continu, act, depart, presid, public, happen, area, number, give, done, got, kind, interest, made, certain, appreci, inform, chang, wit, respons, million, support, report, legisl, agenc, whether, differ, hous, protect, two, seem, process, great, everi, plan, polici, abl, tell, increas, move, day, budget, find, community, actual, deal, compani, subcommitte, world, case, place, tax, littl, call, effort, particular, better, statement, pay, clear, billion, market, address, u., includ, start, develop, industri, regul, must, still, discuss, effect, opportun, agre, general, small, energi, creat, requir, person, offic, secretari, open, comment, anoth, reason, record, might, district, term, benefit, yield, allow, live, mayb, famili, long, home, without, drug, rule, propos, end, econom, sinc, order, level, keep, economi, colleagu, account, america, author, major, product, repres, meet, school, around, side, dollar, hold, answer, technolog, privat, best, spend, decis, exampl, resourc, current, panel, ago, forc, oper, futur, heard, impact, financ, real, local, yet, bring, manag, focus, pass, result, educ, insur, cut, togeth, consum, direct, critic, invest, addit, individu</i> </p>
Non-grandstanding	<p> <i>record, ms, dr, statement, wit, okay, correct, minut, panel, answer, next, may, first, offic, submit, open, inform, understand, 5, provid, report, cost, object, servic, pleas, requir, comment, part, depart, percent, appreci, without, ok, general, director, give, number, last, process, addit, fund, plan, agenc, gentleman, welcom, second, two, made, system, differ, respons, order, includ, mention, secretari, start, consent, specif, current, unanim, written, regard, secur, term, littl, help, yes, act, associ, manag, chair, presid, quick, point, million, recommend, believ, tell, u., subcommitte, might, area, said, request, concern, compani, rule, law, increas, administr, budget, project, follow, actual, review, data, begin, develop, bill, propos, abl, respond, oper, place, whether, forward, good, base, legisl, standard, impact, kind, move, within, case, chang, contract, busi, receiv, studi, author, day, guess, sir, direct, implement, discuss, relat, bit, address, effect, research, testify, technolog, final, mayb, polici, anoth, health, put, coupl, support, assist, rate, meet, billion, level, indic, turn, agre, mean, done, public, sinc, regul, proceed, chief, risk, explain, product, tri, rais, allow, call, determin, estim, interest, line, 10, 1, awar, three, 2, industri, posit, share, privat, earlier, unit, repres, sure, employe, someth, letter, vote, execut, refer, round, center, problem, benefit, heard, avail, improv, possibl, assess, list, rank, board, consid</i> </p>



## Online Supporting Material

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## **1. Grandstanding as Partisan Messaging and Position-taking**

This section further justifies the definition and coding rule of grandstanding from both theoretical and data analytic perspectives and compare it to the usage of the term in the previous literature. Political grandstanding in general is a broad rather vague concept to define and measure. Some grandstanding activities may have a position-taking aspect, others may not. Also, not all position-taking statements are not grandstanding statements.

However, this study focuses on studying how message politics is exercised in committee hearings, and thus in this context, grandstanding can be narrowly defined as sending partisan messages. Existent literature on message politics define partisan messages as promoting partisan themes and policy goals while tainting the other party's image (Evans and Oleszek 2001). Therefore, sending partisan messages essentially involves position-taking statements such as criticizing or praising a person (e.g. the President, the head of a government agency, or a congressman) or an institution (e.g. a party, the party leadership or a government agency) and taking a position on a policy, as described in my coding rule. Furthermore, giving a speech intended to send partisan messages for a framing purpose is theoretically different from giving an opinion as part of constructive deliberation on a policy. Thus, my measurement of grandstanding can be alternatively understood as a measurement of partisan messaging which involves position-taking with a political intention. This is the logic behind my coding rule for grandstanding statements.

When I analyze how this coding rule worked out in measuring the concept of grandstanding (or partisan messaging), it turned out that my measurement of grandstanding successfully captured the nuanced difference between position-taking statements presumably intended for grandstanding which tends to use aggressive, emotional, dramatic words and

position-taking statements which tend to use emotion-free words. This can be confirmed by comparing the top 30 statements that receive highest grandstanding scores to the bottom 30 statements with low grandstanding scores which are presented in the Appendix

Below present more direct examples providing evidence of how the measurement tends to assign higher scores to position-taking statements with strong nuance of grandstanding than to position-taking statements without. These are four examples of position-taking statements of which the grandstanding scores are 100, 80, 60 and 40:

Example 1) Grandstanding score: 100

"And even the environmental movement should realize that the worst polluters in the world were the Socialist and Communist governments. People take better care of their own private property than is taken of property that is in public ownership. I haven't been to this area, but I bet these people take good care of their property. It is so sad to think that a lot of these people, or most of them, are people who came from Cuba where land was confiscated and taken away from them by a Communist dictator, and now they come to the United States, a country that is supposed to be a free country, yet these people are coming all the way from south Florida to Washington, DC, to try to defend their little piece of the American dream. The unbelievable thing is, this is happening all over this country. These liberal, left-wing, Socialist, big-government types think they can run everybody's life better than they can themselves. So they don't mind coming in and doing a really cruel thing and taking away this property. And I just think that we need to speak out against it and that it needs to stop, or at least hopefully we can slow it down a little bit. Thank you."

Example 2) Grandstanding score: 80

"Thank you so much. Mr. Commissioner, in reading your testimony--and let me quote--"The Supreme Court originally approved the use of disparate impact theory in the employment context. Unfortunately, the theory has metastasized and is being used in an area of law for which it was never intended. Rather than

being used as a way to prove disparate treatment in cases where there is no smoking gun, it is now being used in a way to achieve racial balancing across society..." I find it amazing, and in light of our history of disparate treatment in policies and the impact and what we just heard from Mr. Parker somewhat inappropriate, when I think of the word "metastaticize." Deadly cancer. Something that spreads, which is negative. And I guess, I am curious as to why you would use a term to say this is equivalent now to a deadly cancer that we are looking in this, especially when our chairman and others have said there is no place in the marketplace for discrimination. He didn't say intentional, unintentional, or as a result of disparate impact. We have come a long way from red-lining and from the prejudices, and it also made me think--and you can respond to this--that when you said there is no smoking gun. I think for many of us who grew up during this era or time, I don't care if it is the little lady with gloves and a purse who is standing there and denying me a right because of my skin color, versus a big smoking gun. Could you express to us why you chose those words?"

Example 3) Grandstanding score: 60

"That is pretty much what I am talking about, yes. Well, this subcommittee understands the importance and the necessity of having your forces and your troops and having them trained properly and equipped properly. You will find if there is something that you would like to slip under the table, a list of things that you need and aren't in the budget, let us take a look at it because we are very supportive. We are running out of time, so I want to go to the other subject that I have talked about. General McKinley, you and I have discussed this in private meetings. And that has to do with the aviation assets for the National Guard in the respective States, and we haven't talked too much today about how the Governors have all written to this committee and have written to the Armed Services Committee complaining about the loss of their aviation assets. I thought I was going to maybe just make a comment--maybe I sound too serious--but we were really impressed with what you are doing with the simulators. And Mr. Dicks and I are very strong supporters of simulators. We have both used them, and we like them. But I am just wondering, if, when you need that C-130 in Florida for the next hurricane, are you going to use a simulator to do what that 130 should do? And that worries me. Other members of this committee have expressed that concern to the Air Force, to Secretary Donley and General Schwartz. I don't think we have made much progress, but it just

seems to me like we are eliminating an asset that may be more important for the State function, the domestic function, as opposed to the overall military function. But it is something that is real. I have gone with our adjutant general into a hurricane situation where the National Guard is there on the scene and had to get from Hurricane Ivan, for example, that wiped out Pensacola Air Station, and they had to get back to St. Augustine because the next hurricane was heading there. They were able to get there quickly with the aircraft. No aircraft and they would be traveling in trucks or Humvees, and the hurricane would be over. Anyway, that is a concern. Many members of the committee have expressed concern on that very subject. And I know, General McKinley, I know where you stand on that, and I am not going to get into that any further. This has been a great hearing.”

Example 4) Grandstanding score: 40

“The point is that when taken together, the transportation plan is going to provide for the decommissioning of roads in these inventoried roadless areas and unroaded areas and that is the purpose. I guess I have some concern about the insistence on looking at these as independent initiatives because they cannot; they really have to be taken in the context of a larger initiative. In fact, I think we have a memo, an internal memo from Chief Dombeck that talks about a strategic plan of the Forest Service and how these individual elements are part of that comprehensive strategic plan.”

The first example statement with the grandstanding scores at 100 and 80, respectively, tend to use words that are more aggressive and emotional for criticizing liberals or expressing discomfort with a witness’ view of the situation of how anti-discrimination law is used for employment, respectively. While the third and fourth statements which received the grandstanding scores at 60 and 40 respectively also expresses concerns on a policy issue, but they do not appeal to emotions but rather base their arguments on their experience, facts or a policy memo relatively more hinting serious policy discussion.

In addition, in previous literature on political grandstanding, the term “grandstanding” was used to indicate politicians’ position-taking speeches or actions. For example, Park (2017)

defines it in a context of committee hearings as speaking in favor of one policy alternative that the member prefers over the other or choosing witnesses to testify in favor of it in order to signal or advertise his policy position to constituents or to claim credit for working on a policy issue they care about; Slapin et al. (2018) define it as giving a speech justifying one's vote rebellious against the member's own party in order to emphasize/highlight his position to constituents. Thus, the definition and coding rule for grandstanding in this study is well aligned with existent studies on grandstanding.

## **2. Manual Clean-up of the Data**

Most of the cases that required manual clean-up were due to the following reasons. First, the same last names of a committee member and a witness makes a witness treated as a committee member. Second, a few of the cases are attributed to the mismatch between these committee membership datasets and the actual committee members as listed in the transcript (e.g. For instance, based on the committee membership file for the 113<sup>th</sup> Congress provided by Govtrack.com, Allyson Schwartz and James Renacci are missing in the member list of the Budget Committee; Robert Andrews is missing in the member list of multiple committees he served on). This may be because of some rare instances of changes in the committee membership and chairmen between congressional sessions. Also, the hearing transcripts have errors such as "Tom McClintock" sometimes coded as "Clintock" inducing a mismatch between the transcript and the committee membership data. In addition, special foreign character in members' names (e.g. Raúl Labrador) has been broken and caused another type of mismatch. Third, the automated code sometimes fails to distinguish subcommittee hearings from full committee hearings

rendering the process of detecting a subcommittee chair's identity and retrieving his member information (e.g. govtrack number) to fail and making him treated as a witness.

### **3. Sampling to Construct the Training Set**

This section explains how the 3000 paragraphs were sampled from the data. The sampling occurred twice: Once when I only had hearing transcripts from the 114<sup>th</sup> Congress completely cleaned up, and then once more after I expanded the dataset back to the 105<sup>th</sup> Congress as I further develop the programming codes that preprocess and clean up the transcripts for each Congress.

The first sampling was conducted as follows. I randomly sampled 50 hearing transcripts from the 114<sup>th</sup> Congress, preprocessed the transcripts by decomposing long statements into paragraphs, and merging them back with adjacent short paragraphs if they are too short for workers to make decisions on, and then randomly selected 1000 preprocessed paragraphs that contain from 50 to 120 words.

The length of the training texts was decided based on the example texts that Montgomery and Carlson (2017) used and presented in their article to validate the SentimentIt software assuming that they have chosen the data most suitable for the SentimentIt application. These examples are as short as 20 words and as long as 128. However, after careful reading of a sample of paragraphs, I decided that paragraphs shorter than 50 words contain too little information to make decisions on and should not be used.

The second phase of the sampling was conducted as follows. I randomly selected 2000 hearings from the 105<sup>th</sup> through 114<sup>th</sup> Congresses after excluding the 50 hearings from the 114<sup>th</sup>

Congress initially used for sampling. Then, I preprocessed the transcripts using the same procedure and selected 2000 paragraphs. However, in order to have the training set to represent wider range of contexts of hearings and avoid it to overrepresent some excessively long hearings, I conducted random block sampling so that one paragraph is randomly chosen from each of the 2000 hearings.

One may concern if the human coders have enough information to determine whether a paragraph in the training set is a grandstanding statement or not because it is often assumed that contexts matter to make such a judgment about grandstanding, but the contexts may not be fully contained in a paragraph-long statement. Below I explain why this may not be a problem.

First of all, I devised and provided coders with a specific coding rule which defines what grandstanding means in this study: That is, criticizing or praising a person or an institution (e.g. a member of Congress, the President, government official, a party, party leadership, administration, or a federal agency), taking a position on a policy, or asking a question of a witness just to give her a hard time. Despite that grandstanding is a broad and rather vague concept in general, the way grandstanding is defined particularly for this study is very clear, although it can be considered a narrow definition of it. Therefore, even a single short sentence can be determined easily whether it belongs to one of these three categories collectively defining grandstanding or not. For example, below are the paragraphs included in the training set.

Example 1)

"So, to that end, Mr. Bagdoyan, I would like to begin with you. Since its peak of 9.4 percent in 2010, the improper payments rate for the Medicaid program has steadily decreased, reaching a low of 5.8 percent in 2013, or \$14.4 billion. That number rose to 6.7 percent in 2014, or \$17.5 billion. Is that right?"



Example 2)

"And that is why it is the Secretary of State who ought to have the whatevers to come before Congress and defend this decision. Because it puts you in a terrible position. The Secretary made these decisions. Only he can indicate why he made them. You don't know why he made them. I know why. You don't call me as a witness, but if I was called as a witness I would say he made them because he wants TPP to go forward and is willing to throw the Trafficking In Persons Report out the window. But I am not testifying to that because I am sitting up here. You haven't asked me to sit down there."

Although they are short, it is obvious that the first one belongs to none of the three categories defining grandstanding. However, the second clearly criticizes the Secretary of State belonging to the first category. It does not matter whether the coders understand what the TPP is and which action the Secretary of State took on which country. They still can code it as grandstanding.

#### 4. Instructions for Workers

If you finish this training module with a passing score, you will be qualified to complete HITs posted by the requester **SentimentIt** with the title **Compare Congressional Hearing Speeches**.

Task: You will be presented two paragraphs from the House representatives' speeches during congressional hearings. Your task is to choose the paragraph that is relatively *more opinionized/grandstanding or less factual/information-seeking*.

To give you some background knowledge, congressional committees hold hearings for various purposes: to monitor executive branches, to collect information for legislations, to approve government nominees or budgeting plans, etc. A congressional hearing proceeds as follows: It starts with the committee chair's opening speech followed by other committee members' and witnesses' opening speeches. Then, the chair proceeds to a Q&A session where committee members ask questions to witnesses. Long speeches are broken down to paragraphs. Thus, some paragraphs you will compare can be part of a longer speech.

A speech is an **opinionized or grandstanding** speech if it does one of the following:

1. Denouncing (or Praising) a person or an institution (e.g. a party, its members, president, a government agency, a witness or others)
2. Taking positions on a policy by approving or disapproving it (which includes subjective interpretation of a policy-relevant situation)
3. Asking questions just to embarrass or attack a witness

E.g.) Denouncing Republicans:

"Finally, far too much effort has been spent by the Republicans to weaken our regulatory apparatus, whether through underfunding our regulators, relentlessly pursuing or pressuring them to go soft on rules, or injecting unrelated Wall Street giveaways into must-pass government funding bills."

E.g.) Praising or credit claiming for Democrats:

"Once the economy was stabilized, Democrats worked diligently on legislation to restore responsibility and accountability to our financial system and instill confidence that we have the tools in place to protect Americans from another crisis."

E.g.) Denouncing a policy and a related government agency:

"Another product of Dodd-Frank is the Consumer Financial Protection Bureau, the CFPB, which was tasked with protecting consumers of financial products and services from discrimination. Ironically, it has the worst track record of all Federal financial agencies of EEO complaints, proving the agency is inept at best, or negligent at worst, at protecting its own employees from discrimination and retaliation."

E.g.) Attacking a witness (grandstanding):

“Mr. Rubin, thank you for your time today. I thought it was ironic that you are talking now in terms of the timing of these things, and that is what has everybody concerned, but you are actually speaking in seasons of the year. With some happiness, you said, “We have produced two witnesses since the fall.” Isn't that ironic, that you are not speaking in terms of days or weeks or even months, but you are characterizing the timing of the Department of State in terms of seasons of the year?”

A speech is a **factual or information-seeking** speech if it is one of the following:

1. Objective description of a policy-relevant situation
2. Asking witnesses questions for fact-checking or expert opinion-seeking

E.g.) Objective description of a situation:

“Research from Cornell University found that the foreclosure crisis has resulted in an increasing level of resegregation in many urban areas. Several institutions confirm the foreclosure crisis likely had substantial negative impacts on child well-being, with multiple moves and marital discord leading to anxiety, depression, and poor performance in school.”

E.g.) Asking witness' opinion:

“So you cited in your testimony, I believe it was a 77 percent drop in primary dealer inventories of corporate bonds since the crisis. Can you expound on your views of how this could create greater instability in our markets?”

A speech is **neither opinionized nor information-seeking** if it falls into the following:

1. Procedural remarks
2. None of these mentioned above (No content)

E.g.) Procedural remarks:

“Our witnesses before us today are the Honorable Ken Wainstein. He is the Blue Ribbon Study Panel on Biodefense panel member. Additionally, Dr. Gerald Parker, the Blue Ribbon Study Panel on Biodefense Panel ex officio member.”

E.g.) None of these mentioned above (No content)

“Well, Mr. Rubin, I hope you thank Mr. Smith after the hearing for giving you a little bit of a break. I am going to ask you a series of questions now to follow up with the chairman about the processes.”

Therefore, consider that speeches can be placed onto a continuum of which one extreme end is opinionized/grandstanding speeches and the other extreme end is factual/information-seeking speeches. In the middle of the two ends, speeches that are neither the two including procedural speeches can be located.

For each HIT, you will see two speech extracts. Your task is to read both and select which of the two speeches is **more opinionized/grandstanding or less factual/information-seeking**. That is,

If Speech A is...	If Speech B is...	Then, choose
Grandstanding	Information-seeking	Speech A
Grandstanding	Procedural	Speech A
Procedural	Information-seeking	Speech A
Grandstanding	Grandstanding	The one that is <b>more</b> explicitly opinionized/grandstanding
Information-seeking	Information-seeking	The one that is <b>less</b> explicitly information-seeking/factual

It is important that you read each speech extract carefully, and that you judge each by the standards listed above and the information in the text. In comparing the two paragraphs, DO NOT make your judgments on your own knowledge of a person or a policy in question, on text extracts from previous HITs in this exercise, or on definitions of opinions different to those listed above. Note that not all questions are information-seeking but can be part of grandstanding depending on what is being asked and how. Also, note that the length of a speech excerpt is irrelevant to and does not cue the type of speech.

Your choices will be evaluated after you complete each HIT. Low-quality workers may not be invited to participate in our future studies. Therefore, read each speech carefully. Skimming or reading quickly will result in low-quality evaluations.

This training module has two parts.

In Part 1, we will provide five practice HITs followed by instructions about how the text extract should be coded.

In Part 2, we will give you six example HITs to complete. To receive the qualification for the **Compare Congressional Hearing Speeches** task, you must complete **five out of six** of these example HITs correctly.

## 5. Text Pre-processing Step

A recent study by Denny and Spirling (2018) highlight that different text pre-processing rules may result in different substantive implications especially for unsupervised learning models. Although this study applies supervised learning method, here I explain which rules I employed and why since these rules have important impacts.

In order to preprocess the texts, I went through the following steps: removing punctuations because they do not contain any substantive meanings and are often removed in textual analysis; stemming to treat same words in different forms the same because this will help prediction models will perform better than they would by treating them as different words; lowering case to treat the words starting either in upper or lower case the same because there is no theoretical reason why they should be treated differently in my study, and removing stopwords because these words are merely functional and do not contain meanings that are potentially important to learn congressmen's statements in hearings.<sup>25</sup> However, I decided not to remove numbers since they may be important traits to capture non-grandstanding statements that often refer to numeric records relevant to a policy issue under consideration.

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<sup>25</sup> I used the default English stopwords from the “quanteda” R package which borrowed the list from the “stopwords” R package. In addition, I included the following stopwords to the list: Im, youre, hes, shes, its, were, theyre, ive, youve, weve, theyve, id, youd, hed, shed, wed, theyd, ill, youll, hell, shell, well, theyll, isnt, arent, wasnt, werent, hasnt, havent, hadnt, doesnt, dont, didnt, wont, wouldnt, shant, shouldnt, cant, cannot, couldnt, mustnt, lets, thats, whos, whats, heres, theres, whens, wheres, whys, hows, aint, ain't.

Denny and Spirling (2018) note that the choice of preprocessing rules for a supervised learning method should be made based on how well the resulting predictions of labels correctly match the actual labels. For this study, since the label is a continuous variable, I rely on the Root Mean Squared Errors (RMSE) and the Pearson's correlation coefficient to make such choices. More will be explained in the following section regarding how these validation measures were computed.

Based on these two measures, I decided not to remove infrequent words because it generates higher out-of-sample RSME and lower correlation between labels and out-of-sample predictions. Note that removing infrequent words is meaningful only for the document matrix constructed based on a word2vec model but not for the other document matrices with or without the term frequency-inverse document frequency (tf-idf) application because in the latter approach I am using only the most frequent 2000 words.

For the choice of n-grams as part of the preprocessing the corpus, please see the explanation in the following section.

## **6. Choice of Learning Algorithms**

This prediction task was especially challenging given the level of lexical difficulty of the task and potential room for workers' subjective judgments. Thus, any single model could not predict the human-coded grandstanding scores at a satisfactory level. This section describes the modeling choices I made in order to improve the prediction performance of the machine learning algorithms. Most of the decisions were made based on two validation measurements -the root mean squared errors (RSME) and the correlation between the human-coded grandstanding scores

and the predicted grandstanding scores from a learning model- that are obtained through 10-fold cross validation using the 2700 sample paragraphs, except for the last stage where I validate the final ensemble model by predicting the 300 virgin paragraphs that were set aside when making modeling choices and comparing the model's prediction to the human-coded grandstanding scores. Note that the 10-fold cross-validation using the 2700 sample paragraphs was conducted using a Support Vector Machine model was used since it turned out to be the best performing model<sup>26</sup> out of the 13 different learning algorithms used for this analysis regardless of the different methods of representation of documents

First, I fit a word2vec model and generated a vector representation of each statement. A word2vec model is an unsupervised learning model which is also known as distributed vector representation of words.<sup>27</sup> This model assigns each word a numeric feature vector that captures the context in which the word appears in a corpus by measuring the word's relationship with other words surrounding it. There are two approaches to fit a word2vec model: the continuous bag-of-words (CBOW) approach and the skip gram approach. The first approach computes the feature vector of each word through a task predicting a target word from its adjacent words, while the second approach does so by predicting the surrounding words based on a target word. I used the latter since its prediction performance is better (RMSE: .672, correlation: .642) than the former (RMSE: .683, correlation: .626). In order to find the best set of parameters, I vary four

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<sup>26</sup> It is the fourth model in Table A1 and was used for cross-validating pre-processing steps and word2vec models.

<sup>27</sup> Mikolov et al. (2013), "Efficient Estimation of Word Representations in Vector Space" available at: <https://arxiv.org/abs/1301.3781> (Accessed on March 28, 2019)

key parameters generating 96 different combinations: I tried 300, 400 and 600 for the dimension of a word vector; 5, 7, 10 and 12 for the window size; 10, 15, 30 and 45 epochs; unigram and bigram. Among the 96 different model specifications, the one with 400 dimensions, a window size of 5, 15 epochs and bigram performed the best. Then, I concatenate the resulting word vectors for each speech by accumulating vectors of words present in a speech and dividing each element in the resulting vector by a scalar computed as the following: raise the elements in the vector to the power of 2, sum them up, and then take square-root of it.<sup>28</sup>

Second, I use a bag-of-words approach with or without term frequency-inverse document frequency (tf-idf) application.<sup>29</sup> At the document pre-processing stage, I initially used only the unigrams. However, since the best performing word2vec model turned out to have bigrams, I added bigrams when preprocessing the text before constructing document matrices using the bag-of-words approach. When only the bigrams are used, the model's prediction performance

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<sup>28</sup> This concatenation to produce a document vector representation was conducted using “doc2vec” command with “sum\_sqrt” method using the “textTinyR” R package. I also have tried fitting Paragraph Vector models (both PV-DM and PV-DBOW) introduced in “Distributed Representations of Sentences and Documents” by Le and Mikolov (2014) (available at [https://cs.stanford.edu/~quocle/paragraph\\_vector.pdf](https://cs.stanford.edu/~quocle/paragraph_vector.pdf)). However, the document feature matrix produced by these models had much worse prediction performance (RSME: .838 or greater; correlation: .312 or less) than the one I constructed from a word2vec model.

<sup>29</sup> The tf-idf places larger weights on the words that are common in a document but less common in other documents and places smaller weights on the words that appear frequently across the documents in the corpus.



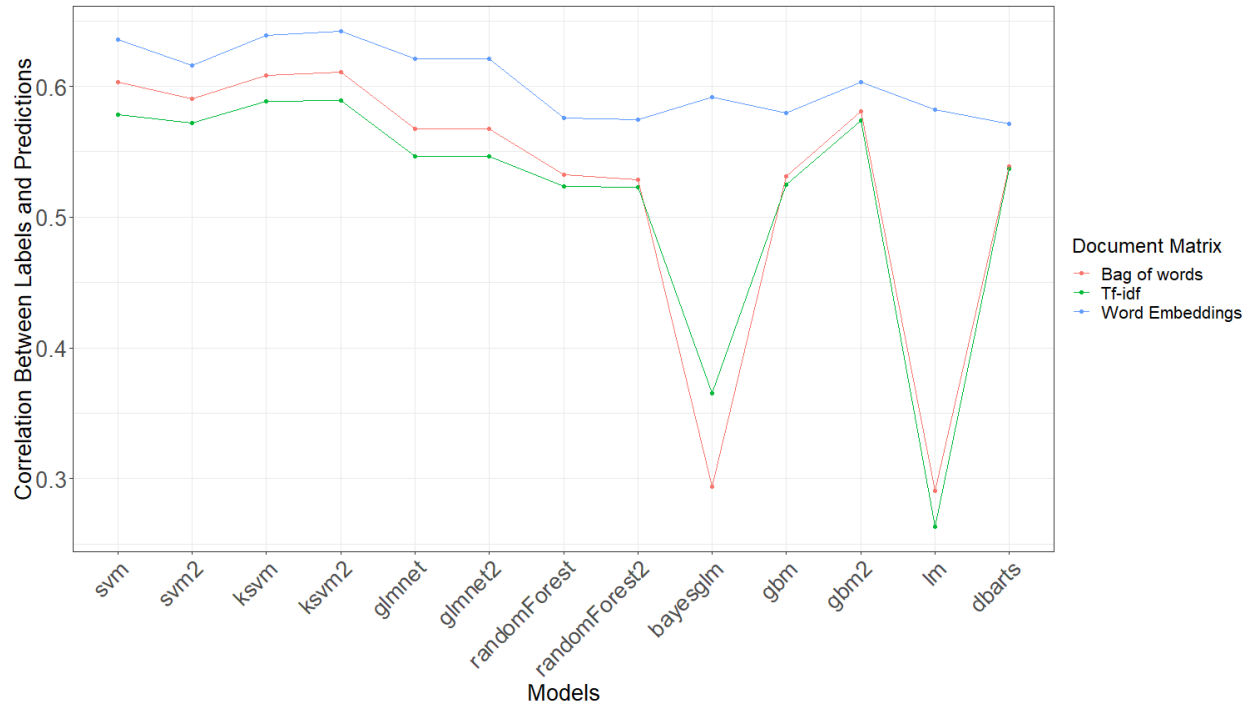
did not improve compared to the performance of the model based only on unigrams. On the other hand, when both unigrams and bigrams are included, the prediction performance significantly improved. Therefore, I decided to include both unigrams and bigrams to build a document matrix using a plain bag-of-words approach and that with the tf-idf application. In order to train learning algorithms, I had to trim these two document matrices in order to avoid a memory error. The largest possible dimension I could get using computers that I have access to was 2000. Thus, I chose only the most frequent 2000 words to train models.

Third, using each of the three document matrices, I trained 13 different learning models on the 2700 sample paragraphs with weights applied. These models were fit using the SuperLearner R package. Table A1 below presents the names of the model, tuning parameters if differently specified from the default setting, and whether the weighting is applicable or not.

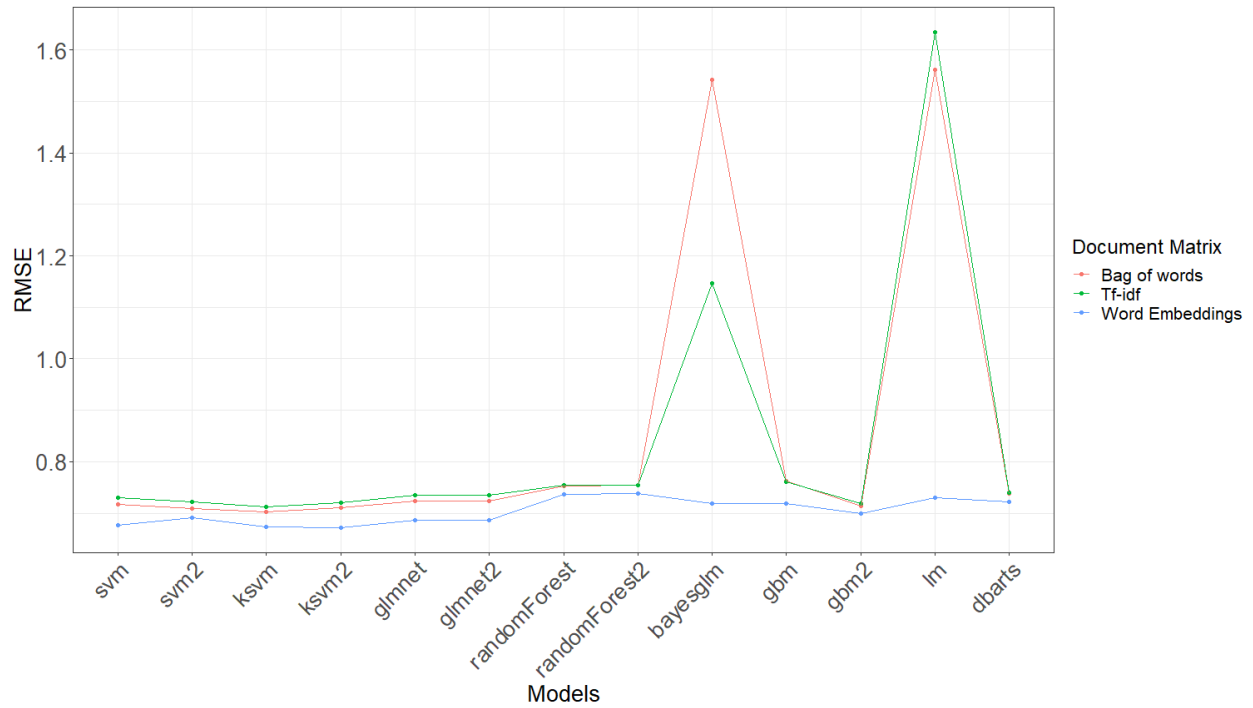
**Table A1. Machine Learning Algorithms**

No.	Model (Abbreviated name)	Tuning Parameter	Weight
1	Support Vector Machine (svm)		NA
2	Support Vector Machine (svm2)	Cost = 10	NA
3	Kernlab's Support Vector Machine (ksvm)		NA
4	Kernlab's Support Vector Machine (ksvm2)	Epsilon = 0.5	NA
5	Lasso (glmnet)		Applied
6	Lasso (glmnet2)	nlambda = 200	Applied
7	Random Forest (randomForest)		NA
8	Random Forest (randomForest2)	Nodesize = 20	NA
9	Bayesian Generalized Linear Model (bayesglm)		Applied
10	Gradient Boosting Machine (gbm)		Applied
11	Gradient Boosting Machine (gbm2)	shrinkage=.01	Applied
12	Ordinary Least Squared (lm)		Applied
13	Discrete Bayesian Additive Regression Trees Sampler (dbarts)		Applied

**Figure A1. Correlation Coefficients Between Labels and Predictions**



**Figure A2. Root Mean Squared Errors (RMSE)**



Finally, I combine the 39 models using an ensemble Bayesian model averaging technique. The models that received non-zero weights are as follows: Models 3, 4, 5 and 6 using the doc2vec matrix, models 1, 3, 4 and 11 using the plain bag-of-words approach, and model 11 using the tf-idf approach. The weights that the ensemble model assigned to each of the nine models are as follows: .231, .304, .011, .011, .005, .015, .273, .012 and .138. Figures A1 and A2 below present the correlation coefficient comparing the human-coded grandstanding scores and model predictions and RMSEs computed from each of the 39 models.

## 7. Weighting

In order to reflect the fact that the probability to be sampled was differently applied to the first 1000 sample paragraphs and the second 2000, I used weights when fitting machine learning models. The weights are assigned such that 1 for the first 1000 paragraphs and 4.4 for the second 2000. These weights were computed as follows. First, I compute the probability to be sampled in each of the two trials:

For the first 1000 paragraphs:

$$\begin{aligned}
 P_1(\text{sampled}) &= \frac{\text{The number of hearings chosen}}{\text{The number of hearings in the 114th Congress}} \\
 &\quad * \frac{\text{The average number of paragraphs chosen from each hearing}}{\text{The average number of member statements in a hearing}} \\
 &= \frac{50}{1448} * \frac{20}{80} = 0.008632597.
 \end{aligned}$$

For the second 2000 paragraphs:

$$\begin{aligned}
 P_2(\text{sampled}) &= \frac{\text{The number of hearings chosen}}{\text{The number of hearings in all 10 Congresses except the first 50}} \\
 &\quad * \frac{\text{The average number of paragraphs chosen from each hearing}}{\text{The average number of member statements in a hearing}} \\
 &= \frac{2000}{12820 - 50} * \frac{1}{80} = 0.001957713.
 \end{aligned}$$

The inverse of the probability of the second sample is about 4.4 times of the inverse of the probability of the first sample.

Note that the second fractional term in the probability to be sampled for each sample should ideally be the number of paragraphs chosen, which equals 1000 for the first sample and 2000 for the second sample, divided by the total number of paragraphs contained in the chosen hearings respectively. However, in order to simplify the computation for both samples, I counted the average number of paragraphs chosen from each hearing, which equals  $1000/50=20$  in the first sample and 1 for the second sample, and the average number of member statements in a hearing from the entire data, which equals 80, and divided the former by the latter. This formula gives the same weights as if I had divided the former by the average number of processed paragraphs in a hearing<sup>30</sup> because the weight is computed by taking a ratio of the inverse of the

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<sup>30</sup> I have not tried counting the average number of paragraphs in a hearing using the entire corpus because processing the entire corpus by breaking longer speeches into paragraphs and aggregating adjacent short speeches takes too much time making it inefficient without adding much benefit to calculating the weights.

probability for each sample. That is because when taking the ratio of them, the same denominator in the second fractional term in the both probabilities cancel out each other.

Given that more training data were chosen from the 114<sup>th</sup> Congress, I conducted the following analysis in order to check if weights actually helped preventing the machine learning models overfit on the data drawn from the 114<sup>th</sup> Congress: First, I divided the 300 virgin paragraphs into those from the 114th Congress and those from the other Congresses. Second, I computed the validation statistics separately for these two sets and compared whether these statistics are similar to each other. For the paragraphs from the 114th Congress, the RMSE is 0.615 and the correlation is .727. For the paragraphs from the other Congresses, the RMSE is 0.613 and the correlation is .686. The correlation is slightly higher for the 114th Congress, but there is no difference in terms of RMSE. This result implies that the prediction models are not overfit particularly on the data from the 114th Congress and thus further validates the measurement process for the grandstanding score.

## 8. Sensitivity of the Grandstanding Score to Sample Size

This section discusses how sensitive the grandstanding score is to sample size at the member, committee and Congress levels. First, at the member-level, the frequency of statements made by an individual legislator in a given Congress ranges from 1 to 4074 with its mean at 270. Some made only a few statements in a Congress. For example, Paul Ryan, the House Speaker in the 114<sup>th</sup> Congress spoke just once in a committee hearing. In order to measure the sensitivity of the grandstanding score at the member-level, I selected those who made 1000 or more statements in a given Congress and selected a random sample of each one's statements by increasing the sample size from 10, 20, 30, ... to 1000. For each sample size, I iterated the sampling for ten times. Then, I measured the standard deviation of the average grandstanding scores for each sample size for each person across ten iterations and computed the pooled standard deviation of these measures across individuals for each sample size.<sup>31</sup> Figure A3 below shows how sensitive the standard deviation of the grandstanding score for each sample size is. It is hard to pinpoint a threshold sample size from which the grandstanding score starts to become stable significantly, but it seems that starting from 70 statements the standard deviation changes slowly as the sample size increases.

In addition, I compute the Congress-level sensitivity and committee-level sensitivity. For the former, I chose the Congress with the most observations, the 110<sup>th</sup> Congress, and set the sample size starting from 30,000, which is about the sample size of the Congress with the least number of observations, to 100,000. Then, for each of the chosen sample sizes, I randomly

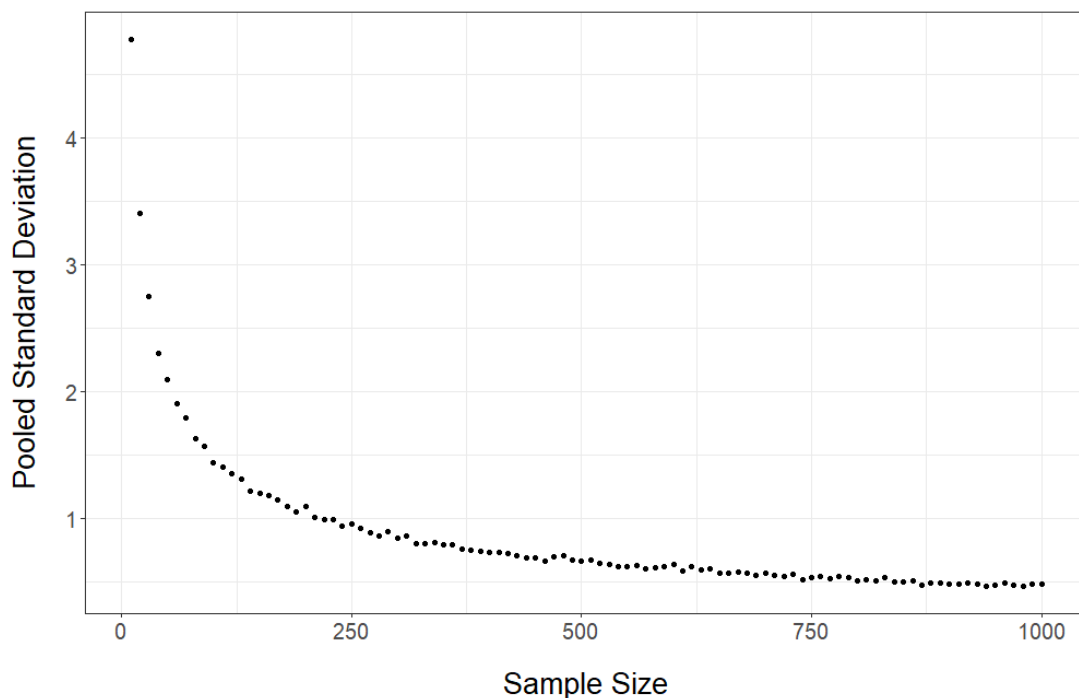
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<sup>31</sup> The formula for the pooled standard deviation is presented in the following section under Table A3.

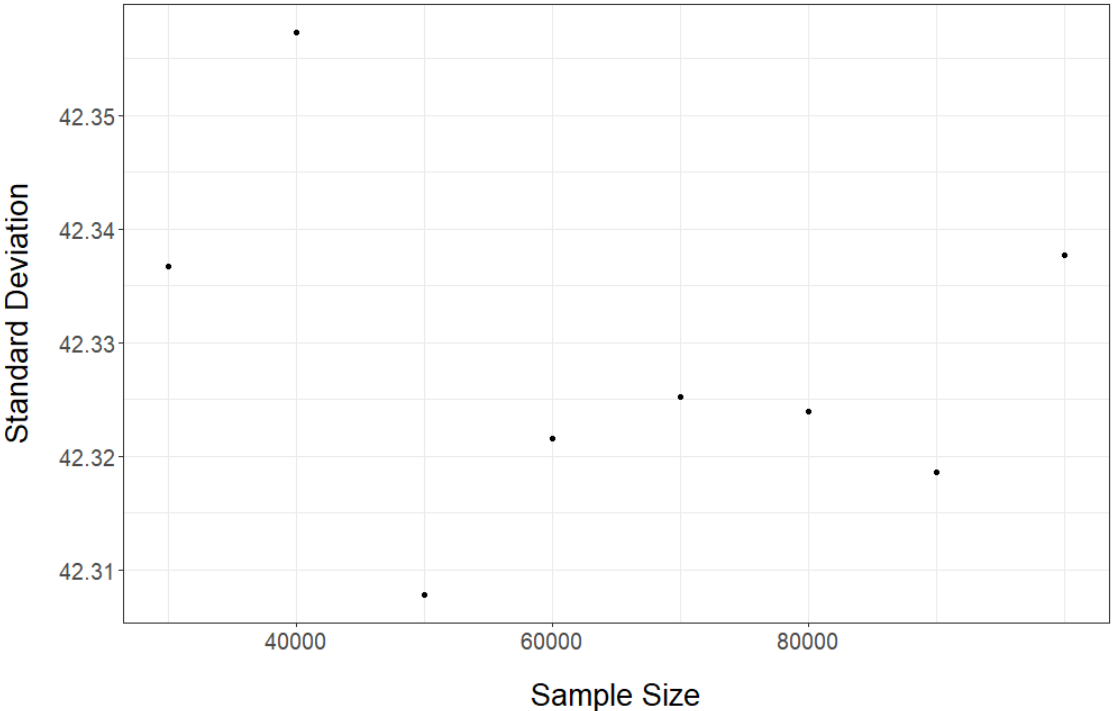
sampled observations from the 110<sup>th</sup> Congress for ten times, computed the average grandstanding score from each iteration, and computed the standard deviation of the ten means.

A similar procedure was undertaken at the committee level. The committee with most observations was the Committee on Oversight and Government Reform, and the sample size was set to start from 500 which is about the number of statements made at the committee with least number of observations. Figures A4 and A5 below present the standard deviation of average grandstanding scores for each sample size at the Congress-level and at the committee-level, respectively. These graphs show that, unlike the member-level sensitivity, as the sample size increases, the standard deviation does not decrease and barely changes.

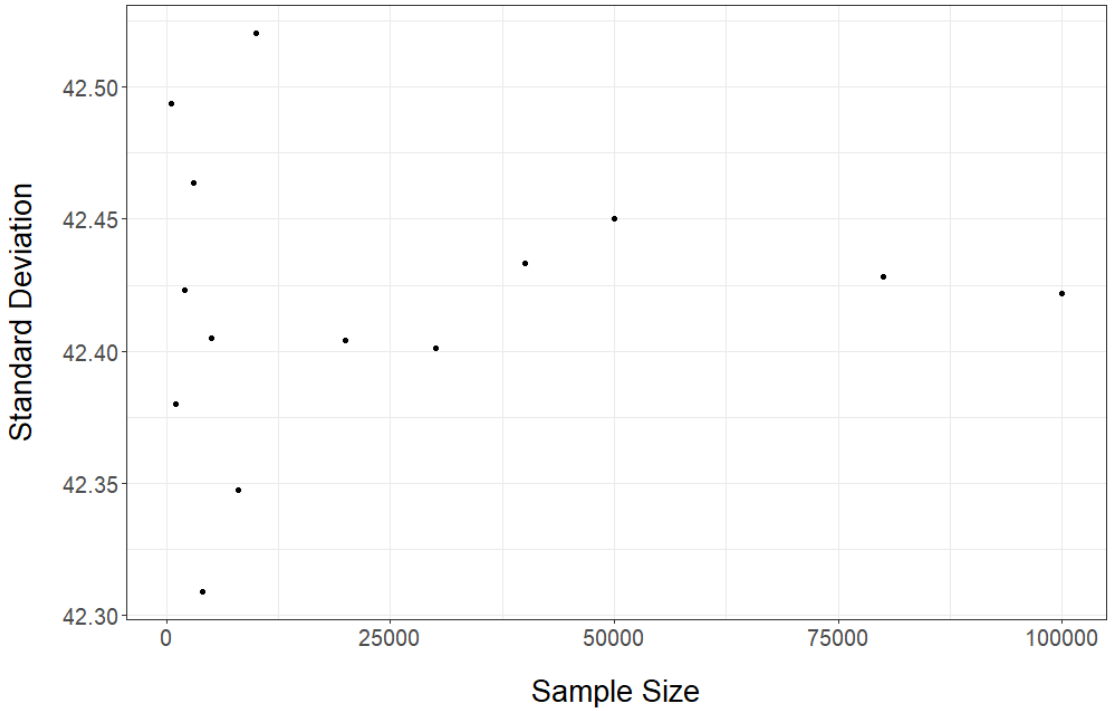
**Figure A3. Member-level Sensitivity**



**Figure A4. Congress-level Sensitivity**



**Figure A5. Committee-level Sensitivity**





One way to address the member-level sensitivity is to subset the data to include only the members who made statements frequently enough and conduct the analysis. However, this solution may introduce a serious selection bias. For example, the member-level data will drop 957 cases out of 3713 if the members who made less than 70 statements are removed. If those who speak less are systematically different from the rest of the members, the analysis will produce biased results. Therefore, I include all statements for this study and do not restrict the analysis depending on the length of statements.

## 9. Summary of the Dataset

**Table A2. Number of Observations by Congress**

Congress	Member-level data	Statement-level data
105	206	28,285
106	308	74,165
107	308	69,837
108	368	83,986
109	372	86,207
110	432	158,888
111	435	143,958
112	431	150,018
113	426	122,880
114	427	108,453

The major reason for the smaller number of observations in earlier Congresses is because hearing scripts are not thoroughly available online for these earlier Congresses. For example, hearing scripts in certain committees are not posted on the GPO webpage (E.g. The Committee on Education in the 105<sup>th</sup> Congress).

**Table A3. Descriptive Statistics of Covariates**

Variables	Min.	Mean	Max.	Sd.	Variables	Min.	Mean	Max.	Sd.
Grandstanding (Member-level)	17.65	44.53	85.78	5.708	Female	0	.158	1	.369
Grandstanding (Statement-level)	0	42.70	100	15.217	Chair	0	.048	1	.214
Minority	0	.447	1	.497	Subcommittee Chair	0	.217	1	.412
Unified	0	.399	1	.490	Chair's statement	0	.272	1	.445
Party Support	.277	.923	1	.081	Ranking Member's statement	0	.068	1	.252
Vote (%)	.39 (39)	.674 (67.37)	1 (100)	.130 (12.99)	Party Leadership	0	.044	1	.204
Seniority	0 (1)	.152 (5.422)	1 (30)	.146 (4.221)	Statement frequency	0 (1)	.066 (269.5)	1 (4074)	.083 (339.39)
Abs(DW-Nom.)	0 (.003)	.340 (.485)	1 (1.423)	.133 (.189)	Number of speakers	0 (1)	.209 (11.65)	1 (52)	.146 (7.429)
Democrat	0	.478	1	.500	Polarization within committee	0 (.653)	.499 (.838)	1 (1.023)	.076 (.204)
Freshman	0	.164	1	.370					

The standard deviation for the member-level grandstanding scores in this table reports the standard deviation across observations in the member-level data. The formula for the pooled standard deviation which is reported and used in the main text is  $\sqrt{\frac{\sum_{i=1}^k (n_i - 1) s_i^2}{\sum_{i=1}^k (n_i - 1)}} = 4.34$  where  $k$  is the number of unique members who served for more than one term in the House,  $n$  is the number of terms that a member  $i$  served, and  $s_i^2$  is the over-time variance of her grandstanding score. I squared vote percentages before rescaling them and divided the output by 100. For the seniority variable, I multiplied 100 to the rescaled seniority variable, squared this value, and divided it by 100.

**Table A4. Grandstanding Scores of Individual Committees in the 105-114<sup>th</sup> Congresses**

Committee	Mean	Coefficient from Model 4	Coefficient from Model 12 in Table A6
Rules	48.930	4.871*** (.121)	4.871*** (.120)
Benghazi Terrorist Attacks (Select)	48.515	8.272*** (.2427)	-
Foreign Affairs	48.402	5.187*** (.195)	5.209*** (.195)
House Administration	46.444	2.152*** (.445)	2.103*** (.445)
Energy Independence and Global Warming (Select)	46.222	3.239*** (.894)	-
Budget	45.725	2.816*** (.293)	2.795*** (.292)
Education	45.264	2.218*** (.219)	2.191*** (.219)
Ways and Means	44.202	.989*** (.232)	.981*** (.233)
Financial Services	43.607	-.128 (.184)	-.132 (.185)
Armed Services	43.360	-.809*** (.270)	-.827*** (.271)
Appropriations	43.149	-.867*** (.326)	-.870*** (.326)
Judiciary	42.917	.951*** (.225)	.980*** (.225)
Government Reform	42.433	-	-
Science, Space, and Technology	42.358	-.524** (.217)	-.529** (.217)
Transportation and Infrastructure	42.249	-1.091*** (.259)	-1.091*** (.259)
Homeland Security	41.791	-.829*** (.224)	-.809*** (.224)
Intelligence (Select)	41.583	-.759* (.422)	-
Energy and Commerce	41.322	-1.101*** (.190)	-1.182*** (.191)
Small Business and Entrepreneurship	41.306	.585** (.229)	.580** (.229)
Veterans' Affairs	40.908	-1.180*** (.301)	-1.179*** (.301)
Agriculture	40.570	-3.100*** (.367)	-3.107*** (.367)
Natural Resources	40.079	-1.475*** (.183)	-1.481*** (.183)

Coefficients are of the committee fixed effects in Model 4 of Table 3 and Model 8 of Table A3.

Standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \*p<0.1

## 10. Additional Results

**Table A5. Regression Results Using Matched Datasets**

Matched by	Power Committees		Foreign and Security	
Model description	Model 5	Model 6	Model 7	Model 8
Power	2.427***	2.420***		
Committee	(.313)	(.311)		
Foreign/Security			1.996***	2.014***
Committee			(.239)	(.239)
Minority	1.457*	1.190	.414	.598
	(.832)	(.875)	(.694)	(.757)
Unified	-.708	-.331	13.072**	14.317**
	(2.013)	(1.214)	(5.171)	(5.655)
Minority*Unified	-.725	.952	.642	.554
	(1.161)	(1.231)	(.995)	(1.014)
Party support		-2.399		6.446
		(10.857)		(6.170)
Vote share (%)		7.603		-2.161
		(25.647)		(16.207)
Vote share squared		-.030		-.009
		(.161)		(.106)
Seniority		.736		7.140
		(10.918)		(13.590)
Seniority squared		.069		-.168
		(.206)		(.249)
Ideological		-25.866***		-5.047
intensity		(9.248)		(3.732)
Democrat		-		-
Freshman		2.110**		-.161
		(.842)		(.650)
Female		-		-
Chair			.918	.957
			(1.028)	(1.045)
Subcommittee			-.262	-.327
chair			(.577)	(.643)
Party leader	4.288**	3.824**	-.527	-.431
	(1.902)	(1.892)	(1.435)	(1.431)
Statement	-19.237***	-15.095**	-12.088***	-11.679***
frequency	(6.070)	(6.077)	(3.636)	(3.776)
Constant	45.757***	52.076***	32.450***	27.574***
	(2.643)	(13.481)	(5.650)	(9.451)
Member effect	Fixed	Fixed	Fixed	Fixed
Hearing effect	-	-	-	-
Committee effect	-	-	-	-
Congress effect	Fixed	Fixed	Fixed	Fixed
Observations	1,120	1,104	1,478	1,470

Standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

The dependent variable is grandstanding score.

Note: Models 5 and 6 present results using the matched data to test the effect of the environments in powerful committees. In these models, I do not control for Chair and Subcommittee chair variables since chairs' statements were dropped from the matched dataset, and thus, these variables only capture whether a member served in other committees in a given Congress. Therefore, theoretically it makes less sense to control for these variables. Models 7 and 8 present results using the matched data to test the effect of the environments in committees with jurisdiction over foreign affairs and national security issue areas. In Models 6 and 8, the coefficients for Democrat and female variables were not estimated due to collinearity.

**Table A6. Regression Results without Select Committees**

Model description	Member-level		Statement-level	
	Model 9	Model 10	Model 11	Model 12
Minority	.526** (.254)	.592** (.262)	.940*** (.060)	.948*** (.065)
Unified	-.140 (.509)	-1.334 (.920)	.356 (.263)	.390 (.291)
Minority*Unified	.661** (.305)	.706** (.337)	.136* (.081)	.119 (.090)
Party support		.330 (2.772)		-.765 (.597)
Vote share (%)		5.871 (7.271)		6.588*** (1.859)
Vote share squared		-.044 (.047)		-.043*** (.012)
Seniority		.375 (4.134)		1.550* (.817)
Seniority squared		.083* (.044)		-.048*** (.011)
Ideological intensity		-3.351** (1.673)		-.831* (.450)
Democrat		-6.600 (6.558)		.247 (.253)
Freshman		-.938*** (.247)		-.443*** (.081)
Female		-		-.426 (.326)
Chair	-1.205** (.480)	-1.132** (.483)		
Subcommittee chair	-1.475*** (.241)	-1.499*** (.239)		
Chair's statements			-4.347*** (.049)	-4.376*** (.049)
Ranking member's statement			-.868*** (.074)	-.932*** (.075)
Party leader	1.105* (.568)	1.236** (.552)	.144 (.146)	.052 (.147)
Statement frequency	-14.788*** (1.208)	-14.494*** (1.216)		
Number of speakers			4.252*** (.309)	4.210*** (.310)
Polarization within committee			-.907** (.459)	-.933** (.460)
Constant	40.894*** (.237)	39.507*** (3.457)	43.511*** (.357)	42.229*** (.893)
Member effect	Fixed	Fixed	Random	Random
Hearing effect	-	-	Random	Random
Committee effect	-	-	Fixed	Fixed
Congress effect	Fixed	Fixed	Fixed	Fixed
Observations	3,706	3,635	989,333	977,504

Standard errors are in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

The dependent variable is grandstanding score.

Note: The coefficient for the female variable in Model 10 was not estimated due to collinearity.

**Table A7. Difference in Means Using the Matched Dataset without Select Committees**

Treatment Committees	Powerful	Foreign & Security
In these committees	47.909	47.291
In other committees	45.426	44.696
Difference	2.483	2.595
P-value from a t-test	.000	.000
Obs.	555	647

Note: To test the effect of powerful committees, all chairs' statements were excluded from the analysis.