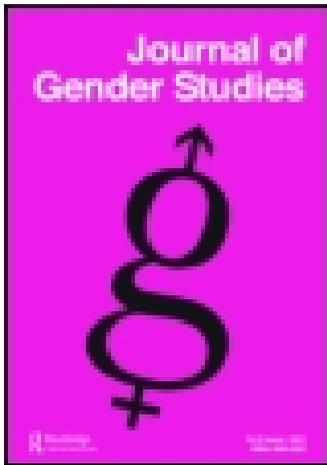


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Gender and vote revelation strategy in the United States Congress

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Gender and vote revelation strategy in the United States Congress

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ABSTRACT

Legislators approach each election as if they might lose. Electoral insecurity coupled with gender stereotypes held by voters and lawmakers alike may lead female legislators to communicate more voting decisions to voters as a signal of their policy-driven efforts. Using an original data-set of over 40,000 official e-newsletters and Real Simple Syndication feeds sent by members of Congress, I show that women reveal more roll call votes to constituents than their male counterparts. Significant differences exist between male and female incumbents in the frequency of vote revelation despite the fact that male and female legislators use these communication techniques to reach constituents at the same rates and call attention to similar bills. These differences persist after accounting for the effects of party, seniority, district fit, and other potential confounds. Women highlight their ability to fulfill the roles expected of lawmakers by explicitly signaling involvement in lawmaking activities more frequently than men. In a second test, I analyze the types of bills legislators reveal votes on and find no differences between men and women.

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Introduction

Mayhew (1974) and Fenno (1978), among others, argue that no legislator ever feels 'secure' and that all lawmakers approach elections with a fear they may lose, despite the fact that incumbent success levels are commonly over 90% (Levitt & Wolfram, 1997). Research regarding women in politics repeatedly reports that for Congressional elections, women do roughly as well as men in terms of funds raised and votes won (Burrell, 1998; Darcy, Welch, & Clark, 1987; Dolan, 1998; Fox, 2006; Plutzer & Zipp, 1996; Seltzer, Newman, & Leighton, 1997; Smith & Fox, 2001; Thompson & Steckenrider, 1997). Despite this finding, women lawmakers still face more difficult challenges than men. In each branch of government, scholars have shown there is a climate that appreciates and promotes masculine norms (Mezey, 2003; O'Connor, 2002). Compounding this situation, US voters hold lingering prejudices and express a desire for male leaders and masculine leadership qualities (Dolan, 2004; Huddy & Terkildsen, 1993; Newport & Carroll, 2007).

In this paper, I apply insights from empirical, experimental, and qualitative research to propose a theory of gendered vote revelation in Congress. Specifically, I argue that perceived electoral insecurity, coupled with gender stereotypes, leads women to exert more effort than men to signal policy competence by revealing how they vote on specific pieces of legislation to constituents. I analyze how legislators connect to constituents and hypothesize that women will reveal more votes than men in an effort to overcome the notion that women are less suited for office. Using a new data-set of 40,000

legislator e-newsletters and Real Simple Syndication (RSS) feeds, I show that women reveal more votes to constituents, both in terms of the overall numbers of votes and the number of unique votes revealed. I consider the effects of party, ideological extremity, seniority, district fit, electoral security, the amount of votes actually cast, and district specific controls and still find robust support for gender differences in communication strategy. I also find – contrary to an expectation that the additional bills women reveal votes on would be on women’s issues legislation – that men and women reveal votes on the same types of bills, bolstering the argument that this evidence is consistent with a theory of policy competence signaling.

Women in politics: working harder to stay even

Nearly a century after Jeannette Pickering Rankin (R-MT) was elected to the House in 1916 as the first woman in Congress, women still face prejudices and stereotypes as candidates and office holders. While the literature on elections indicates that men and women win congressional seats at similar rates, an assumption of gender equality in politics is premature, as both voters and female politicians appear to accept the notion that men are better suited to public leadership. Generally, voters prefer elected officials to be intellectual leaders and confident decision makers and these qualities are typically ascribed to men (Kahn & Geer, 1994; Koch, 1999). As politics has traditionally been dominated by men, when women occupy elected office they are sometimes perceived as less legitimate (Butler & Geis, 1990). More recent research even suggests that voters have a preference for governing bodies made up of more men than women regardless of party (Sanbonmatsu & Dolan, 2009). In fact, as a way to combat such prejudices, over 100 countries have mandated quotas for female political candidates (Krook, 2006). Not all quotas are equally successful for increasing the numbers of women elected, the design of each quota system also matters – namely having an individual party nominee quota for women on the ballot tends to be more effective than an overall election level quota (Schwindt-Bayer, 2009). Quotas aside, the US context is unique in terms of electoral style, and these biases differ depending on geography and electoral rules. For instance, in Finland’s open list proportional representation system the supply of female candidates by all competing parties as well as the number of elected deputies matters greatly for the success of female candidates (Giger, Holli, Lefkofridi, & Wass, 2014).

In studies of objectively similarly qualified potential local politics entrants, men are significantly more likely to describe themselves as ‘very qualified’ than women (Fox & Lawless, 2004; Lawless & Fox, 2005).¹ Additionally, there is evidence that gender role socialization creates an impression among women that politics is a man’s game (Burns, Schlozman, & Verba, 2001; Delli-Carpini & Keeter, 1996). In recent experimental work, Kanthak and Woon (2014) report that even when women know they are as qualified as men to run for office, they are averse to the electoral process because they are unsure of how to convince voters of that fact. In elections, women face more and better electoral challengers (Lawless & Pearson, 2008; Milyo & Schosberg, 2000) and have a harder time securing financing and support from partisan organizations (Jenkins, 2007; Sanbonmatsu, 2006).

This is not to say that women have not made monumental strides in the political arena, they have. American women politicians of the 1970s routinely faced obviously sexist opposition and hostile electoral environments (Witt, Paget, & Matthews, 1994) whereas it is increasingly uncommon for women politicians today to face blatantly sexist appeals. Yet at all different levels of politics residual sexism remains.

Understanding the bias against women politicians, it appears that female incumbents tend to work harder and produce more than their male colleagues. As a first signal of more effort, women, on average, accumulate more experience than male candidates prior to running (Pearson & McGhee, 2013). Once in office, women tend to give more floor speeches, introduce more bills, more successfully usher sponsored legislation through Congress, and engage in credit claiming at a higher rate (Dolan & Kropf, 2004; Volden, Wiseman, & Wittmer, 2013). While the effort to produce more legislation has been well documented, it is not the case that women cast more roll call votes than men. In the 111th Congress – the Congress under study in this paper – the average woman Representative cast 1532 recorded

votes to the average man's total of 1537. In the Senate, women voted 676 times on average, and men voted 622 times; while women appear to vote slightly more in this chamber, the differences are not statistically significant.

It is not possible to disentangle whether the observed increased efforts from women are because women actually face more challenges and must therefore be of higher quality than men to succeed, or if this action is driven by a mechanism to combat external and internalized stereotypes women hold onto even after successfully winning office. What is clear is that women tend to work harder in their campaigning and legislative output. In this paper, I ask if women try harder to explain those actions to their constituents than men as an effort to signal policy effort.

Vote revelation as a signal of effort

To measure an effort to combat voter bias, I study a strategic communication behavior I call *vote revelation*. Rooted in Mayhew's (1974) notion of 'position taking,' vote revelation occurs whenever a legislator communicates his or her actual or intended vote on specific legislation to constituents; rather than Mayhew's broader sense of position taking that may be satisfied by simply stating an ideological position on a topic not explicitly tied to legislation. As an effort to be accountable and responsive to their constituents all legislators have incentives to communicate about their efforts in Congress (Carey, 2008; Ferejohn, 1999); but the specific types of communications men and women choose to employ may be systematically different.

I hypothesize that female legislators – because of a general tendency to feel electorally insecure coupled with stereotypes that hold women to be less able leaders than men – will work harder to convey higher levels of policy effort to voters. This hypothesis, while not previously posited or tested in terms of vote revelation, has been alluded to in the reporting that women and men do equally well at the ballot box, 'Credentials should be more important for the success of female than male candidates, since politics has traditionally been considered a masculine pursuit.' (Burrell, 1992). My hypothesis of increased rates of vote revelation for women is an extension of work that finds women tend to sponsor more bills (Anzia & Berry, 2011), and speak more frequently on the House floor (Pearson & Dancey, 2011) to overcome voters' projections of a gendered competence gap.

Specifically, I expect that women legislators will reveal more votes in their constituent communications than men legislators. Voting on legislation is a core responsibility of a legislator and is a readily understandable aspect of policy-making for voters. Experimental work shows prejudgments of diminished competency based on gender can be overcome when women explicitly communicate their contributions to a given task (Johnson, Murphy, Zewdie, & Reichard, 2008; Ridgeway, 1982). To extrapolate to the political realm, women ought to be able to emphasize parts of the job that correspond with supposed masculine traits such policy-making and legislative influence to challenge negative stereotypes. Vote revelation, as a strategy to enhance voters' awareness about policy efforts can be understood as an attempt to increase authoritative representation to counteract gendered expectations that disadvantage women (Mendelberg, Karpowitz, & Oliphant, 2014).

Using official communications to tell voters about votes portrays a Congresswoman in a different way than using communications to talk about a ceremonial groundbreaking or to share a holiday recipe. By communicating specific voting decisions to constituents, a legislator explains her position, as well as signals her policy efforts by reminding constituents that she is doing the work she was elected to do.

Vote revelation data

The data I use to measure communication and vote revelation are all e-newsletters and RSS feeds sent in 111th Congress from August 2009 through the end of the term, resulting in 40,957 messages.² The messages are from an original data-set I collected from every Representative and Senator who sends official messages.³

Table 1. Congressional message and vote revelation comparisons: by gender and chamber 111th congress.

	Women	Men	Difference (women–men)	N
<i>House</i>				
Number of legislators	74	369	–295	443
Sends messages (%)	89.2 (3.6)	92.7 (1.4)	–3.5 (3.4)	443
Total messages sent ^a	79.5 (8.1)	72.9 (3.4)	6.6 (8.6)	408
Total vote revelations ^a	60.3 (10.5)	41.33 (3.0)	19.0* (8.2)	408
Total unique revelations ^a	22.7 (2.3)	16.8 (0.9)	5.9* (2.4)	408
<i>Senate</i>				
Number of legislators	17	89	–72	106
Sends messages (%)	94.1 (5.9)	82.0 (4.1)	12.1 (9.7)	106
Total messages sent ^a	127.9 (35.1)	100.9 (10.6)	27.0 (27.9)	89
Total vote revelations ^a	38.4 (7.3)	39.7 (5.2)	–1.2 (11.6)	89
Total unique revelations ^a	12.8 (2.1)	13.2 (1.4)	–0.4 (3.1)	89

Notes: Cell entries are means and the corresponding differences. Standard errors in parentheses.

The number of Representatives and Senators are higher than 435 and 100 because of legislator turnover filled by special elections or appointment.

^aConditional on any messages being sent.

* $p < 0.05$.

I consider vote revelation over the medium of official online constituent communications, recognizing that this is only one way that legislators communicate to voters. It could be that some legislators are more revealing across other media such as television, radio, or newspapers, but for my purposes online official communications have advantages. Most importantly, legislators are in total control of the information they reveal in the messages. Unlike interviews where someone else sets the agenda, or an article that can be rejected by an editor, these messages can contain as little or as much information on virtually any topic a legislator chooses. Second, the recorded and text based nature of these messages makes quantifiable research much more tractable. Third, these messages have a large potential audience. I deployed a question on the 2012 Cooperative Congressional Election Study, which draws from a nationally representative survey population and 1000 respondents were asked if they had ever signed up for such messages from their Representatives and Senators. Approximately 19% reported signing up for official messages from Representatives and 14% from Senators.

Some legislators communicate much more frequently than others. While an extensive analysis of which types of legislators tend to communicate more often than others is the subject of another project, generally I find that legislators who are older or have more seniority are somewhat less likely to send emails in the first place and send fewer emails than their younger, more junior colleagues. In addition, black and Hispanic members send fewer messages than white members, and conservatives tend to send more messages than liberals.

In order to generate the specific measures of vote revelation, I first ran a computer sweep over every message to identify all potentially containing a vote revelation based on a search of key terms.⁴ This results in 15,690 messages, which were then read either by myself or a highly trained team of research assistants and each specific vote was recorded; each coder had to train until reaching an inter-coder reliability rate above 90%.

For dependant variables, I use an indicator variable *Sends Messages*, to measure whether a legislator sent any e-newsletters or RSS feeds. Conditional on a legislator sending messages, I count of the total number of messages, *Total Messages Sent*. To measure vote revelation, I rely on two variables that measure different facets of strategic communication. The first measure is the count of all instances of vote revelation, *Total Revelations*. This measure includes voice votes, roll call votes, and any repetition of those revelations during the time of interest. This variable measures how frequently a legislator relies on vote revealing as part of his or her communication strategy. The second measure, *Total Unique Revelations*, is a measure of the breadth of vote revelation. In this measure, only recorded roll call votes are counted and each specific roll call vote is counted once.

Table 2. Member and constitution characteristics comparisons: by gender 111th congress.

Independent variable	Women	Men	Difference (women–men)
Previous vote margin	4.19	4.17	0.02
Number of votes cast	1374	1387	13
Democrat	76%	55%	21%*
Extremity	0.22	0.27	0.04
Seniority	10	10	0
District fit	0.25	0.31	0.06*
Black	11%	6%	5%
Hispanic	7%	4%	3%
Percent white in district	70%	77%	7%*
Percent < HS education	21%	19%	2%
Percent rural	16%	23%	7%*
<i>N</i>	82	415	

Note: Cell entries are means and the corresponding differences.

* $p < 0.05$; * two-tailed.

Empirical strategy

I first perform bivariate comparisons of men and women on each dependent variable before moving on to multivariate analyses. To reiterate, I hypothesize that Congresswomen will reveal more votes than Congressmen. I analyze the decision to send messages and the number of total messages sent. Results are presented in Table 1, which provides the average percentage of men and women who sent messages, the average number of messages sent, the average number of total revelations and the average number of total unique revelations.

In both the House and the Senate, men and women do not differ in the decision to send online messages or in the number of messages sent. Of Representatives, 89% of women and 93% of men send messages. Of Senators, 94% of women and 82% of men send messages. These differences are not significant and show that the majority of both men and women take advantage of new communication technologies.

In terms of vote revelation, there are significant differences across genders in the House, but not in the Senate. I discuss possible reasons for a null finding in the Senate in the conclusion; but for now I present House results. Consistent with my hypothesis, women in the House reveal 19 more votes on average (60 vs. 41) than men. When restricting the analysis to the amount of unique roll call votes revealed, women tend to reveal votes on nearly 6 more bills (23 vs. 17) than men. These differences are both statistically significant (p -values 0.02 and 0.01, respectively) and substantively large, suggesting there are appreciable differences in strategies.⁵

Previous researchers have noted that once other explanations are accounted for such as party, ideology, and constituency characteristics, the impact of being a female no longer remains significant for voting decisions on women's issues or for getting an authored bill through Congress (Jeydel & Taylor, 2003; Swers, 1998). It could be that some other explanation better accounts for differences in the Senate, or that the relationship I find in the House is spurious and some other observable characteristic of women better explains the tendency to reveal more votes. In order to assess these possibilities I model communication and vote revelation strategy on gender as well as other explanatory controls by chamber.

In the multivariate analyses the key independent variable is whether a legislator is a woman, but I also add in controls to see if there remains a marginal effect of being a woman on top of other variables thought to influence political communication strategies. First, I include the *previous vote share* to capture the notion that electoral vulnerability contributes to how a legislator will present herself to constituents.⁶ Second, I include a count of the number of votes a legislator actually took in the 111th Congress, *number of votes cast*. This is important because it could be that women simply vote more often than men, so finding that they also tell their constituents about more votes would be a natural extension of this behavior and not indicative of a different communication strategy. Next, I include an

indicator variable signaling that a legislator is a *Democrat*; while each individual legislator is responsible for forming and sending messages, parties encourage members to write about certain issues (Malecha & Reagan, 2012). I include a measure of legislator *extremity*, as there is theoretical support for the impact of ideological extremism on behaviors related to vote revelation. Extreme legislators tend engage in position taking more often than moderates (Lipinski, 2004; Yiannakis, 1982) and may therefore also be more prone to vote revelation.⁷ I control for *seniority* because junior members, in general, spend more time proving their policy effectiveness to constituents than senior members and may therefore be more likely to incorporate vote revelations into their communication strategies (Hibbing, 1991; Hickey, 2010).⁸ I also include a measure of a *district fit* following previous research that finds that as a legislator's opinion and the opinion of the district's median voter more closely align, a legislator is more likely to announce his or her position (Highton & Rocca, 2005).⁹ I include a series of other control variables that may affect the overall sorts of topics a legislator decides to write about and therefore may contribute to the opportunity to reveal votes. These variables are legislator race and ethnicity (*black, Hispanic*) indicators with white and other as the omitted categories, the percent of single-race *white citizens* in a district, the percent with *less than high school* diploma, and the percent living in *rural areas*. Lastly, I include state indicators owing to the finding that different states have different, 'female sociopolitical subculture(s)' that have been found to contribute to the likelihood that a woman runs for state office and could potentially influence the types of strategies an incumbent uses when communicating to her constituency (Windett, 2011).

Data for legislator gender, race, party, and time in office are from the Congressional Quarterly (CQ) Congress Collection. Data on member ideology and extremity were generated using all votes in the 111th Congress maintained at voteview.com. Data on the previous vote share of each legislator is from the CQ Voting and Elections Collection. The 2000 Census provides the estimates of constituent characteristics.

As a first test of gender differences I explore the differences between women and men on the explanatory variables used in the multivariate model. Table 2 displays the averages and differences for each explanatory variable by legislator sex. I do find some significant differences; women legislators are more likely to be Democrats (76–55% of all male legislators), women tend to fit their districts better, they tend to have lower concentrations of white voters in their districts, and they come from districts that are less rural.

Given that there are some significant differences, I move into the multivariate analysis in order to control for some of these empirical distinctions in order to compare similarly situation men and women. The unit of analysis for all models is the legislator. Both vote revelation dependent variables are non-negative counts, each with greater variance than their means so I use negative binomial regression (Long, 1997). Each model is estimated conditional on at least one message being sent because it is impossible to observe any vote revelation for legislators who choose not to send messages in the first place.¹⁰

Results

The results of the multivariate analyses performed on all House members are presented in columns 1 and 2 of Table 3, and the results for identical analyses on Senators are presented in columns 3 and 4.¹¹ For each regression, Huber-White standard errors are reported. Each column presents a different model with the dependent variable listed as the header. The findings in Table 3 generally follow the results from the bivariate analyses of Table 2 and as before, all differences attributed to gender are only observed in the House, which I focus on first.

As predicted, the coefficients on gender in columns 1 and 2 indicate that women reveal more raw and unique votes than men conditioning on other characteristics in the model. I also find that as a legislator has a greater previous margin of victory he or she is less likely to reveal votes. Perhaps not surprisingly, the more times a legislator casts a vote the more times he or she will reveal votes, yet even after controlling for this very straightforward relationship, women in the House still tend to reveal more than men.

Table 3. Vote revelation models by chamber 111th House and Senate.

	House		Senate	
	Total revelations ^a	Total unique revelations ^a	Total revelations ^a	Total unique revelations ^a
Female	0.40** (0.14)	0.33** (0.11)	-0.10 (0.41)	-0.06 (0.28)
Previous vote margin	-0.88* (0.39)	-0.79* (0.32)	-0.80 (1.01)	-0.61 (0.74)
Number of votes cast	0.00* (0.00)	0.00* (0.00)	0.01* (0.00)	0.01* (0.00)
Democrat	0.12 (0.18)	-0.01 (0.15)	-0.39 (0.27)	-0.55* (0.19)
Extremity	-0.72 (0.37)	-0.65* (0.28)	0.62 (1.11)	0.42 (0.69)
Seniority	0.00 (0.01)	-0.01 (0.01)	0.00 (0.02)	0.00 (0.01)
District fit	0.01 (0.34)	-0.15 (0.27)	1.90* (0.89)	1.31* (0.52)
Black Legislator	-0.21 (0.28)	-0.48* (0.23)		
Hispanic Legislator	-0.31 (0.33)	-0.20 (0.27)	13.70** (5.07)	7.06* (3.44)
White Citizens	-0.02* (0.01)	-0.02* (0.01)	0.25 (0.14)	0.12 (0.11)
Less than High School	0.64 (1.27)	-1.30 (1.05)	10.48 (16.83)	0.82 (12.90)
Rural	-0.04 (0.49)	0.26 (0.39)	32.12 (12.19)	15.33 (8.31)
Constant	7.76** (1.79)	7.09** (1.52)	-32.80 (17.79)	-15.27 (13.27)
Pseudo R ²	0.03	0.04	0.15	0.21
N	407	407	84	84

Notes: White standard errors in parentheses. Column headers denote the dependent variable. All estimates are from negative binomial regressions. R² is McFadden's R². Coefficients for state fixed effects are included, but not reported. *Conditional on any messages being sent. *p < 0.05; **p < 0.01.

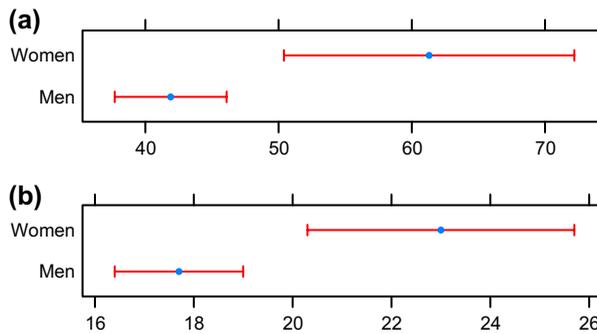


Figure 1. (a) Estimated total votes revealed by sex. (b) Estimated total unique votes revealed by sex.

In the Senate, there is no support for the hypothesis that women reveal more votes than men. The coefficients on gender are near zero and their standard errors are 3 and 5 times as large respectively. Instead, I find support for an explanation that relates the number of votes cast, party, and district fit to vote revealing behavior. Again, those who vote more, reveal more. Democrats reveal significantly fewer votes than Republicans, and as a legislator fits his or her district worse he or she is more apt to send higher numbers of total and unique vote revelations. There was not a clear expectation that I would find supporting evidence for my theory in the House but not the Senate, but there are perhaps reasonable explanations for this finding explored in the discussion section. For now, I turn to simulations to better understand the House results.

In order to measure the magnitude of the difference between men and women, conditional on having similar other characteristics, I estimated the model parameters as reported above in the House and then simulated 10,000 values of the parameters, sampling from the estimated distribution each time using CLARIFY (Tomz, Wittenberg, & King, 2003). I set all variables to their means and then manipulated the female indicator to assess the differences between men and women.¹² I display the expected value

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Table 4. Percentage of vote revelation on women's issue bills vs. all other bills by legislator gender 111th House.

	Women's issue votes (%)	All other votes (%)	Total (%)
Men	32.4	67.6	100
Women	32.0	68.0	100

Table 5. Most frequently messaged bills 111th congress (House only).

Bill number	Bill name	% of all vote claims
<i>Men</i>		
H.R.3590	Patient Protection and Affordable Care Act	9.4
H.R.1	American Recovery and Reinvestment Act of 2009	7.4
H.R.3962	Preservation of Access to Care for Medicare Beneficiaries and Pension Relief Act of 2010	4.3
H.R.4173	Dodd-Frank Wall Street Reform and Consumer Protection Act	3.0
H.R.4853	Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010	1.7
H.R.4213	Unemployment Compensation Extension Act of 2010	1.7
H.R.2454	American Clean Energy and Security Act of 2009	1.6
H.R.2847	Hiring Incentives to Restore Employment Act	1.5
<i>Women</i>		
H.R.3590	Patient Protection and Affordable Care Act	8.3
H.R.1	American Recovery and Reinvestment Act of 2009	7.9
H.R.4173	Dodd-Frank Wall Street Reform and Consumer Protection Act	3.6
H.R.3962	Preservation of Access to Care for Medicare Beneficiaries and Pension Relief Act of 2010	3.0
H.R.4213	Unemployment Compensation Extension Act of 2010	2.2
H.R.4853	Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010	1.9
H.R.5297	Small Business Jobs Act of 2010	1.7
H.R.1586	FAA Air Transportation Modernization and Safety Improvement Act	1.7

(mean) amount of votes that an average male and female legislator reveals as the point estimate in Figure 1 as well as a 95% confidence interval.

Figure 1 shows that a hypothetical female Representative is expected to reveal slightly more than 61 total votes and 24 unique votes, and a male Representative with otherwise similar characteristics is expected to reveal only 41 total votes and 18 unique votes. In order to check that these differences are greater than zero, I estimated the first difference between the predicted amounts of votes revealed by men and women from the simulated values and computed a 95% confidence interval about it. This provides evidence that men and women have significant differences in the number of votes they reveal, as a female legislator is expected to reveal 18 more votes and reveal 6 more unique roll call to her constituents than a male legislator and both estimates are significant at the 95% level.

These findings in the House provide support for the hypothesis that women will present more voting decisions to constituents than men. *Ceteris paribus*, women Representatives send more messages than men that focus on vote revelations both in terms of the total number of votes revealed and the number of unique votes revealed. Before concluding, I turn to the secondary question of this paper: Do men and women reveal votes on different types of legislation?

Vote revelation: different types of bills?

Past research indicates that women author and sponsor different types of bills than men. Women draft more legislation on family and children's issues more than men, women sponsor and cosponsor more bills on such issues, and women speak more about these bills in committees and on the floor (Burns et al., 2001; Carroll, 2001; Gerrity, Osborn, & Morehouse, 2007; Reingold, 2000; Swers, 2002; Thomas, 1994; Wolbrecht, 2000). As a secondary test of my theory, I ask whether men and women reveal votes

on similar types of bills. Given that I found that women reveal more votes than men in the House, two scenarios could account for these differences. It could be that women reveal more votes than men because they intend to cover all the same policy ground as men and make sure to reveal votes on women's issues legislation. On the other hand, if the strategy of revealing more votes is intended to signal general policy efforts to voters we should not expect the types of votes women reveal to differ in any great way than those that men reveal.

Finding that women reveal more votes to constituents, and knowing that women tend to introduce, co-sponsor and vote for women's issues legislation more often than men, are the additional vote revelations reported above made up of 'women's issues'? In order to measure whether women and men focus on the same issues I perform three different analyses of specific bills mentioned. First, I use the Women's Policy Inc. list of women's issues legislation considered in the 111th Congress and compare the rates of revelation for men and women. Second, I create lists of the most frequent bills that legislators revealed a vote on by legislator gender. Last, I look at two of the most salient women's rights votes of the 111th Congress, the Lilly Ledbetter Fair Pay Act (S.181) and the House version Paycheck Fairness Act (H.R.12), which extend the statute of limitations for women to sue employers.¹³ I restrict my analysis to the House.

For the first test, I create a dummy variable indicating whether a bill is considered 'women's issues' legislation using the Women's Policy Inc. list of women's issues legislation from the 111th Congress to select votes.¹⁴ Women's Policy Inc. considers legislation to be a women's issue if the focus is on: children, women's health, sexual abuse, domestic violence, welfare, equal pay, women in the military, pregnancy, abortion, etc.¹⁵

Using the coding of women's issues bills from Women's Policy Inc., Table 4 presents the average percentage of vote revelation on women's issues bills and all other bills by legislator gender. Table 3 shows that as a portion of all votes revealed, women do not focus more on women's issues bills than men. The similarity across the genders is striking with women's issues bills accounting for 32% of all revealed votes for both men and women.

As a second way to examine the types of votes men and women reveal, I ordered all of the bills that legislators reveal votes on from most frequently mentioned to least by legislator gender. Specifically, I have created a list of all the votes that men reveal and then calculated which bills are most frequently mentioned (up to a cumulative 30% of all bills mentioned) and did the same for women. Bills are listed in Table 5. Women and men focus on the same set of key bills in their communications. The most common votes referred to are: 'Obamacare' (H.R. 3590 and 3962), 'The Stimulus' (H.R. 1), 'Dodd-Frank Wall Street Reform' (H.R. 4173), 'Bush Tax Cut Extension' (H.R. 4853) 'Unemployment Benefit Extension' (H.R. 4213).¹⁶ In the top 30% most frequently revealed bills only the least frequent 3% are unique to men or women, but none of these bills are women's issues legislation.

As a final approach to the issue of whether or not there are substantial differences between the types of votes men and women reveal, I analyze revelation rates on two unambiguous pieces of women's legislation: the Lilly Ledbetter Fair Pay Act (S.181) and the House version Paycheck Fairness Act (H.R.12). For women Representatives, S.181 makes up 0.41% of all vote revelations and H.R.12 accounts for 0.30% of all claims. For men, the corresponding totals are 0.32 and 0.12%. While women pay a bit more attention to these specific bills than men, differences are not statistically significant.

Using three different methods, I do not find evidence that women focus on a set of bills that are substantively different than the bills that men focus on. Analyzing a set of bills described as women's issues does not result in any significant differences between men and women. Looking at the most frequently mentioned bills also does not result in any stark differences between the genders. And lastly, the major women's issues legislation to pass out of the 111th Congress accounts for less than 1% of all votes revealed by women and men.

Discussion and conclusion

While not uncontested, prior research provides evidence that voters have a preference for traditionally male characteristics such as leadership and assertive decision-making when selecting legislators.

Understanding this preference as well as this the perceived electoral insecurity that pervades the minds of most lawmakers, female legislators may face a steeper hill to climb proving their policy credentials to voters. As a way to overcome the notion that women are lesser able to lead, female legislators expend extra effort highlighting their policy credentials to voters by revealing more voting decisions in communications. Previous research has found that women legislators work harder than men by introducing more legislation, co-sponsoring more often, and speaking more on floor, but the communication of this effort to constituents has been much less attended to. Using a new data-set of constituent communications, I find a series of important differences and similarities in how men and women legislators connect with voters.

Men and women legislators are similar in their rates of technology use. And legislators discuss the same types of bills when connecting with constituents. There are, however, significant differences between the implementation of communication strategies in terms of vote revealing for men and women. I find that, female Representatives reveal more votes than male Representatives. This finding remains unchanged even after controlling for other factors such as party, extremity, seniority, district fit, and previous vote share all of which theoretically ought to guide vote revelation strategy.

In the grand scheme of all that a legislator does, the fact that women reveal 19 more votes and 5 more unique votes than men to constituents may seem inconsequential, but contextualizing these differences shows just how meaningful these kinds of actions are. Legislators communicate strategically, and knowing the costly information environment voters are in, a legislator will attempt to influence voters' perceptions of herself.¹⁷ Given that the average number of total and unique votes revealed is 43 and 17 respectively, women reveal 44% more overall votes and 29% more unique votes to their constituents. Leaving the question of the representative nature of the specific votes revealed for another project, this finding has implications for both voters and legislators. First, attentive voters who are represented by women have access to more information about how their legislators voted than those represented by men. Second, the method of study here allows for a quantifiable measure of 'home style' for men and women and signals that men and women approach their constituent communications in significantly different ways. Yet even with these differences, it is important to remember that this is a study of just one Congress, but it represents the first of this sort of inquiry and could serve as a benchmark for future research into political communication.

The differences are observed in the House; women in the Senate communicate much more like their male counterparts. While not expected, this result may find explanation in either real differences between the women and men in each chamber, or may be explained by small sample estimation difficulties. Achieving such a high level of elected office, women in the Senate may feel no need to behave differently than men to prove policy expertise. Indeed, by winning such an office, a woman may have proven her policy efforts in prior positions and may therefore no longer rely on such a strategy. Assessing this explanation is possible as vote revelation data accrues overtime by tracking the vote revelation strategies of men and women who move up from the House to the Senate. Second, it could be that Senate communication strategies and House communication strategies are simply different perhaps owing to the longer electoral horizon of Senators. I split the data into Senate classes and checked for differences in the number of votes revealed for men vs. women. I find that in the class of Senators that were up for re-election in 2010, women reveal more total and unique votes, on average than men, and in the two other classes men reveal more than women. However, in no class of Senators are the differences between men and women statistically significant. Another possibility, although not very academically satisfying, could be that the small number of observations in the Senate makes finding significant differences much more difficult than in the larger House. Regardless, more research is needed analyzing the presence or absence of gender differences in each chamber with data on different types of legislative behaviors. Much of the research to date examines one chamber or the other, and direct comparisons of similar actions across both chambers are much less frequently published. As it stands for strategic political communication, the gender differences in the House remain notable and suggest that men and women Representatives approach constituent communications in different manners consistent with a theory that women will work harder to signal policy efforts.

The larger number of vote revelations is not an attempt by women to cover more bases by focusing on both general legislation and legislation specific to women's concerns. Instead, I find that men and women focus on the same bills, and neither gives much attention to the few bills that deal with women's issues. This result was not expected because of the variety of research that finds women focus more on women's issues than men, but does offer another piece of support to the theory that women engage in greater amounts of revelation to communicate their policy efforts to constituents. By not simply providing more voting information in the form of token women's issues revelations, a woman can more effectively signal policy efforts by broadening the types of bills she discusses in communications.

Caution should be exercised when attempting to generalize these findings across different times and contexts. If the results are due to the current political environment or the current status of women in politics, we may expect these differences to fade in the future. However, if these results are driven by traits correlated with gender, they may persist. Lastly, these results may be uniquely American as political communication varies between cultures and form (Graber, 1993); further comparative analyses of communication styles in different contexts would serve to make this research richer.

Knowing that women reveal more votes than men opens up future research questions regarding how and if this type of behavior affects voter assessment of legislators. Does this strategy work to make women legislators look more credible to voters? Can citizens from women-represented districts better identify the positions of their Representatives? Survey questions ascertaining the impact of these types of communications are currently in the field and will allow further study in the near future. Additionally, the type of data used here and the ever-increasing amounts of the e-newsletter and RSS feeds can facilitate research that analyzes different phenomena longitudinally. Lastly, the authenticity, yet manipulability of these texts means that lab experiments varying the gender and number of votes revealed can be used as another way to examine how these tactics are viewed by the electorate.

My research offers a look into the elements of legislating beyond voting, and as Fenno urged, is a step in the direction of spending less 'time explaining votes and a little more of our time explaining explanations' (1978, p. 141). I find that men and women are technically similar in that both use online communications at the same rates, but strategically different in how they use these technologies. Appreciating these types of representational nuance is important to better understand the strategies differently situated legislators use when connecting with constituents.

Notes

1. Behavioural economists report that women who perform at the same objective level as men are less likely to choose competition when they are able to control the types of payoff settings in experiments (Niederle & Vesterlund, 2007).
2. For an example of a vote revelation see Appendix 1.
3. Specific communications analyzed are E-newsletters and RSS feeds. Official communications are those sent from a Member of Congress' .gov email address or RSS feeds from the house.gov or senate.gov websites. I subscribed to each e-newsletter and RSS feed with a dummy e-mail account. For each legislator that did not have both forms of communications at the initial time of collection, I checked once a month to add to the subscription list. NYU's Internal Review Board has approved this collection as exempt. There are now over 190,000 communications in the DC Inbox database and they are available upon request and will be made publicly available upon publication of research using the data. For the 111th Congress analyzed here, the data are from August 2009 January 2011. Roughly 25% of e-newsletter subscriptions require an in-district zip code, for 15% of those subscriptions the messages are made publicly available on official websites, therefore 10% of the subscriptions rely on a false zip code; which is the first zip code listed for a legislator's district office. No RSS feeds have any subscriber restrictions.
4. Specific terms and processes are detailed in Appendix 1.
5. For the continuous measures, there are high frequency outliers, but these are not exclusively women.
6. This measure is the logarithm of the percentage of the two-party vote earned by the winning candidate.
7. The measure is based on all of the recorded, non-unanimous roll call votes each legislators casts in the form of the first dimension DW-NOMINATE score squared DW-NOMINATE scores from voteview.com which is maintained by Jeff Lewis and Keith Poole. The first dimension DW-NOMINATE scores can be interpreted to gauge conservative-liberal ideology in the modern congress; by squaring the score values, both very liberal and very conservative members of Congress are measured as more extreme, and legislators who have DW-NOMINATE scores in the center of the range are more moderate (Poole & Rosenthal, 1997).
8. This variable measures the amount of time in office for a legislator in years.

9. This is the absolute difference of the 1st dimension DW-NOMINATE score and a predicted DWNOMINATE score based on a regression of a legislator's first dimension DW-NOMINATE score on president Obama's share of the two party vote in the district. A larger value means a greater difference between a legislator's actual ideology and the predicted ideology from the amount of support for Obama in the 2008 election. That is, higher numbers signal a worse fit to the district.
10. This condition does not pose a great risk for selection bias since nearly all legislators (91%) send messages. Running the analyses with all non-senders included as revealing zero votes does not change the findings.
11. The indicator, black is omitted in the Senate specification; there is only 1 black Senator.
12. Continuous variables are set at their means and indicator variables are set to their modes. An average hypothetical legislator is a Democrat with an extremity score of 0.27, a previous (logged) margin score of 4.19, who cast 1544 votes, has 9.8 years of service, a district fit score of 0.30, an extremity of 0.27, who is white, non-Hispanic, with a district of 75% white citizens, where percentage of population with less than a high school education is 20%, and the rural percentage of 21%. State fixed effects are omitted from the simulations in order to reduce the number of parameters estimated.
13. The data collection started after these specific votes were cast. While this is regrettable because a good deal of vote revelation happens around the time of the actual vote, it does not doom the analysis as legislators are prone to re-visit votes through out the term to frame their positions and remind voters of all that they have attempted to do while in office.
14. Women's Policy Inc. describes itself as, 'a nonprofit, nonpartisan organization whose sole focus is to help ensure that the most informed decisions on key women's issues are made by policymakers at the federal, state, and local levels. Audiences include elected officials, regulators, women's groups, labor groups, academia, the business community, the media, and the general public.'
15. A list of the bills and actions considered women's issues by Women's Policy Inc. can be found at: <http://www.womenspolicy.org/site/News2?newsid=1&page=NewsArticle&id=10337>.
16. 'Obamacare' (H.R. 3590 and 3962) – refers to the landmark health care overhaul of the Obama Administration – The Patient Protection and Affordable Care Act. 'The Stimulus' (H.R. 1) – refers to first bill passed out the 111th Congress, 'Making supplemental appropriations for job preservation and creation, infrastructure investment, energy efficiency and science, assistance to the unemployed, and State and local fiscal stabilization.' 'Dodd-Frank Wall Street Reform' (H.R. 4173) is a bill passed 'To promote the financial stability of the United States by improving accountability and transparency in the financial system, to end "too big to fail," to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes.' The 'Bush Tax Cut Extension' (H.R. 4853) allowed a two year extension of a series of tax cuts passed under president Bush II. 'Unemployment Benefit Extension' (H.R. 4213) refers to a bill 'To amend the Internal Revenue Code of 1986 to extend certain expiring provisions' that benefited those out of work.
17. While not specifically analyzing strategic vote revelation (Mayhew, 1974; McGraw, 1991) indicate that legislators do attempt to influence voter perceptions of her ideological orientation. Additionally, Landa and Meirowitz (2009) indicate that messages such as these should only be sent when the sender (legislator) thinks there is a possibility of persuasion of the audience (voters).

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No potential conflict of interest was reported by the author.

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Appendix 1. Appendix data and text coding procedures

E-newsletters and RSS feeds are well suited to study communication strategies because of the virtually unrestricted nature of the content and the direct, non-mediated delivery of the messages. Interviews with press secretaries, the recorded nature of these messages, and legislator encouragement to forward the messages indicate that the anticipated audience is for the general electorate.

A vote is considered to be revealed if one of two things occurs:

- (1) A legislator explicitly announces how s/he intends to vote on specific legislation, or how she voted on specific legislation.

- (2) A legislator explicitly announces that s/he authored, introduced, sponsored, or co-sponsored a bill in which a vote was taken. (There is only one instance in which a legislator co-sponsored a bill that he did not eventually vote for, and this legislator sent an e-newsletter explaining the discrepancy. He is coded to have revealed a no vote on this legislation.)

Each vote is only counted once per message.

To determine if any individual message contains a vote revelation each of the 40,957 messages were processed by a computer (see Endnote 16) to search for the terms: vot*, cosponsor*, cosponsor*, co-author*, coauthor*, reintroduc*, sponsor*, introduc*, author*, legislat*, bill, act, resolution. Appending an asterisk to a word is the regular expression quantifier to search for the root and any type of ending. For instance vot* will return: vote, voting, voted, voter, votes, votable, voteable, voteless, and so on. This computer search process resulted in 21,968 messages. Each of these messages was read by the author to confirm that indeed the terms picked up actually referred to a vote in the 111th Congress. Human processing was necessary at this step because occasionally the computer would catch messages with content of the sort, 'This day, in 1920 women were granted the right to vote.' These messages are not indicative of any specific action taken on the part of the legislator in the 111th Congress so they are discarded before moving on to the next stage of processing.

After all of the computer flagged messages are human processed there were 15,865 confirmed vote revelations. This number was reduced to 15,690 when only looking at voting members of the Congress. Each of the remaining 15,690 messages were read by either the author or a highly trained team of research assistants. Human coding was necessary at this step because of the less than straightforward communication styles of many legislators. The detailed process is described below. For each message the coder read the full text and used online sources to find the bill number and specific name of the bill on which a vote was revealed (thomas.gov and opencongress.org). This step was the most time consuming part of the task because legislators are prone to speak in opaque language when referring to their votes. The following is an example from the data.

In November 2010 a Congresswoman sent a message that was included in the potential vote revealing bin because it contained these sentences:

- Congresswoman X urges Congress not to give up on extending unemployment benefits, which fell short of a two-thirds majority vote.
- I'm very disappointed that there weren't enough votes today to extend unemployment benefits and I think its outrageous if Congress allows them to expire next month, just as winter is beginning and a few weeks before Christmas, X said.
- Although the vote on the bill in the House today was 258–154 in favor, because it was brought up under 'fast-track' rules, it didn't achieve the necessary two-thirds majority to pass.

In the remaining text of the message, Congresswoman X revealed that she was a co-sponsor of the bill in question by saying, 'X co-sponsored a bill that would extend unemployment benefits by three months.' and then decries that the super majority of the chamber did not vote for this. (While this is not a simple vote claim of the, 'I vote for bill X,' the content and context of the message allows coders [and importantly, constituents] to infer Congresswoman's vote in this situation.) Using the date and vote description, 'extend unemployment benefits' the researcher can then go to online sources to figure out exactly what bill the legislator is talking about and then record the revealed vote in the data matrix.

In this example, opencongress.org helps find the specific vote because the website records votes by day. After looking at all votes on the day the legislator indicates, it is clear that the Emergency Unemployment Compensation Continuation Act (H.R. 6419) is the match for the vote legislator X is referring to for three reasons. The vote totals match exactly the vote totals in the message, the author of the message voted on this bill in the manner she described, and she is also a listed co-sponsor of the bill. With this additional confirming information, the coder can enter the revealed vote. (Because of the necessary detective work in matching vote revelations to the actual roll call data, it was not possible to blind the gender of the legislators to the coders. To hedge against biased coding, there was no specific research aim communicated when messages were coded other than the desire to make a comprehensive list of all votes revealed by every legislator.)