Ideology and Participation:
Examining the Constitutional Convention of 1787

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Abstract

This paper looks at the effect of ideology on delegate participation at the Federal Convention of 1787. Making use of an original dataset on delegate verbosity and delegate speeches at the Constitutional Convention, analysis reveals that ideologically extreme Convention delegates were more likely to participate at the Convention. This leads to two conclusions. First, ideology affected delegate participation in a meaningful way. Second, claims made about the intent of the writers of the Constitution based on Convention records are biased in favor of ideologically extreme Convention delegates, as extreme delegates were more likely to be recorded.

KEY WORDS: Federal Convention of 1787, Constitutional Convention, Legislative behavior, Original intent, American political development (APD)

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Using original intent requires understanding the nature of debate at the Constitutional Convention. I contribute to this understanding by investigating why certain delegates contributed and participated differently than others during the Convention debates. Convention delegates were members of a deliberative body, as such they were goal-oriented actors (e.g. Mayhew, 1974; Fenno, 1973, 1978). I predicate my argument on the simple assumption that goal-oriented actors will not expend the resources required to make floor speeches if doing so does not help them achieve their goals. The purpose of this paper is to determine to what extent delegate ideology impacted participation in floor debates at the Federal Convention of 1787.

In exploring the impact of delegate ideology on debate at the Convention, this paper links recent work on the observable events of the Convention (e.g. Robertson, 2005, 2006; Dougherty and Heckelman, 2006, 2008; Pope and Treier, 2011, 2012, 2015; Heckelman and Dougherty, 2013) with literature from the field of legislative studies concerning legislator behavior. Scholars have examined how participation potentially influences co-legislators in other deliberative bodies, typically legislatures (e.g. Buchanan et al., 1960; Francis, 1962; Kovenock, 1973; Smith, 1989). Others have scrutinized why legislators choose to participate in their respective bodies (e.g. Arnold, 1990; Hall, 1996; Maltzman and Sigelman, 1996). In seeking to understand the determinants of floor participation in a parliamentary setting, Eggers and Spirling (2014) find that electoral and party factors influence legislator behavior. Others have found that gender influences participation (e.g. Pearson and Dancey, 2011; Karpowitz, Mendelberg and Shaker, 2012; Pearson, 2013). It could also be that floor participation in a legislative setting has direct benefits to legislators, advancing their preferred policy positions (e.g. Maltzman and Sigelman, 1996; Martin and Vanberg, 2004; Proksch and Slapin, 2012).

Assessing the relationship between ideology and participation in a deliberative legislature is complicated by additional factors of legislative life such as partisan influences, electoral concerns, and agenda control. However, the Federal Convention of 1787 was not a legislature. Thus, it provides an opportunity to study this relationship without these potentially problematic considerations. Convention delegates were not subject to

1

electoral constraints; floor debate was not subject to positive or negative agenda control, as any issue could be brought to the floor of the Convention (even if it had already been disposed of). Additionally, delegates operated with freedom to express their views as a result of the rules of secrecy that prevented Convention proceedings from being shared with anyone outside the chamber. These conditions meant that delegates should have been in a position to engage in true deliberation where opinions were shared openly and decisions were the result of member preference over a given policy that was influenced to some degree by the discussion of that policy. Thus the Constitutional Convention provides an excellent opportunity to study the impact of ideology on participation in a deliberative body.

The paper makes several contributions. First, I create and make use of an original dataset of all individual speeches at the Constitutional Convention. This allows for the first systematic assessment of delegate floor behavior at the Constitutional Convention. Second, I investigate the relationship between delegate ideology and delegate participation in floor debates. Finally, I provide an assessment of potential bias in my primary data source, the Convention notes of James Madison.

I find evidence that ideologically extreme delegates did participate at the Federal Convention significantly more than moderate delegates. I use original data on delegate participation at the Constitutional Convention to show that the higher level of participation by ideologically extreme delegates is true in terms of both the number and length of their contributions to the recorded Convention debates. Furthermore, these results hold across several different analyses of the data. Not only do these findings demonstrate ideology has an important influence on floor participation in a deliberative setting, but also throws doubt on the usefulness of claims made by modern politicians and jurists predicated on original intent, as these assertions may be skewed from the actual process that guided the creation of the Federal Constitution.

Foundations

Research about the Constitutional Convention predominantly uses a single source, Farrand's *Records of the Federal Convention of 1787* (hereafter referred to as either "Farrand's *Records*" or simply "the *Records*"). The *Records* bring together the personal diaries and notes of several of the Convention delegates and the official Journal of the Convention. The materials were arranged chronologically by Farrand in 1911 and issued in a revised condition in 1937 in the *Records of the Federal Convention of 1787*.[1] The three documents collected together in the *Records* that provide the most information about daily proceedings are the official Journal, the notes of James Madison (delegate from Virginia), and the notes of Robert Yates (delegate from New York). The official Journal is no more than a base outline of the proceedings along with a record of the roll call votes.[2] Madison's notes are by far the most extensive and detailed of any of the source materials; Yates' notes provide the greatest detail aside from Madison's. Scholars have noted that Madison revised his notes several times prior to his death (Farrand, 1966; Bilder, 2015), potentially calling into question the accuracy of his account. Following the analysis of delegate behavior, I show that Madison's notes show no discernible bias or discrimination, making them a viable empirical data source.

The *Records* provide nearly the whole of the historical record of this event as the Convention operated under rules of secrecy (delegates were forbidden from discussing proceedings with anyone other than fellow delegates, and daily debate was held with windows closed and shades drawn). At the conclusion of the Convention, the Convention secretary burned many of his notes and turned the official Journal over to George Washington for safekeeping. Washington then turned these papers over to the State Department in 1796 (Farrand, 1966). A joint resolution of Congress in 1818 forced the the publication of these papers which were compiled by then Secretary of State John Quincy Adams along with various delegate notes in 1819.[3] Prior to this, the public had no knowledge that records of the Convention even existed.

Efforts to understand the intentions of the delegates has long been ongoing. In the 228 years since the ratification of the Constitution, a variety of scholarship on the topic

has emerged. Pre-Progressive Era historians typically treated delegates as idealistic demi-gods driven by love of freedom and liberty (see for example Gladstone 1878; Walker 1895). More contemporary historians have dialed back on the rhetoric but still maintain that the delegates acted as they did due to ideological concerns (e.g. Bailyn, 1967; Wood, 1967; Rakove, 1996). Others have investigated if delegates may have acted out of economic self-interest (e.g. Beard, 1966; Brown, 1956; McDonald, 1958; McGuire and Ohsfeldt, 1986; McGuire, 1988, 2003; Heckelman and Dougherty, 2007, 2010).

This study follows a tradition begun by McDonald (1958) in using individual roll call votes from the Constitutional Convention to assess delegate behavior during the Convention. Under the rules of the Convention, voting was carried out by the states, not individual delegates. Thus, only the votes of the states were recorded. McDonald "deciphered" 16 of the state votes into individual roll calls by utilizing attendance records, public statements by delegates, and private letters. Using the same technique, Dougherty and Heckelman (2008) expand the number of deciphered votes to 28. Dougherty et al. (2012) detail the creation of a new database of all individual roll calls (a total of 569 votes) at the Constitutional Convention.

Improved information on delegate voting has led to an increase in looking at the content of the Convention rather than the delegates. One area that has received a fair amount of attention is the dimensions and issues of debate at the Convention (e.g. Dougherty and Heckelman, 2006, 2008; Pope and Treier, 2011, 2012; Heckelman and Dougherty, 2013). Despite the interest in both delegate characteristics and the content of the Convention, a few scholars have tried to assess how individual delegates impacted the debates of the Convention. Robertson (2005, 2006) and Dougherty and Heckelman (2006) examine how the behavior of Roger Sherman (CT) influenced the course of the Convention and subsequent content of the Constitution.

This study addresses how systematic delegate behavior shaped the output of the Constitutional Convention, something that has not yet been investigated. The need for such research is clear. Both the Supreme Court and lower courts frequently cite not only the Constitution but also the proceedings of the Convention in their opinions (Hutson,

1986; Maggs, 2007). Yet drawing on these documents as evidence of original intent of the Framers may not be so straightforward. If the proceedings of Convention debate do not faithfully reflect the thinking of the majority of those voting in favor or against particular motions, then the reason that those same delegates voted as they did cannot be gleaned from the records of the Convention.[4]

Explanations for Delegate Verbosity

A possible explanation as to why ideologically extreme delegates participate in debate at a higher rate than moderate delegates comes from strategic thinking about delegate behavior. Contest models (e.g. Hirshleifer, 1991) suggest that delegates will exert an effort cost in expectation of gaining utility in the long term via outcomes more in line with their own policy preferences. Legislative bargaining models suggest that legislators act strategically when proposing policies and voting (Baron and Ferejohn, 1989). More recent models of legislative bargaining aver that legislators will continue to propose policies more favorable to their own ideal points so long as they do not lose their majority voting coalition (Diermeier and Fong, 2008, 2011). Importantly for a potential application to the Constitutional Convention, this holds even with the introduction of a motion to reconsider within the legislative setting (Diermeier and Fong, 2011). Finally, some models of legislative bargaining also find that only more extreme legislators will participate in attempting to propose policies (Fong and Deng, 2011). Taken together, these two broad classes of models suggest that legislators, members of deliberative bodies, speak more often (i.e. exert increased effort) in order to secure outcomes closer to their own policy preferences (i.e. ideologies).

Thus, it could be that ideologically extreme delegates participate at a higher rate than ideologically moderate delegates because they advocate for their positions more strongly. Consider that everything else equal, motions proposed by more ideologically extreme delegates are less popular than motions proposed by more moderate delegates. Ideologically moderate delegates are more likely to have their preferred positions adopted

because their positions are closer to the ideological center of the deliberative body (and, perhaps, the status quo). Moderate delegates do not need to engage in lengthy defense of their preferred positions in order to gain support, unlike more extreme delegates. Proposals closer to the median are more likely to pass regardless of delegates' verbal support. Therefore delegates at the extremes speak more in hopes of creating support for proposals that are further from the median position.[5]

In the following analysis I use a unidimensional preference scale to analyze which delegates spoke more at the Convention and why. Delegate ideology is measured on a single dimension based on preferences over the scope of the proposed national government.[6] My hypothesis is that delegate verbosity increases as delegate ideology becomes more extreme. Intuitively, delegates with stronger preferences over the size and scope of the proposed national government (i.e. more extreme on the single dimensional scale) should speak more often and at greater length than their more moderate peers. To test this hypothesis, I compare delegate ideological positions to both how frequently and how much they spoke during the daily debates of the Constitutional Convention. The hypothesis will be supported if delegates at the ideological extremes talk more (measured in the number of speeches that they give as well as the duration of those speeches) than those delegates closer to the ideological center. The empirical assessment of this hypothesis comes in in the "Aggregate Delegate Analysis" section using original data on aggregate delegate verbosity. I test the theoretical explanation of delegate behavior suggested above by using a measure of the ideological distance between the ideology of a delegate who makes a given speech and delegates who spoke prior to that. The empirical assessment of this hypothesis comes in the "Analysis of Convention Speeches" section using an original data set of all recorded delegate speeches in Madison's notes from the Convention collected in Farrand's *The Records of the Federal Convention of 1787*.

Aggregate Delegate Analysis

To assess whether ideologically extreme delegates participated in Convention debates more than ideologically moderate delegates, I collected original data on how often and at what length delegates spoke at the Convention. I employ several techniques to determine the relationship between delegate verbosity and ideology. First I use a basic frequency analysis. I then use measures of delegate speech volume and delegate speech counts as the dependent variables in regression analyses. I discuss robustness checks to these analyses throughout the section. Before moving onto the empirical inquiries, I first describe the variables used.

Variables

The dependent variable is one of two measures of how much a delegate spoke. The first, *Speech Number*, is the total number of times a delegate was recorded as speaking at the Convention in Madison's notes. The data were obtained from Farrand's *Records* by the author. This variable captures the aggregate amount that a delegate participated in daily debate at the Convention. The average delegate spoke 56.86 times, while the median delegate spoke 32 times.[7]

The second dependent variable is *Verbosity Length*. *Verbosity Length* is the length a delegate spoke over the entirety of the Constitutional Convention. *Verbosity Length* is measured as the total vertical space, in millimeters, that a delegate has in the transcript of the Convention as reported in Madison's notes (Farrand, 1966). The measure is an approximation of the number of lines of speech produced by a delegate at the Convention.[8] On average, 15 millimeters of continuous vertical text is equal to four lines of text and each line of text contains roughly 8.84 words. The range of the data is quite large, with an average delegate having 1889 millimeters of recorded text (126 lines or 1114 words) across the course of the Convention.[9] These data were collected by the author.[10]

The key explanatory variable is *Ideology*, a one-dimensional ideological measure of delegate positions at the Federal Convention of 1787 using W-NOMINATE (Poole and

Rosenthal, 1985*b*; Heckelman and Dougherty, 2013). The scores are based on individual delegate votes inferred on all substantive roll calls at the Constitutional Convention (Dougherty et al., 2012). The lower bound of the Convention W-NOMINATE scores has a value of negative one and is associated with extreme pro-states rights and anti-national government preferences.[11] Delegates such as Elbridge Gerry, Luther Martin, and John Lansing, Jr., all of whom vehemently objected to the final product of the Convention, are at the extreme negative end of the ideological scale. The upper bound of the W-NOMINATE scores has a value of positive one and is associated with a preference for a strong national government. Delegates like James Madison, James Wilson, and George Read, all champions of the Convention during the later debates over ratification, are located at the extreme upper end of the W-NOMINATE scores.

I use two additional measures of delegate ideology. *Ideology²* is simply *Ideology* squared. *Absolute Ideology* was created by taking the absolute value of *Ideology*, which folds the scale of -1 to 1 to 0 to 1.[12] The purpose of these variables is to test two competing functional forms. The absolute form merely asks if more extreme delegates have higher levels of verbosity while the quadratic form allows anti-national government and pro-national government ideologues to be considered separately. The status quo of the Convention is continued government under the Articles of Confederation, an arrangement where little power vested in a national government and states retain most of the power. As such, it is easy to imagine that pro-nationalists have very different incentives to pro-localists. Therefore, while *Absolute Ideology* treats extremists of both groups as the same, a model with both *Ideology* and *Ideology²* allows potential differences in behavior between extreme pro-nationalists and pro-localists to be identified.

Control variables exhibit a good deal of variation and include *Age*, *College*, *Legislative Experience*, *Political Experience*, and *Days Present*.[13] *Age* is the age of a delegate at the time of the Convention (the summer of 1787). The youngest delegate at the Convention was Jonathan Dayton at 26, while the oldest was Benjamin Franklin at 81); the average delegate age was 43. Data for this measure are from Heckelman and Dougherty (2013). The expectation is that the older a delegate was, the more likely he was to participate in

debate (i.e. be more verbose). This expectation is based on the idea that older delegates were more comfortable asserting themselves and were more likely to see themselves as vocal leaders because of their seniority.

College is a dichotomous measure that indicates if a delegate had a formal college education. Delegates are coded "1" if they attended college (in the colonies or abroad) and a "0" otherwise. The median Convention delegate had a college education. Data for this measure are from Heckelman and Dougherty (2013). The expectation is that delegates who attended college were more verbose than delegates who did not. A college education should give delegates greater rhetorical abilities because of the classical nature of formal education during the Eighteenth Century, which in turn would make them more likely to speak than other delegates who lack this type of training.

Legislative Experience is a measure of the total number of years that a delegate had previously served in local, state, or national legislatures. The average delegate had eight years of legislative service prior to the Convention. Data for this measure are from Heckelman and Dougherty (2013). Legislative bodies are deliberative bodies in which the ability to engage in debate and public speaking is prized. Presumably increased familiarity with a legislative setting would embolden a delegate to participate at a greater rate than a delegate without as much legislative experience. Thus, as *Legislative Experience* increases, a corresponding positive increase in verbosity is expected.

Days Present is a count of the number of days that a delegate was in attendance at the Convention. The Convention was in session for 85 days and it makes sense that the more days a delegate was in attendance, the more likely that they would participate in debate. Some delegates had sporadic attendance while others were there every day. Others arrived late or left early.

Additional Notes on the Data

Only 55 delegates attended the Convention. Of these 55, two Wythe (VA) and Houston (NJ), are traditionally omitted from analysis of the Convention because they attended for less than two weeks. Eleven additional delegates are dropped because they do not

have enough roll call positions to create a W-NOMINATE score. A twelfth delegate, Convention President George Washington, is included in one set of analyses and excluded from the other. Washington spoke only a handful of times at the opening and closing of the Convention. In his closing speech to the remaining delegates, Washington revealed that he purposefully refrained from voicing his opinions for fear of unduly influencing the proceedings (Farrand, 1966, Vol. II). To ensure that Washington's strategic non-participation does not affect the results, the models are estimated both ways though the substantive results remain unchanged.

Analysis of Delegate Verbosity

In this section I discuss regression analysis of aggregate delegate speech using ordinary least squares (OLS). This analysis builds on the previous section. Here the dependent variable is *Verbosity Length* aggregated by delegate.[14] Table 1 presents the results of the OLS regressions using two different functional forms.[15]

– Table 1 about here –

The joint significance of *ideology* and *Ideology*^{2} in the quadratic model and *Absolute Ideology* in the absolute model confirms the results of the frequency analysis of the previous section.[16] The strong, positive effect of the variables of delegate ideology show more ideologically extreme Convention delegates have a greater measure of observed verbosity. A delegate having graduated from college is also associated with greater delegate verbosity.

– Figure 1 about here –

Figure 1 presents the predicted level of delegate verbosity at the Convention as delegate *Ideology* shows the effect of moving a delegate's ideology, with all other variables at their median, from one extreme to the other. The solid line depicts the predicted value while the dashed lines show the upper and lower bound of the 95% confidence interval. Delegate verbosity is minimized to the left of the true median value of *Ideology*, around

10

-0.20. The figure shows that, based on the results of the model, delegates further from the median value of *Ideology* have higher predicted levels of participation at the Convention.

The results of Table 1 are presented with robust standard errors.[17] These results are robust through several different iterations. First, results were identical in sign, significance, and relative size for models run using a logged version of the dependent variable *Verbosity Length*. Likewise, results remained stable when dropping the outlying observation of James Madison. Additionally, the use of several alternative control variables did not produce different results. Finally, using *Verbosity Type* (a categorical variable created using *Verbosity Length*) also produced the same substantive result. The stable and robust finding of the significantly positive effect of higher levels (i.e. more extreme values) of delegate ideology on delegate verbosity measured in total length of delegate speech gives support to the hypothesis that more ideologically extreme delegates participated more at the Constitutional Convention.

Count Analysis

As an additional assessment of the relationship between delegate ideology and delegate participation, I leverage my data on the number of speeches that each delegate is recorded as making at the Constitutional Convention according to Madison's notes. By engaging in a count analysis, I can make sure that the results which use *Verbosity Length*, are not due to observations of individuals who may have spoke only a handful of times, but for an extended period. Here, the unit of analysis is still at the delegate level but the dependent variable is now the number of speeches made by a delegate during the Convention (*Speech Number*).

– Table 2 about here –

Table 2 presents the results of a Poisson model with bootstrapped standard errors.[18] *Ideology* has the predicted significantly positive effect on delegate verbosity. The other variable hypotheses (excepting *Age*) are in the expected direction and statistically significant. The results in Table 2 are robust to several specification alternatives. This

11

includes alternative functional forms of the model using linear and curvilinear specifications for ideology. The predictive power of a delegate's ideology with regard to their level of verbosity is also robust to using several alternative control variables. Finally, though the control variables are no longer significant, using OLS with robust standard errors (to account for heteroskedasticity) indicates a significant positive effect of delegate ideology on higher values of *Speech Number*.

– Figure 2 about here –

Figure 2 presents the predicted speech count (and a 95% confidence interval) for a median delegate as *Ideology* ranges from its minimum (-1) to its maximum (1). The solid line depicts the predicted value while the dashed lines show the upper and lower bound of the 95% confidence interval. The number of speeches given by a delegate is minimized just to the left of the true median value of *Ideology*, around -0.10. The figure shows that, based on the results of the model, delegates further from the median value of *Ideology* spoke more often at the Convention.

To determine whether more ideologically extreme delegates participated at a higher rate at the Constitutional Convention, I use several dependent variables and the appropriate corresponding estimation strategies to examine original data about aggregated delegate verbosity. The linear models show that higher values of delegate ideology are positively and significantly associated with larger amounts of recorded delegate speech. A count model reiterates the same finding using the number of recorded delegate speeches rather than the recorded length of delegate speech. Having shown that ideologically extreme delegates were more likely to participate at the Constitutional Convention, the next section looks to why ideologically extreme delegates participated in debate more than ideologically moderate Convention delegates.

Analysis of Convention Speeches

To assess why ideologically extreme delegates spoke more often and for longer during the Convention, I created a new dataset of all delegate speeches from Madison's notes

of the Constitutional Convention. This dataset contains information on how long each speech was, which delegate made the speech, the subject of the speech, as well as additional information about the context of the speech and the delegate who made it. By incorporating information about the order in which speeches occurred and their context within the larger debate, I can test the hypothesis that ideologically extreme Convention delegates speak for longer because they participate in debate as a response to the speeches of other delegates. Here the unit of analysis is a recorded speech given at the Constitutional Convention and the dependent variable is *Speech Length*, a measure of the length a speech at the Convention. This data set contains 2321 speeches made by 51 of the 55 Convention delegates as recorded in Madison's notes of the Convention.[19]

Ideology, *Ideology*^{2}, and *Absolute Ideology*, *Days Present*, *Age*, *College*, and *Legislative Experience* are all operationalized and sourced the same as in the previous analyses.[20]

Previous Speaker is the distance between the ideological score of the delegate who gave a particular speech and the average of the ideological score of the previous three speech givers.[21] This measure allows us to ascertain what effect the distance of a delegate's policy preference point to the average policy point of the debate immediately prior to that speech has on the length of speeches at the Convention. Assessing whether or not delegate speeches were longer when previous speeches were further from delegate ideal points potentially explains why more ideologically extreme delegates accounted for a larger portion of the Convention records.

Slave is a dichotomous variable that indicates whether or not the delegate who gave a particular speech was a slave owner (operationalized as a "1") or not (operationalized as a "0"). The expectation is that speeches by slave-holding delegates were longer than speeches by non-slave-holding delegates, as delegates responded to criticisms of slavery that emerged throughout the course of the Convention.

– Table 3 about here –

Table 3 presents the results of an OLS regression using two different functional form considerations of the same model. Robust standard errors are used in both models.[22] *Previous Speaker* is insignificant in both model specifications suggesting that speech length

13

at the Constitutional Convention is unrelated to the distance between policy preferences of current and immediately prior speech givers. Delegate ideology, however, is strongly positive and significant in both models meaning that, on average, all else equal, speeches given by delegates with more extreme ideological scores were longer than speeches given by delegates with less extreme ideological scores.[23] *Age* and *Slave Owner* are also positive and significant, though the size of the effect of *Age* is minimal.

– Figure 3 about here –

Figure 3 presents the predicted speech length from the quadratic model from Table 3. The predicted speech values are for a speech by a median delegate as values of delegate ideology range from the minimum (-1) to the maximum (1) (shown along with a 95% confidence interval). The effect of delegate ideology on predicted speech length is considerable. A speech by a median ideology delegate (when ideology has a value of zero) is predicted to last for just about 40 words. A speech by a delegate bounded at one of the ideological extremes (-1 or 1) has a predicted length twice that. With the average recorded Convention speech lasting 68 words and the median speech lasting just 37 words, the size of the predicted effect of a delegate's ideology on speech length is considerable.

The results of the analysis in Table 3 are robust to several different specifications. Models that include variables to account for speech topic produced the same results. Using the log of *Speech Length* also produced the same results. Instead of averaging the ideological distance of a delegate who gave a speech and several prior speeches, models that explicitly measured the ideological distance between the delegate who gave a certain speech and the ideological values of the delegates who gave n number of previous speeches were also tried. These also produced the same results. Only when models were run on all 2321 speeches instead of on the subset of 2309 speeches did the results change. With the full data, *Previous Speaker* becomes significant and strongly positive. In an attempt to ascertain what was driving this result, the model was rerun using the individual speech distances mentioned above. In this model, only the distance between the ideology of the delegate giving the current speech and the delegate giving the speech immediately prior is significant. This suggests something special about these 12 longest recorded speeches

at the Convention. Looking at these 12 speeches reveals that they are statistical outliers which explains the significant finding for *Previous Speaker* in the model that runs on the full data set.

This analysis of all recorded Convention speeches has revealed two findings. First, as in the aggregated delegate level analysis, there is a strong effect of delegate ideological extremism on the level of participation. Second, there is no evidence that these ideologically extreme delegates engaged in more debate because they were responding to and defending their own policy preferences from opposing delegates. This result offers no support for the theory that ideologically extreme delegates participated in an effort to counteract other delegates.

Assessing Potential Bias in Madison's Notes

Despite the robustness checks performed to determine the reliability of the various empirical analyses above, a remaining concern relevant to all of the results presented in this work is the accuracy of the source material for the dependent variables, Madison's notes on the Convention. As mentioned above, the documentary evidence upon which studies of the Constitutional Convention rely is potentially problematic, particularly since Madison's notes are not without their issues. They were revised by Madison several times between the time of the Convention and his death in 1836 (Farrand, 1966; Bilder, 2015) and they are only notes, not a complete transcript of the Convention. Additionally, Madison's notes are only a single viewpoint and despite Madison's status as the "Father of the Constitution," Madison was a political outlier at the Convention.

If Madison's notes are systematically biased in favor of delegates who shared his own policy preferences or vice-versa, this would result in biased data which would yield biased and unreliable results. To determine what, if any, bias is present in Madison's notes, I leverage the notes of Robert Yates (NY). Ideologically, Madison and Yates are opposites. Using W-NOMINATE ideal point estimation, Madison has a score of 1 (the rightward bound of the scale) while Yates has a score of -1 (the leftward bound of the scale). This

is an advantage since inherently Madison and Yates are likely to disagree about a given speaker.

According to Farrand, Yates' notes are "next in importance" to Madison's (Farrand, 1966, Vol. I, p. xv). Unfortunately, Yates was only in attendance at the Convention between its start on May 25, 1787 and July 5, 1787. Regardless, for every day that there were multiple speaking delegates, delegate verbosity in Yates' notes were coded in the same way as in Madison's notes. It was then determined what proportion of text was devoted to each delegate in both Madison and Yates' notes. To determine if delegates were subject to bias in either set of notes, t-tests were done to determine if the proportions of text are statistically different from one another.

– Table 4 about here –

Table 4 presents a summary of the results of the t-tests to determine bias in the notes of Madison and Yates. In all, 36 delegates had speeches from the same day recorded by both Madison and Yates. Of these 36, 32 are testable. Of those 32 delegates, only three exhibit statistically significant bias: Benjamin Franklin (PA), Richard Dobbs Spaight (NC), and James Wilson (PA). Madison significantly over-reports Franklin's participation relative to Yates. Franklin's W-NOMINATE score is -0.524 making him closer to Yates' ideological position than Madison's. A possible explanation of the bias for Franklin in Madison's notes is that most of Franklin's contributions to the proceedings of the Convention came in the form of prepared written speeches. Madison then received copies of these speeches (Farrand 1966 Vol. I, xvi), which Yates did not. This might explain the discrepancy in the proportion of text related to Franklin between Madison and Yates' notes.

Madison also over-reports Spaight's contribution to the Convention relative to Yates. Spaight's W-NOMINATE score is -0.165 making him an ideologically moderate delegate. He also only spoke a handful of times. The reason for the significance in proportion of text reported for Spaight between Madison and Yates comes down to the fact that Yates does not record Spaight as having spoken during debate at all. Since Spaight only spoke

16

a few times and never at great length, it is possible that Yates simply overlooked his contributions.

Finally, Yates over-reports Wilson's contribution to the Convention proceedings relative to Madison. This is surprising given that Wilson has the third most recorded text of all delegates from Madison's notes. Wilson, like Madison, has a W-NOMINATE score of 1. There is no immediate explanation of why Yates allocates a greater proportion of text to Wilson than Madison does. Regardless of the finding that Madison seems to bias his notes against Wilson, this does not affect any of the findings in this paper. If anything, this suggests that the data are biased against the presented results. Still, only 3 of the 32 tested delegates presented evidence of bias (less than ten percent), suggesting that bias is not a problem in using Madison's notes as a data source.

Discussion

This paper examines the relationship between ideology and participation in the floor debates of the Constitutional Convention. I show that Convention delegates with more extreme ideological scores participated more often and at greater length than moderate delegates. These results hold true under a battery of robustness checks, including controlling for issue topic, temporal effects, and different measures of participation.

The initial findings raise an interesting and noteworthy result regarding the use of the debates of the Constitutional Convention as a basis for original intent by both politicians and the US Courts.[24] The finding that ideologically extreme delegates to the Constitutional Convention participated in floor debate at significantly higher rates than moderate delegates, in terms of both the frequency and volume of floor speeches, undermines the veracity of claims made on the basis of original intent that use the proceedings of the Convention as their evidence. If legal scholars and jurists do wish to make use of original intent, the results of this paper show that in order to avoid potentially misleading claims, they need to consider the full decision making process of the Convention.[25]

The most famous and oft-quoted explanation of American constitutionalism, *The*

Federalist Papers, was primarily written by two of the most extreme delegates at the Constitutional Convention, Alexander Hamilton and James Madison. It is well known that *The Federalist Papers* were written to persuade citizens in New York and the rest of the states of the merits of the Constitution. However, it is less widely known how extreme Madison and Hamilton were relative to other Convention delegates. Since the opinions of moderate delegates were overshadowed by contributions from ideologically extreme delegates, some political and philosophical explanations of the Constitution may be unrepresentative of the reasoning actually used to craft the structure of American government. While the collected papers of individuals like Hamilton and Madison are easily obtained, those of less verbose and more centrist delegates like Abraham Baldwin, Daniel of St. Thomas Jenifer, and William Richardson Davie are much more difficult to come by and infrequently cited.

A illustrative example of the danger of relying on the Convention debates for determining original intent can be found in the concurring opinion of Justice Thomas, a noted originalist (Greene, 2011), in *Perez v. Mortgage Bankers Association, 135 S. Ct. 1199* (2015). In discussing the appropriateness of Court deference to executive agencies,[26] Thomas, invoking the thinking of the "the Framers" cites Madison's discussion of checks and balances in Farrand (1966, p. 77, V2). However, he does so without context (Madison was arguing for the creation of a council of revision) and without referencing the relevant viewpoints of the delegates prior to and following Madison's cited portion of debates. He also does not note that Madison's viewpoint on this matter had previously been debated and voted down, was again defeated in this instance, and would be defeated again later in the Convention. This debate was lengthy, taking up more than half of the day on July 21, 1787. Nine other delegates contributed to this recorded debate, including Wilson, Gorham, Ellsworth, Mason, Gerry, Strong, G. Morris, L. Martin, and Rutledge. Additionally, not a single delegate from this debate at the Convention is arguing against the concept of checks and balances. Rather, the delegates are arguing over the correct form of checks and balances. Justice Thomas could just as easily cite Strong's statement that "the power of making ought to be kept distinct from that of expounding the laws."

(Farrand, 1966, p. 75, V2) This is a clear and concise endorsement of the concept of separation of powers, one that would seem to serve Thomas's purpose in his concurrence, namely criticizing the expanded legislative prerogative of the executive branch.[27]

Thomas's use of the Convention debates in *Perez* exemplifies the problem of relying on the Convention records for determining the intent of the Convention delegates. Though Thomas does not cite the nine other delegates who engaged with Madison in debate over the council of revision, only Rutledge, Strong, and Ellsworth could be described as moderate delegates (and Ellsworth's inclusion in that list is suspect given Ellsworth would refuse to sign the drafted Constitution at the conclusion of the Convention). What this means is that, even had Thomas cited the debates more broadly, he would still be largely confined to choosing from voices at the ideological periphery of the Convention.

Thus, there exists a bias against centrist delegates in both those who draw on the proceedings of the Convention as well as those who look to post-Convention writings by Convention delegates. The results here suggest that those who call for "originalism" in the reading of the Constitution may have less firm ground to stand on than they believe. Since only a portion of original intent is actually known from the records of the Convention, those who invoke original intent are actually drawing on a historical record that is biased in favor of ideologues.

As I have shown in this paper, Convention proceedings were often dominated by a small but vocal contingent. These more visible delegates were often on opposite sides of the debate resulting in a less vocal center. Heckelman and Dougherty (2013) have identified the median voter for several different periods of the Convention. In all three periods of their analysis, the pivotal position is slightly to the right of zero (i.e. positively valued) on the W-NOMINATE scale upon which delegates are placed making the ideological median of the Convention slightly more pro-national government (Heckelman and Dougherty, 2013). The pivot moves more towards the pro-national side as the Convention goes on and certain anti-national government delegates (e.g. Yates and Lansing) leave the Convention. But are these median delegates less likely to participate? During the early part of the Convention, the pivotal delegates are nearly silent, while the dele-

gates who are pivotal during the latter stages of the Convention have just above average participation rates.

Though this analysis does not say anything about ideologically extreme delegates' success or failure in terms of their policy goals relative to more ideologically moderate delegates, it does provide evidence that more centrist legislators participated in floor debate at lower observed levels than more ideologically extreme delegates. An implication of this finding is that, assuming unidimensional preferences, delegates who did not engage in a great deal of debate may have been more likely to see their preferred motions adopted. Future research on the Constitutional Convention should investigate a possible relationship between legislative success at the Convention and delegate verbosity. By linking participation to outcomes, the impact of the participation bias at the Convention can be better understood. This also has implications for understanding participation in deliberative bodies in general. Extensions of this work should incorporate the non-static nature of the convention and consider how delegate behavior changed over the course of the Convention as well as by issue area. It is conceivable that while ideologically extreme delegates were more likely to speak up more often and at greater length than their moderate peers in general, perhaps this is a phenomenon that only holds under certain circumstances. Future research on the topic of delegate verbosity at the Constitutional Convention might also seek to better understand what particular factors influenced the length of individual speeches.

Declaration of Conflicting Interests

Funding

Notes

[1]For more on the historical record of the Constitutional Convention and the source material of Farrand's *Records of the Federal Convention of 1787*, see Farrand's "Introduction" to that work and an article by the editor of the *Supplement to Max Farrand's Records of the Federal Convention*, Huston's "Creation of the Constitution: The Integrity of the Documentary Record" (1986).

[2]The official Journal was kept by Convention Secretary William Jackson who was not himself a delegate to the Convention.

[3]Madison's notes, which provide a more detailed account of Convention activities, were only published after the death of the last Convention delegate in 1836.

[4]For possible solutions to this problem see Maggs (2007).

[5]Another potential explanation can be found in the political psycology literature. Recent research suggests that every individual's personality is composed of five traits (Mondak et al., 2010). Of these five traits, the same trait, extraversion, is associated with both strong levels of partisan attachment and higher levels of political attachment (Gerber et al., 2011). Personality trait political psychology might explain the link between ideological extremism and increased participation at the Constitutional Convention but it is unclear how to assess this empirically.

[6]Delegate ideology is measured using a single dimension estimation of W-NOMINATE published by Heckelman and Dougherty (2013). As noted by Heckelman and Dougherty (2013), the number of dimensions are dictated by the researcher. However, a single dimension correctly classifies 81 percent of all delegate roll calls (Heckelman and Dougherty, 2013, p. 416). The first dimension of W-NOMINATE correctly classifies 83 percent of House votes and 80 percent of Senate votes from 1789-1985. Adding a second dimension to the Convention W-NOMINATE estimates only improves vote classification by another four percentage points (Heckelman and Dougherty, 2013, p. 416). Thus, not only is the

explanatory power of the single dimension of W-NOMINATE for the Convention comparable to W-NOMINATE for the House and Senate, but a second dimension offers little additional explanatory power. As to the dominant dimension uncovered by NOMINATE, I describe it as "based on preferences over the scope of the proposed national government" because Heckelman and Dougherty (2013) describe the dimension as one of nationalism and localism. Localism-nationalism is just one potential dimension. Pope and Treier (2012) also suggest apportionment and separation of powers. Heckelman and Dougherty (2013) make the claim that the uncovered dimension is one of localism and nationalism because of how known localists and nationalists map onto the revealed ideological scale (Heckelman and Dougherty, 2013, p. 416). Heckelman and Dougherty (2013) use three different sources to corroborate the placement of known localists and nationalists and have perfect agreement regarding the placement of delegates. Furthermore, these identified delegates appear at the extreme ends of the revealed scale, suggesting that the localism-nationalism dimension is the correct one. Importantly, for the purposes of this paper, it does not actually matter if the dimension is one of localism versus nationalism but rather the fact that the revealed preference scaling is the single most dominant dimension at the convention and that it provides tremendous explanatory power in correctly classifying delegate votes. The interest of the paper is to examine how delegate ideology impacted participation. Whatever the substance of the dominant dimension, it is an accurate approximation of delegates' relative distance from one another in the issue space as revealed by their votes. For more on the robustness of W-NOMINATE at the Convention, see the "W-NOMINATE at the Convention" section of this paper's supporting materials.

[7]See Figure 4 in the supporting materials for a visual representation of the distribution of *Speech Number*.

[8]Vertical text space was chosen over the counting of lines as a way in which to make the coding process more efficient.

[9]See Figure 5 in the supporting materials for a visual representation of the density of

Verbosity Length.

[10]Information about the coding procedure used to create this original data set is available upon request.

[11]See section 6 for more on the use of W-NOMINATE in this paper.

[12]While this kind of transformation on NOMINATE is typically unadvised, because the median delegate's ideology is 0.002, taking the distance between every delegate and the median delegate is substantively equivalent to taking the absolute value of delegate ideology.

[13] Table 5 can be found in the supporting materials and presents descriptive statistics of the variables.

[14]See Figure 5 in the supporting materials for a visual representation of the density of *Verbosity Length.*

[15]See Figure 7 in the supporting materials for a visual examination of these alternate forms.

[16]One model does not significantly outperform the other according to both Cox and Davidson-MacKinnon J tests.

[17]Breusch-Pagan tests for heteroskedasticity proved significant at the 0.05 level for both models giving evidence against the null hypothesis of homoskedasticity. Further diagnostic tests indicate that autocorrelation is not an issue.

[18]First, standard errors were bootstrapped to avoid unsupportable distribution assumptions. Specifically, a non-parametric bootstrap was used to calculate standard errors of the coefficients. The bootstrapping process proceeds by first assuming the distribution of the sample approximates the population distribution as required for a non-parametric bootstrap. Next, the data is sampled with replacement. The sampled data set is then used to estimate the Poisson regression and store the coefficients. The previous step is

then repeated 500 times. Finally, the standard errors are calculated from the distribution of bootstrapped coefficients. Second, because of the apparent extended dispersion of *Speech Number* (as evidenced in Figure 4 in the supporting materials), a Negative Binomial model was also considered. That model was not used because in multiple model specifications the α contagion/dispersion parameter was never statistically different than 1, strongly suggesting that in fact the data is Poisson distributed.

[19]Twelve observations are dropped because of their status as outliers. More on the impact of these outliers on the analysis is discussed later in this section. Table 7 contains descriptive statistics of the data and variables used in this section from the new dataset of Convention speeches. Table 7 can be found in the supporting materials.

[20]Since some of the 51 delegates in this data set did not have enough individual roll calls to calculate W-NOMINATE scores, I use a comparable ideological value for these delegates. These values are directly comparable to the W-NOMINATE scores of the other Convention delegates though they are derived using a censored heteroskedastic Tobit model (Heckelman and Dougherty, 2013).

[21]Alternative variable specifications were run incorporating both longer and shorter windows with no discernible effect.

[22]Breusch-Pagan tests for heteroskedasticity proved significant at the 0.05 level for both models giving evidence against the null hypothesis of homoskedasticity. Further diagnostic tests indicate that residuals may not be normally distributed and that autocorrelation may be an issue. To address this, the models were re-estimated using Feasible Generalized Least Squares which produced results stronger than as those reported in Table 3.

[23]To address concerns about the dimensions of debate at the Convention driving participation, models including issue area fixed effects were also estimated. These models produced substantively identical results to those reported in Table 3. Ideally the analysis would be conducted using only speeches from different issue areas with issue area specific delegate NOMINATE scores. However, the roll call matrix is too sparse to do

so. Therefore the analysis is conducted on the entirety of the Convention rather than on topic subsets.

[24]For more on the use of the Constitutional Convention by modern courts, see Farrand (1966, 1987), Corley et al. (2005), Post and Siegel (2006), Strang (2010), and Greene (2011).

[25]This problem is related to, but different than, issues in preference aggregation using majority voting (e.g. Arrow, 1951) or utilizing legislative intent for the purposes of interpretation is likewise problematic (Shepsle, 1992).

[26]This issue has previously arisen in *Bowles v. Seminole Rock & Sand Company, 325 US 410, S. Ct. 1215.* (1945) and *Auer v. Robbins, 519 U.S. 452, 117 S. Ct. 905* (1997) and was recently raised, again by Thomas, in a dissent against a denial of certiorari of *United Student Aid Funds, Inc. v. Bible, 136 S. Ct. 1607* (2016).

[27]Later in the same concurring opinion, Thomas cites a snippet of the Convention debates, misidentifying Rufus King as a delegate from Maryland (he was from Massachusetts), and ignoring the counterpoint made by Wilson in the very next Convention speech. In the same paragraph, Thomas cites Federalist 78 written by Alexander Hamilton.

References

Arnold, R Douglas. 1990. *The Logic of Congressional Action.* Yale University Press.

Arrow, Kenneth J. 1951. *Social Choice and Individual Values.* Wiley.

Auer v. Robbins, 519 U.S. 452, 117 S. Ct. 905. 1997.

Bailyn, Bernard. 1967. *The Ideological Origins of the American Revolution.* Harvard University Press.

Baron, David P and John A Ferejohn. 1989. "Bargaining in Legislatures." *American Political Science Review* 83(04):1181–1206.

Beard, Charles A. 1966. *An Economic Interpretation of the Constitution of the United States.* Dover Publications.

Bilder, Mary Sarah. 2015. *Madison's Hand: Revising the Constitutional Convention.* Harvard University Press.

Bowles v. Seminole Rock & Sand Company, 325 US 410, S. Ct. 1215. 1945.

Brown, Robert Eldon. 1956. *Charles Beard and the Constitution: A Critical Analysis of "An Economic Interpretation of the Constitution".* Princeton University Press.

Buchanan, William, Heinz Eulau, LeRoy C Ferguson and John C Wahlke. 1960. "The Legislator as Specialist." *The Western Political Quarterly* pp. 636–651.

Corley, Pamela C, Robert M Howard, David C Nixon et al. 2005. "The Supreme Court and Opinion Content: The Use of the Federalist Papers." *Political Research Quarterly* 58(2):329–340.

Diermeier, Daniel and Pohan Fong. 2008. Endogenous Limits on Proposal Power. Technical report Discussion paper: Center for Mathematical Studies in Economics and Management Science.

Diermeier, Daniel and Pohan Fong. 2011. "Legislative Bargaining with Reconsideration." *The Quarterly Journal of Economics* 126(2):947–985.

Dougherty, Keith L and Jac C Heckelman. 2006. "A Pivotal Voter from a Pivotal State: Roger Sherman at the Constitutional Convention." *American Political Science Review* 100(02):297–302.

Dougherty, Keith L and Jac C Heckelman. 2008. "Voting on Slavery at the Constitutional Convention." *Public Choice* 136(3-4):293–313.

Dougherty, Keith L and Jac C Heckelman. 2012. "Delegate Positions on All Substantive Roll Calls at the United States Constitutional Convention, 1787 [Computer file]." *Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]* . `http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/33865/version/2`, published 01-27-2016.

Dougherty, Keith L, Jac C Heckelman, Paul Carlsen and David A Gelman. 2012. "A New Dataset of Delegate Positions on All Substantive Roll Calls at the US Constitutional Convention." *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 45(3):135–141.

Eggers, Andrew C and Arthur Spirling. 2014. "Ministerial Responsiveness in Westminster Systems: Institutional Choices and House of Commons debate, 1832–1915." *American Journal of Political Science* 58(4):873–887.

Farrand, Max. 1966. *The Records of the Federal Convention.* Vol. 1-3. Yale University Press.

Farrand, Max. 1987. *The Records of the Federal Convention.* Vol. 4. Yale University Press.

Fenno, Richard F. 1973. *Congressmen in Committees.* Little Brown.

Fenno, Richard F. 1978. *Home Style: Representatives in Their Districts.* Little Brown.

Fong, Pohan and Jianpeng Deng. 2011. "Dynamic Legislative Bargaining with Endogenous Proposers." Working paper.

Francis, Wayne L. 1962. "Influence and Interaction in a State Legislative Body." *American Political Science Review* 56(04):953–960.

Gerber, Alan S, Gregory A Huber, David Doherty and Conor M Dowling. 2011. "The Big Five Personality Traits in the Political Arena." *Annual Review of Political Science* 14:265–287.

Greene, Jamal. 2011. "The Case for Original Intent." *George Washington Law Review* 80:1683–1706.

Hall, Richard L. 1996. *Participation in Congress.* Yale University Press.

Heckelman, Jac C and Keith L Dougherty. 2007. "An Economic Interpretation of the Constitutional Convention of 1787 Revisited." *The Journal of Economic History* 67(04):829–848.

Heckelman, Jac C and Keith L Dougherty. 2010. "Personality Interests at the Constitutional Convention: New Tests of the Beard Thesis." *Cliometrica* 4(2):207–228.

Heckelman, Jac C and Keith L Dougherty. 2013. "A Spatial Analysis of Delegate Voting at the Constitutional Convention." *The Journal of Economic History* 73(02):407–444.

Hirshleifer, Jack. 1991. "The Paradox of Power." *Economics & Politics* 3(3):177–200.

Hutson, James H. 1986. "Creation of the Constitution: The Integrity of the Documentary Record." *Tex. L. Rev.* 65:1.

Karpowitz, Christopher F, Tali Mendelberg and Lee Shaker. 2012. "Gender Inequality in Deliberative Participation." *American Political Science Review* 106(03):533–547.

Kovenock, David. 1973. "Influence in the US House of Representatives: A Statistical Analysis of Communications." *American Politics Research* 1(4):407–464.

Maggs, Gregory E. 2007. "A Concise Guide to the Federalist Papers as a Source of the Original Meaning of the United States Constitution." *BUL Rev.* 87:801.

Maltzman, Forrest and Lee Sigelman. 1996. "The Politics of Talk: Unconstrained Floor Time in the US House of Representatives." *The Journal of Politics* 58(03):819–830.

Martin, Lanny W and Georg Vanberg. 2004. "Policing the Bargain: Coalition Government and Parliamentary Scrutiny." *American Journal of Political Science* 48(1):13–27.

Mayhew, David R. 1974. *Congress: The Electoral Connection.* Yale University Press.

McDonald, Forrest. 1958. *We the People: The Economic Origins of the Constitution.* Chicago University Press.

McGuire, Robert A. 1988. "Constitution Making: A Rational Choice Model of the Federal Convention of 1787." *American Journal of Political Science* pp. 483–522.

McGuire, Robert A. 2003. "To Form a More Perfect Union: A New Economic Interpretation of United States Constitution." *OUP Catalogue* .

McGuire, Robert A and Robert L Ohsfeldt. 1986. "An Economic Model of Voting Behavior Over Specific Issues at the Constitutional Convention of 1787." *The Journal of Economic History* 46(01):79–111.

Mondak, Jeffery J, Matthew V Hibbing, Damarys Canache, Mitchell A Seligson and Mary R Anderson. 2010. "Personality and Civic Engagement: An Integrative Framework for the Study of Trait Effects on Political Behavior." *American Political Science Review* 104(01):85–110.

Pearson, Kathryn. 2013. Congresswomens Pursuit of Power in a Partisan Environment. In *Congress Reconsidered, 10th Edition*, ed. Lawrence C Dodd and Bruce I Oppenheimer. SAGE pp. 59–89.

Pearson, Kathryn and Logan Dancey. 2011. "Speaking for the Underrepresented in the House of Representatives: Voicing Women's Interests in a Partisan Era." *Politics & Gender* 7(04):493–519.

Perez v. Mortgage Bankers Association, 135 S. Ct. 1199. 2015.

Poole, Keith T. 2005. *Spatial Models of Parliamentary Voting.* Cambridge University Press.

Poole, Keith T and Howard Rosenthal. 1985*a.* "The political economy of roll-call voting in the multi-party congress of the United States." *European Journal of Political Economy* 1(1):45–58.

Poole, Keith T and Howard Rosenthal. 1985*b*. "A Spatial Model for Legislative Roll Call Analysis." *American Journal of Political Science* pp. 357–384.

Poole, Keith T and Howard Rosenthal. 1991. "Patterns of Congressional Voting." *American Journal of Political Science* pp. 228–278.

Poole, Keith T and Howard Rosenthal. 2007. *Ideology and Congress: A Political Economic History of Roll Call Voting.* New York: Transaction Publishers.

Poole, Keith T, Jeffrey B Lewis, James Lo and Royce Carroll. 2008. "Scaling Roll Call Votes with W-NOMINATE in R." *Journal of Statistical Software* 10. Available at SSRN 1276082.

Pope, Jeremy C and Shawn Treier. 2011. "Reconsidering the Great Compromise at the Federal Convention of 1787: Deliberation and Agenda Effects on the Senate and Slavery." *American Journal of Political Science* 55(2):289–306.

Pope, Jeremy C and Shawn Treier. 2012. "Mapping Dimensions of Conflict at the Federal Convention of 1787." *Legislative Studies Quarterly* 37(2):145–174.

Pope, Jeremy C and Shawn Treier. 2015. "Voting for a Founding: Testing the Effect of Economic Interests at the Federal Convention of 1787." *The Journal of Politics* 77(2):519–534.

Post, Robert and Reva Siegel. 2006. "Originalism as a Political Practice: The Right's Living Constitution." *Fordham Law Review* 75:545–574.

Proksch, Sven-Oliver and Jonathan B Slapin. 2012. "Institutional Foundations of Legislative Speech." *American Journal of Political Science* 56(3):520–537.

Rakove, Jack N. 1996. *Original Meanings: Politics and Ideas in the Making of the Constitution.* Knopf.

Robertson, David Brian. 2005. "Madison's Opponents and Constitutional Design." *American Political Science Review* 99(02):225–243.

Robertson, David Brian. 2006. "A Pivotal Politician and Constitutional Design." *American Political Science Review* 100(02):303–308.

Shepsle, Kenneth A. 1992. "Congress is a 'They,' not an 'It': Legislative Intent as Oxymoron." *International Review of Law and Economics* 12(2):239–256.

Smith, Steven S. 1989. *Call to Order: Floor Politics in the House and Senate.* Brookings Institution.

Strang, Lee J. 2010. "The most Faithful Originalist: Justice Thomas, Justice Scalia, and the Future of Originalism." *University of Detroit Mercy Law Review* 88:873–882.

United Student Aid Funds, Inc. v. Bible, 136 S. Ct. 1607. 2016.

Wood, Gordon S. 1967. *The Creation of the American Republic, 1776-1787.* UNC Press Books.

Table 1: Regression Results of OLS Models for *Verbosity Length*

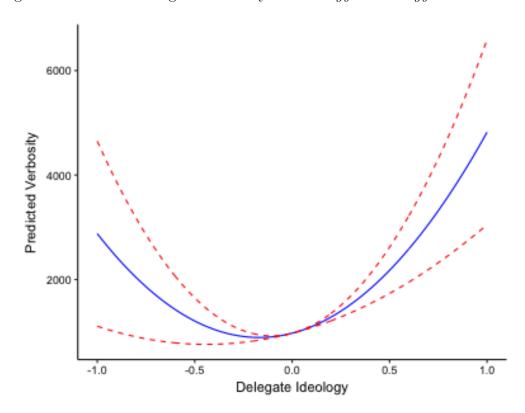| Variable	Quadratic Model	Absolute Model
Intercept	-2915.716** (1143.019)	-3330.261*** (1221.190)
Ideology	971.180 (689.352)	
Abs. Ideology		3187.881** (1267.190)
Ideology^2	2876.598** (1320.299)	
Age	14.240 (30.628)	-9.425 (35.419)
College	1298.796* (645.117)	1404.592** (616.324)
Leg. Exp.	106.837 (17.317)	147.402 (104.444)
Days Present	17.317 (13.930)	24.695* (14.465)
N	41	
R^2	0.380	0.331
AIC	754.269	755.375

Note: Robust standard errors are in parenthesis. Significance codes: "*" = significant at the .1 level, "**" = significant at the .05 level, "***" = significant at the .01 level.

Table 2: Regression Results of the Poisson Model for *Speech Number*

Variable	Quadratic Model	Absolute Model
Intercept	1.416*** (0.165)	1.657*** (0.146)
Ideology	0.169*** (0.043)	
Ideology²	0.710*** (0.076)	
Abs. Ideology		0.789*** (0.065)
Age	-0.002 (0.003)	-0.010*** (0.002)
College	0.416*** (0.081)	0.362*** (0.057)
Leg. Exp.	0.055*** (0.006)	0.058*** 0.004
Days Present	1.021*** (0.002)	0.021*** 0.002
N	41	
$\mathcal{L}$	-980.991	7438.096

Note: Presented with bootstrapped standard errors in parenthesis. Significance codes: "*" = significant at the .1 level, "**" = significant at the .05 level, "***" = significant at the .01 level.
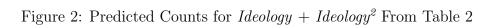
Table 3: Regression Results of OLS Models for *Speech Length*

Variable	Quadratic Model	Absolute Model
Intercept	1.110 (18.117)	-13.617 (19.402)
Abs. Ideology		55.792*** (7.056)
Ideology	3.392 (3.551)	
Ideology^2	43.647*** (6.652)	
Prev. Speaker	4.323 (3.602)	3.405 (3.937)
Age	1.169*** (0.314)	1.062*** (0.299)
College	9.292 (5.670)	11.127** (5.482)
Leg. Exp.	-0.932** (0.457)	-0.610 (0.411)
Days Present	-0.194 (0.169)	-0.147 (0.172)
Slave Owner	13.842*** (4.922)	12.368** (4.970)
N	2309	
R^2	0.028	0.029
AIC	27939.12	27935.02

Note: Robust standard errors are in parenthesis. Significance codes: "*" = significant at the .1 level, "**" = significant at the .05 level, "***" = significant at the .01 level.

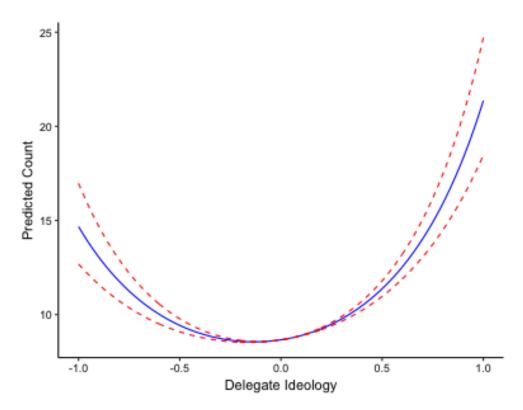Table 4: Comparing Proportions of Delegate Text in the Notes of Madison and Yates

Delegate	N	Madison Mean	Yates Mean	Pr > |t|
Baldwin	1	0.038	0.029	NA
Bedford	5	0.091	0.100	0.868
Brearley	1	0.022	0.007	NA
Broom	1	0.006	0.000	NA
Butler	15	0.028	0.046	0.340
Davie	2	0.037	0.025	0.800
Dayton	3	0.016	0.010	0.430
Dickinson	10	0.055	0.064	0.817
Ellsworth	11	0.051	0.076	0.424
Franklin	8	0.205	0.062	0.082*
Gerry	15	0.079	0.072	0.744
Gorham	18	0.022	0.017	0.658
Hamilton	13	0.063	0.076	0.718
Jenifer	2	0.023	0.027	0.577
Johnson	3	0.060	0.068	0.875
King	12	0.055	0.052	0.890
Lansing	5	0.080	0.050	0.612
Madison	21	0.260	0.208	0.396
A. Martin	2	0.016	0.033	0.690
L. Martin	8	0.033	0.110	0.333
Mason	14	0.086	0.083	0.923
G. Morris	3	0.332	0.318	0.951
R. Morris	2	0.006	0.000	0.171
Paterson	4	0.075	0.086	0.920
Pierce	3	0.020	0.063	0.393
C. Pinckney	14	0.097	0.092	0.924
C.C. Pinckney	9	0.042	0.039	0.909
Randolph	14	0.114	0.195	0.356
Read	8	0.041	0.029	0.424
Rutledge	12	0.028	0.016	0.245
Sherman	19	0.057	0.042	0.386
Spaight	3	0.017	0.000	0.091*
Strong	2	0.017	0.006	0.494
Washington	1	0.011	0.000	NA
Williamson	13	0.026	0.014	0.214
Wison	19	0.133	0.189	0.065*

Note: Significance codes: "*" = significant at the .1 level, "**" = significant at the .05 level, "***" = significant at the .01 level.
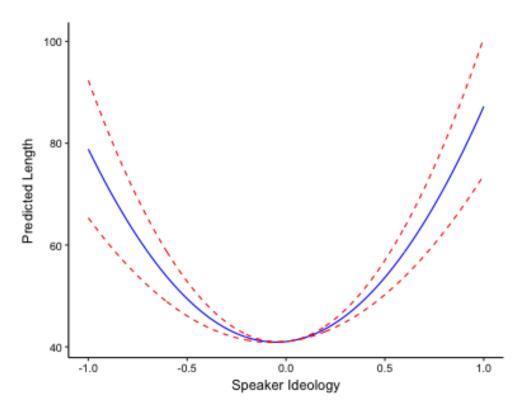
Figure 1: Predicted Delegate Verbosity for $Ideology + Ideology^2$ From Table 1

Figure 2: Predicted Counts for *Ideology* + *Ideology²* From Table 2

Figure 3: Predicted Speech Length for a Median Delegate

Supporting Materials to the Paper "Ideology and Participation: Examining the Constitutional Convention of 1787"

Material from "Aggregate Delegate Analysis"

Table 5: Descriptive Table of the Variables

Variable	Mean	Median	St. Dev.	Min	Max
Speech Number	56.861	32	62.45	0	223
Verbosity Length	1889.61	716	2528.99	0	12149
Verbosity Type	1.78	2	0.79	1	3
Ideology	0.022	0.002	0.67	-1	1
Ideology^2	0.435	0.334	0.38	< 0.001	1
Abs. Ideology	0.569	0.578	0.38	0.002	1
Age	43.171	42	12.18	26	81
College	0.683	1	0.47	0	1
Leg. Exp.	8	6	5.86	0	29
Days Present	67.829	78	20.31	10	85
N			41		

Figure 4: Distribution of the Dependent Variable, *Speech Number*

Figure 4 presents the distribution of *Speech Number*, the dependent variable of the

Figure 5: Density of the Dependent Variable, *Verbosity Length*
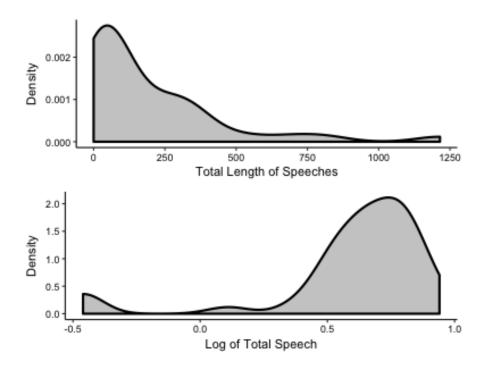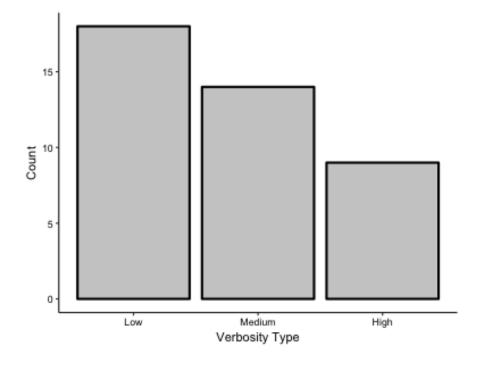

Figure 6: Distribution of the Dependent Variable, *Verbosity Type*

Poisson model in the "Count Analysis" section. Figure 5 presents the density of *Verbosity Length*, the dependent variable of the OLS models presented in the "Analysis of Delegate Verbosity" section. Figure 5 also shows the density of the log of *Verbosity Length* which was used as the dependent variable in a robustness check of the models presented

in Table 1. Figure 6 presents the distribution of *Verbosity Type*, the dependent variable used in the cross tabs presented in the "Frequency Analysis" section.
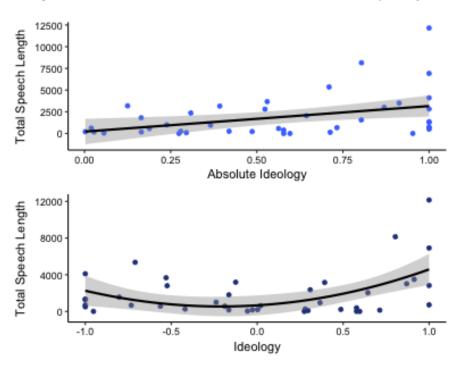
Figure 7: Functional Form Considerations, *Verbosity Length*

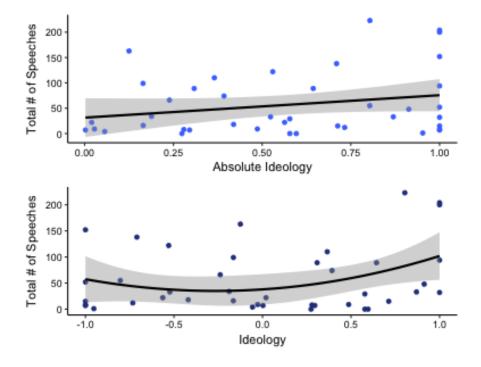Figure 8: Functional Form Considerations, *Speech Number*

Figure 7 shows two scatter plots of the data points for *Verbosity Length* and delegate ideology along with a bivariate regression line and 95% confidence interval for the indi-

cated functional form of delegate ideology. Figure 8 shows two scatter plots of the data points for *Verbosity Length* and delegate ideology along with a bivariate regression line and 95% confidence interval for the indicated functional form of delegate ideology.

Frequency Analysis

For the frequency analysis, an ordered categorical variable, *Verbosity Type* is used to describe the type of speaker a delegate was based on the amount that they spoke. Using *Verbosity Length*, *Verbosity Type* was constructed by making cut points one half of a standard deviation above and below the mean of *Verbosity Length*. Each delegate was then sorted into one of these three types (low, medium, or high) based on their own *Verbosity Length* value.[28]

To assess initial validity of my hypotheses regarding verbosity and ideology, I perform a simple frequency analysis (Chi-square test of independence) of *Verbosity Type* and a collapsed version of *Absolute Ideology*. The collapsed version of *Absolute Ideology*, *Ideology Type*, was created in same way as *Verbosity Type*. Table 6 contains the results of the frequency analysis (done using cross tabs).

Table 6: Crosstabs Results For *Verbosity Type* & *Ideology Type*

		Ideology Type			
		Low	Med.	Hi.	Total
Verb. Type	Low	9	7	2	18
	Med.	4	2	8	14
	Hi.	2	2	5	9
	Total	15	11	15	41

P-value of the χ^2 test of independence = 0.05

The expectation of the hypothesis is that the diagonal boxes going from top-left to bottom-right ought to have the highest frequency of observations for their particular row. While that is not exactly observed, the frequencies are not far off and it is enough to reject the null hypothesis of independence across observations.[29] These results are robust to variations of *Verbosity Type* and *Ideology Type* within a reasonable range. The initial evidence is that ideologically extreme Convention delegates spoke more at the
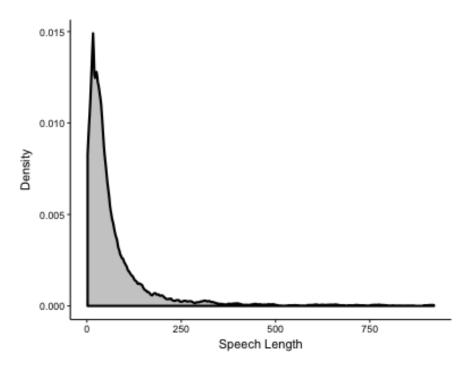
Constitutional Convention.

Material from "Analysis of Convention Speeches"

Table 7: Descriptive Table of the Variables

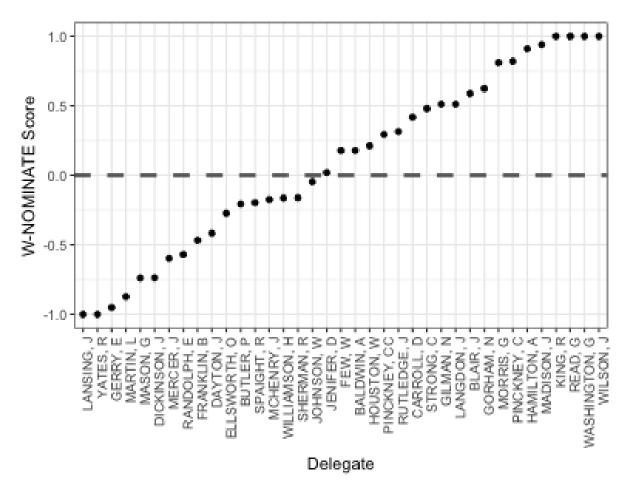| Variable	Mean	Median	St. Dev.	Min	Max
Speech Length	68.853	37	103.94	2	920
Ideology	0.181	0.37	0.72	-1	1
Ideology^2	0.553	0.64	0.38	<0.001	1
Abs. Ideology	0.671	0.80	0.32	.002	1
Prev. Speaker	0.814	0.787	0.37	0	2
Days Present	75.898	84	14.16	6	85
Age	44.219	43	11.5	26	81
College	0.705	1	0.46	0	1
Leg. Exp.	10.063	8	6.73	0	29
Slave Owner	0.385	0	0.49	0	1
N	2309				

Figure 9 presents the density of *Speech Length*, the dependent variable of the OLS models presented in the "Analysis of Convention Speeches" section.
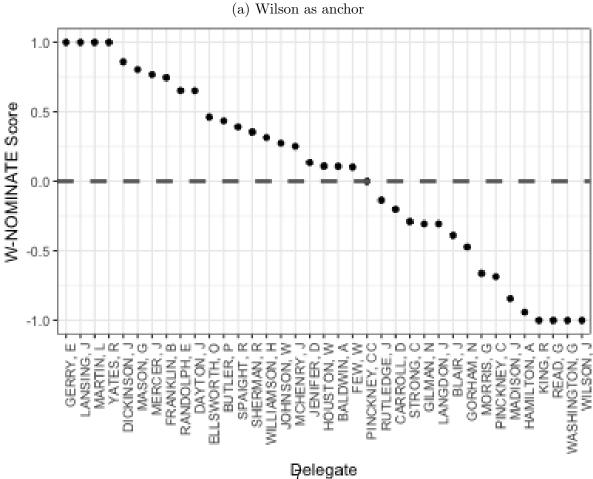
Figure 9: Density of the Dependent Variable, *SpeechLength*

W-NOMINATE at the Convention

Figure 10a and Figure 10b present alternative estimates of single dimension W-NOMINATE using data from Dougherty and Heckelman (2012) and the W-NOMINATE Program (Poole and Rosenthal, 1985b,a, 1991; Poole, 2005; Poole and Rosenthal, 2007; Poole et al., 2008). These figures use James Wilson and Elbridge Gerry as the single anchor point for the NOMIANTE algorithm. While the NOMINATE scores are in the two estimates are inverses of each other (as result of using anchors in ideological opposition to one another), the orderings remain consistent, showing that changing the anchor does not result in a substantive change in NOMINATE results. Both of these figures can be compared to Figure 11 which shows the single dimensional W-NOMINATE scores of Heckelman and Dougherty (2013) used for analysis in this paper. With few exceptions, the placement of individuals in ideological space is consistent between the Heckelman and Dougherty (2013) scores and the re-estimated scores I present. The differences can be attributed to a difference in the data. Heckelman and Dougherty (2013) use the original version of the roll call matrix (published August 2, 2012) while only the version published January 27, 2016 is now available through ICPSR. The key difference between the two is a recoding of 19 delegate codes which cut the number of estimated delegates from 42 to 37 (Dougherty and Heckelman, 2012). A reduction in the number of delegate roll call matrix changes the line of best fit and thus the ordering and coordinates of delegates. Crucial to showing the robustness of the measure is the fact that individuals at the far ends of the ideological space remain at the extremes despite slightly different data and various delegates used as anchors.

(a) Wilson as anchor

(b) Gerry as anchor

Figure 10: Single Dimension W-NOMINATE with Different Anchors

Figure 11: Figure 1 from Heckelman and Dougherty (2013, p. 415): Delegate
W-NOMINATE Scores and Bootstrapped Standard Errors