

Women in the House: The Substantive Representation of Women in the Canadian House of  
Commons Since 1968

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## Introduction

Academic and political interest in women's involvement in politics is often grounded in the expectation that the presence of elected women will have an impact on politics.. Female politicians, theory suggests, will be better representatives of women's interests by virtue of a shared experience and perspective, which they bring to bear in political deliberation and decision making (Phillips 1995, 1998; Mansbridge 1999). Evidence from a range of advanced industrial states supports this theoretical expectation, with gendered differences observed in the attitudes, policy preferences, and legislative behaviour of elected officials (Trimble 1997, Tremblay 1998, Wängnerud 2000, Childs 2001, Swers 2002, Lovenduski and Norris 2003, Childs and Withey 2004, Bird 2005, Chaney 2006, Celis 2006, Erzeel 2012). In Canada, however, political institutions are structured in a way that is likely to work against the capacity of individual members of parliament (MPs) to act independently or influence policymaking (e.g. powerful political parties, an executive-driven Westminster parliamentary system, and a single member plurality electoral system). In this context, therefore, the scope for gender differences to manifest themselves in parliamentary debate or decision making is constrained and differences in the behaviour of legislators are more likely to manifest along partisan rather than gender lines.

What difference then, might elected women in Canada make when it comes to the substantive representation of women? Studies of women in Canadian politics have found evidence that women legislators are more likely than their male colleagues to represent women in terms of attitudes and preferences (Young 1997, Burt and Lorenzin 1997, Trimble 1997, Tremblay and Pelletier 2000, Byrne 2009), but less is known about gender differences in parliamentary behaviour (Tremblay 1998). Tremblay's (1998) research on gender differences in parliamentary behaviour offers crucial insights into the question of whether women parliamentarians substantively represent women, but is based on the analysis of a small subset of Hansard transcripts from a single session of the 35<sup>th</sup> Parliament. The durability of these findings has not been tested, and patterns of change over time have been left unexplored. This study aims to address this gap by analyzing nearly fifty years of parliamentary debate transcripts. An investigation of the substantive representation of women in the Canadian parliament on this scale has never been undertaken and would previously have been impossible given the sheer volume of text to be analysed. But a novel data set and innovative methodological tools make an exhaustive investigation possible.

This study asks whether women MPs, regardless of party, are more likely than other groups of MPs to represent women in parliamentary debate. To address this question, I undertake a three-part analysis. The first part examines patterns in the representation of women in parliamentary speech by gender and by party from 1968 to 2015. The second part of the analysis confirms the relationship between the representation of women and the gender and party of MPs using regression analysis. Finally, the third part of the analysis narrows in on the content of the substantive representation of women in political speech by identifying the topics that characterize speeches about women and the topics that women MPs distinctly prioritize in parliamentary speech.

Results from the analysis suggest that gender matters more than partisan affiliation in shaping an MP's likelihood to engage in the substantive representation of women in parliamentary speech. This finding challenges the conventional wisdom about Canadian parliamentary politics which suggests that there is limited opportunity for independent MP behaviour and that party is the most important explanatory variable when examining parliamentary politics in Canada. Results from the analysis also find that speeches about women and speeches by women MPs are both distinguished by attention to gender, family and children, equality, violence against women, and health. This finding supports the position held by feminist

scholars who conceive of the substantive representation of women in terms of issues or policies relating to women's equality and autonomy (e.g. Wängnerud 2000, Mazur 2002, Lovenduski and Norris 2003, Childs and Withey 2004, Childs and Withey 2006, Chaney 2006, Kittilson 2008). While this approach has been criticized for being simplistic and essentializing (e.g. Celis 2006, Celis and Childs 2011), the evidence brought forward by this analysis suggests that the substantive representation of women manifested through claims made by and about women, does in fact focus on the array of issues identified by feminist policy scholars. Taken together, the results of this study suggest that the election of more women does in fact make a difference in Canadian politics when it comes to the content of parliamentary debate.

### **Concepts, theory and hypotheses**

Following Pitkin (1967), I conceive of the substantive representation of women in terms of "what a representative does" (57). According to this model, the representative's "actions, or his opinions, or both must correspond to or be in accord with the wishes, or needs, or interests of those for whom he acts" (Pitkin, 1967: 114). Elected representatives can substantively represent women in multiple ways – for example through shared attitudes or preferences, through the introduction of legislation, through patterns of voting, through issues raised in parliamentary debate, or through policy advocacy. This study focuses exclusively on the substantive representation of women through the discursive behaviour of legislators, specifically what they say in parliament.

There are two perspectives in the literature on what the content of the substantive representation of women consists of. On one side are scholars who conceive of the representation of women's interests in terms of attention to policies that focus on the balance of power between men and women and that seek to increase women's autonomy – typically, gender equality and social welfare policies (e.g. Wängnerud 2000, Mazur 2002, Lovenduski and Norris 2003, Childs and Withey 2004, Childs and Withey 2006, Chaney 2006, Kittilson 2008). On the other side are scholars who conceive of the substantive representation of women in more iterative terms, suggesting that women's interests are constructed through representative claims made by and about women (Celis 2006, Celis and Childs 2011, Erzeel 2012, Celis et al 2014). The research design for this study draws on the latter approach, operationalizing the substantive representation of women in terms of claims made by and about women.

Mansbridge (1999) argues that the identity of representatives matters for substantive representation in contexts in which "citizen interests on a given set of issues are relatively uncrystallised" (643). Under these conditions, representatives who share the identity of those they represent will be better representatives because they can draw on their own experiences and perspective to inform their decision making (Mansbridge 1999: 629). Evidence from studies of legislator behaviour confirms these theoretical expectations, finding that in practice, elected women have different preferences and priorities than their male counterparts (Wängnerud 2000, Tremblay and Pelletier 2000, Lovenduski and Norris 2003) and are more likely to introduce or vote in support of legislation or motions that represent women's interests than their male colleagues (Tremblay 1998, Swers 2002, Childs and Withey 2004). Analyses of legislative debate have also found that women are more likely to represent women in legislative speech (Celis 2006, Erzeel 2012, Bird 2005, Chaney 2006).

While gender appears to matter for the substantive representation of women, MPs' representational responsibilities are of course much broader and more complex. MPs are representatives of their political parties and of their geographical constituencies in addition to acting as representatives of communities of interest based on gender or other characteristics. And in Canada's Westminster parliamentary system, in which political parties play a central

organizing role both inside and outside parliament (Docherty 1997, 2005, Kam 2001, 2009), it would be reasonable to expect that an MP's partisan affiliation would be more influential than their gender in determining their patterns of parliamentary speech – including whether that MP represents women in parliament. Indeed, findings from Canada and beyond suggest that party affiliation contributes to whether MPs and candidates represent women, with those from parties on the left typically more sympathetic to women's equality policy claims (e.g. Erickson 1997, Tremblay and Pelletier 2000).

The strength of partisan affiliation as an explanation for legislator behaviour, however, does not mean the impact of gender is irrelevant. Partisan affiliation might affect the ways in which or the extent to which MPs engage in the substantive representation of women, but will not necessarily subsume gender differences entirely. Divergence on the substantive representation of women is not one of the core cleavages around which the party system is organized, which leaves space for intra-party differences (see Campbell et al 2009).

Drawing from the theoretical and empirical foundations in the literature, three key expectations guide the analyses that follow. First, I expect to find that women MPs will be more likely than men to represent women in parliamentary speech. Second, and following logically from the first expectation, I anticipate that as women MPs' share of seats in the House of Commons increases, so too will parliamentary attention to women. Third, I expect to find that MPs from parties of the left and centre-left (i.e. NDP, Bloc Québécois, and Liberals) will be more likely to represent women in parliamentary speech than MPs from parties of the right and centre-right (i.e. Reform, Conservative, and Progressive Conservatives). While I anticipate that party affiliation will influence MPs' propensity to engage in the substantive representation of women in parliamentary speech, I expect that gender differences will persist beyond partisan affiliation – that is, the role of party will not be as important as the role of gender in shaping patterns of the substantive representation of women. To test these hypotheses, I measure the proportion of speeches about women in parliamentary debate over time, by gender, and by party and confirm these patterns with greater precision using regression analysis.

These tests are supplemented by an inductive analysis that identifies the distinctive vocabulary of speeches by women MPs and of speeches about women. These vocabularies offer an empirically grounded indication of the issue content of the substantive representation of women in parliamentary speech. Consistent with the position in the literature that holds that the substantive representation of women consists of attention to issues relating to women's equality and autonomy, I expect that speeches by and about women will be characterized by words that signal attention to these issues.

### **Data, operationalization, and methods**

This study analyses the complete corpus of transcripts of all parliamentary proceedings from the 28<sup>th</sup> to the 41<sup>st</sup> Canadian Parliament, capturing the content of all parliamentary debate from September 1968 to June 2015. Digital copies of these transcripts were accessed through the Linked Parliamentary Data (LiPaD) project (Beelen et al 2017). The LiPaD data set compiles the English-language version of the Hansard parliamentary record on a speech-by-speech basis, wherein each speech is an uninterrupted intervention by a single MP. The data set includes all aspects of parliamentary debate – from question period, to statements by members or petitions, to substantive debate on proposed legislation. Each speech is stored as a single element in the corpus of Hansard transcripts along with various other data points, including the name, position, and party of the speaker, the date on which the speech was made, and the category of parliamentary proceedings in which the speech was made. Each speech is also linked to a unique number that identifies the speaker and allows for additional details, including the gender of the

MP, to be linked to the main data set. The corpus of parliamentary speeches used for this study includes all speeches by MPs, not including interventions made by the Speaker of the House.<sup>1</sup> It includes 1.347 million speeches, accounting for 285 million words.

Drawing on the approach adopted by Blaxill and Beelen (2016) in their study of the representation of women in the UK Parliament, I operationalize the substantive representation of women in two different ways. First, through direct references to women in parliamentary speech and second, through the identification of issues women MPs distinctively raise in parliamentary debate and the issues MPs of both genders distinctively raise in speeches about women.

### *Speeches about women over time*

In the first operationalization, a speech (the standard unit of analysis in the LiPaD data set) is determined to be about women – and thus, an instance of the substantive representative women in parliamentary speech – if it contains a minimum number of references to women, using two different measures. The ‘woman[1]’ measure is narrowly circumscribed and captures speeches that include the words “woman” or “women.” The ‘woman[2]’ measure is somewhat broader, capturing speeches that include words from a longer list of terms that refer to women. The list of words used here is the same as the list used by Blaxill and Beelen (2016).<sup>2</sup> To ensure that this operationalization captures primarily those speeches that are in fact about women, rather than speeches that simply refer to women in passing, I measure the relative frequency with which words referring to women appear in a speech and set a minimum threshold of the proportion of words in a speech that must refer to women for a speech to qualify as being about women. A speech is deemed to be about women if it includes at least one mention of women for every 330 words. This threshold was selected because it is high enough to ensure that the speeches that are captured are likely to actually be about women, but low enough to ensure a wide variety of different types and lengths of speeches is still captured. The validity of the two indicators was confirmed through manual inspection of a random selection of 200 speeches about women using each measure. Through his process, 95 per cent of speeches about women using the woman[1] measure and 90 per cent of speeches about women using the woman[2] measure were confirmed to be substantively about women.

Using this operationalization of the substantive representation of women, I measure the number of speeches about women by gender and by party (as a percentage of the total number of speeches and as a percentage of each group’s share of speeches). This analysis, tests whether women or men are responsible for the bulk of parliamentary attention to women’s interests, and whether parliamentary attention to women occurs when there are significant increases in the number of elected women. This analysis also tests whether the bulk of parliamentary speeches about women are consistently made by MPs of left or centre left parties.

### *Regression analysis*

To confirm with greater precision which MPs tend to make more speeches about women, I also undertake a regression analysis. Using the same operationalization of the substantive

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<sup>1</sup> Interventions by the Speaker have been excluded because the analysis is interested in the issues that are raised and debated in parliament. Interventions by the Speaker tend to be procedural in nature rather than engaging with the substantive issue content of parliamentary debate.

<sup>2</sup> The list of words for the woman[2] measure includes the following terms: "woman", "women", "female", "widow", "mother", "girl", "wife", "wives", "sister", "daughter", "lady", "ladies", "maternal", "maternity", "feminine", "feminist", "feminism". The search captures all variations of the words listed above – for example, “woman’s”, “females”, or “grandmothers” would each count as an appearance of the terms “woman”, “female”, and “mother”, respectively.

representation of women described above, the regression estimates the independent effect of gender and party affiliation on the frequency with which MPs make speeches about women. Data for the regression analysis are aggregated and recorded by MP. Each observation in the data set is for one MP, as a member of a political party, in one parliament. In some cases, there is more than one observation for an individual MP in one parliament, typically in cases where MPs crossed the floor. For this reason, the total number of observations in the data set (4,147) is slightly larger than the sum of the number of parliamentary seats in the 14 parliaments included in the analysis (4,062). The dependent variable counts the number of speeches about women (using the `woman[1]` measure) made by each MP in a given parliament. The independent variables capture gender, party affiliation, party status, and cabinet position. The details of each variable are outlined in Appendix 1.

I run three models, accounting for gender and party, adding further controls incrementally. The first model estimates the effect of gender on the count of speeches about women, controlling for party affiliation, using a dummy variable for each of the parties, with the Liberal Party as the reference category.<sup>3</sup> The second model adds controls for whether the MP is a member of the government or opposition ('govt'), whether the MP is the Minister responsible for the Status of Women ('minister'), and the share of parliamentary seats held by women ('womenparl'). The third model adds a variable that accounts for trend over time variation from one parliament to the next ('parl'). All three models account for the total number of speeches made by each MP when estimating the impact of each of the independent variables ('speech\_count'). The models are expressed below:

**Model 1:**  $E(\text{woman1\_count}) = f(a + B_1\text{gender} + B_2\text{ndp} + B_3\text{bq} + B_4\text{pc} + B_5\text{cpc} + B_6\text{speech\_count})$

**Model 2:**  $E(\text{woman1\_count}) = f(a + B_1\text{gender} + B_2\text{ndp} + B_3\text{bq} + B_4\text{pc} + B_5\text{cpc} + B_6\text{govt} + B_7\text{minister} + B_8\text{womenparl} + B_9\text{speech\_count})$

**Model 3:**  $E(\text{woman1\_count}) = f(a + B_1\text{gender} + B_2\text{ndp} + B_3\text{bq} + B_4\text{pc} + B_5\text{cpc} + B_6\text{govt} + B_7\text{minister} + B_8\text{womenparl} + B_9\text{parl} + B_{10}\text{speech\_count})$

Each model is a regression for count data in which the expected number of speeches about women is a non-linear function of the covariates.

### *Identifying women's vocabulary*

The third part of the analysis operationalizes the substantive representation of women inductively, consistent with the approach in the literature that conceives of the substantive representation of women in terms of claims made by and about women (Celis 2006, Celis and Childs 2011, Erzeel 2012, Celis et al 2014). Using supervised machine learning methods, I identify the topics that are characteristically raised by women MPs and in speeches about women during parliamentary debate. The identification of the distinctive topic focus of speeches by and about women allows us to identify the topics that women MPs prioritize and the issues that are raised in speeches about women.

To identify which issues parliamentary speeches by and about women distinctively focus on, I use the corpora of speeches from each parliament from 1968 to 2015 described above. The corpora are preprocessed to exclude commonly used stop words and to include only lemmatized nouns and adjectives, focusing on those parts of speech that are most likely to convey a speech's

<sup>3</sup> The data set treats the Reform Party, Canadian Alliance, and Conservative Party as a single category. The data set excludes MPs from the Social Credit and Green Party as well as Independents.

issue or topic focus.<sup>4</sup> To build the list of words that comprise women's and men's distinctive parliamentary vocabularies and the distinctive vocabulary of speeches about women, I construct classifiers that predict the class of every speech (i.e., the gender of the speaker or whether the speech is about women) based on the features of (i.e., words used in) each speech. The most important features of the model – that is, the words that are most likely to correctly predict the class of a speech using odds ratios – are then extracted from the model as the words that best characterize speeches of each class and distinguish the patterns of speech of each class from one another.

To build a comprehensive list of the words that characterize speeches by women MPs over the nearly 50-year period examined here, I use two complementary approaches. First, I construct a classifier that predicts the gender of every speech in each parliament from 1968 to 2015 using a corpus that compares speeches by all men and all women MPs in each parliament. I identify the top 100 features that best predict men's and women's speeches in each parliament and combine the lists of 'most male' and 'most female' words for each parliament. Words that distinguish men's and women's patterns of speech in two parliaments or more are retained to develop distinctive men's and women's vocabularies over the period from 1968 to 2015. This approach, however, risks being skewed by party, since it groups all men and all women MPs together. It thus has the potential to conflate women's speech with the speech of the party with the largest share of women MPs.

A second complementary approach follows the method used by Blaxill and Beelen (2016) and aims to avoid the potentially distorting effects of the uneven distribution of women MPs across parties. For each parliament, I identify the top 1000 features by odds ratios that best predict whether a speech was made by a male or female MP within each party, and then retain only those words that predict men's and women's speech across all parties.<sup>5</sup> Again, the lists from each parliament are combined, and words that distinguish men's and women's patterns of speech in two or more parliaments are retained to develop distinctive men's and women's vocabularies over the period from 1968 to 2015. The identification of men's and women's vocabularies generated through this second process allows for confirmation that the distinctive vocabularies identified using the full corpora are an accurate indicator of the distinct issue priorities of men and women MPs, despite any differences across parties.

To build the list of words that characterize speeches about women, I construct a classifier that predicts whether a speech is about women (using both the woman[1] and woman[2] measures) in each parliament and identify the top 100 features that best predict whether speech is about women. I retain those words that distinguish speeches about women from all other speeches in two or more parliaments. Taken together, the vocabularies that distinguish speeches by and about women offer insight into the issues that characterize the substantive representation of women in parliamentary speech.

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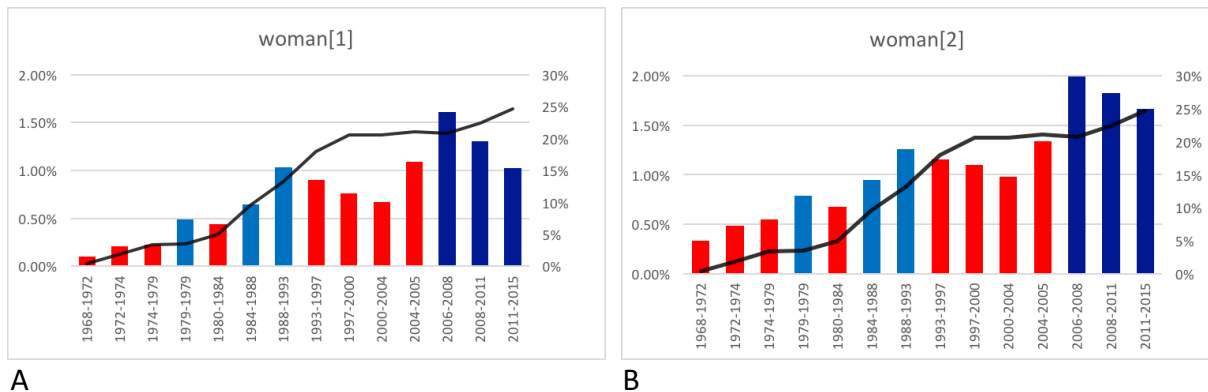
<sup>4</sup> Canadian parliament-specific stopwords include words that are used frequently by all speakers. They are removed from the corpus because their wide usage means they are not useful for differentiating among categories of speakers. The list of stopwords includes: 'canada', 'canadian', 'canadians', 'speaker', 'mr.', 's', 'member', 'members', 'bill', 'government', 'opposition', 'liberal', 'conservative', 'ndp', 'liberals', 'conservatives', 'minister', 'house', 'commons', 'prime', 'said', 'asked', 'motion', 'amendment', 'like', 's', 'people'.

Lemmatizing is the process of grouping all forms of a word together so they can all be treated as a single category for analysis, while accounting for differences in terms of part of speech (e.g. 'speak', 'speaks', 'spoke', 'speaking', etc. would reduce to 'speak' whereas 'speaker', 'speakers' would reduce to 'speaker').

<sup>5</sup> The Reform/Canadian Alliance/Conservative parties are grouped together as a single category. For each parliament, only those parties that had at least one woman in their caucus are included in each analysis.

## Analysis: Speeches about women over time

Figure 1 shows the percentage of all parliamentary speeches that were about women in each parliament from 1968 to 2015, using the woman[1] and woman[2] measures. Using both measures, the proportion of speeches about women is low, never accounting for more than 1.6 per cent of speeches using the woman[1] measure or 2.0 per cent of speeches using the woman[2] measure. These findings suggest that the representation of women is a relatively minor component of debate in the House of Commons, consistent with earlier research that analyzed the representation of women in parliamentary debate over much smaller periods of time (Tremblay 1998).



**Figure 1.** Bar charts showing the percentage of speeches about women (left axis) in each parliament from 1968 to 2015 among all MPs using the woman[1] measure (A) and using the woman[2] measure (B). Red bars indicate Liberal governments, light blue bars indicate Progressive Conservative governments, and dark blue bars indicate Conservative governments. A grey line shows the percentage of seats held by women (right axis) in each parliament overlaid over each bar chart.

While the representation of women accounts for a small proportion of parliamentary speech overall, the percentage of parliamentary speeches about women increases as women's share of seats in the House of Commons increases. This shared directional trend is evident from visual inspection of Figure 1, and confirmed by a high Pearson correlation coefficient between women's share of seats and the percentage of speeches about women in each parliament (0.84 for woman[1] and 0.86 for woman[2]).

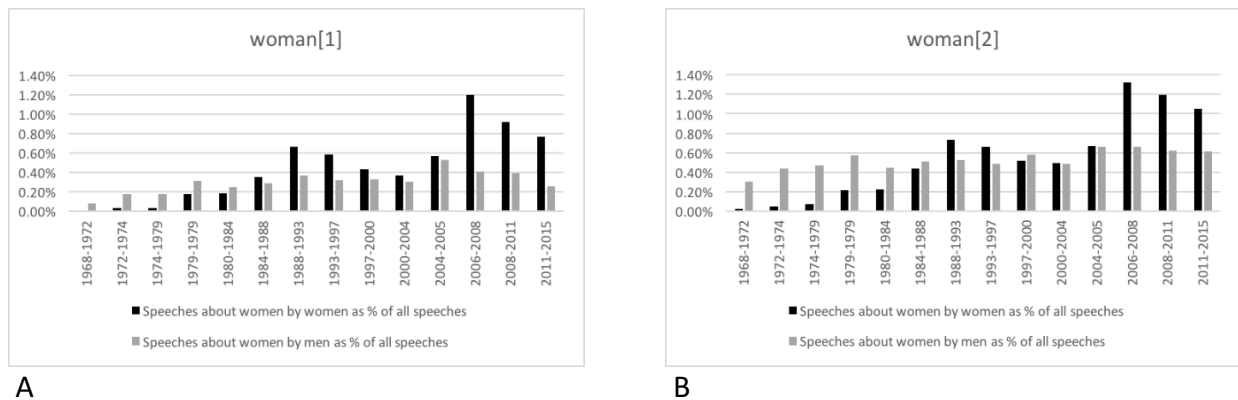
Counter to expectations, peaks in the substantive representation of women do not occur in the same parliaments in which the proportion of elected women increased dramatically. The 1984 and 1993 elections saw significant increases in the proportion of women in the House of Commons, but there is no spike in the proportion of speeches about women in these parliaments. Instead, the substantive representation of women peaks in the 34<sup>th</sup> Parliament (1988-1993), and again in the 39<sup>th</sup> Parliament (2006-2008) – both parliaments in which the number of elected women increased modestly or not at all.

The timing of the peaks in substantive representation of women in parliamentary discourse suggest that increases in discursive attention to women in parliament are shaped by other exogenous variables separate from the share of seats held by women. In the 34<sup>th</sup> and 39<sup>th</sup> Parliaments, policy initiatives and external events may have contributed to increased attention to women in parliamentary speech. In the 34<sup>th</sup> Parliament, Brian Mulroney's Progressive Conservative government introduced legislation that would have recriminalized abortion, and 14 women engineering students at Montreal's École Polytechnique were killed in an explicitly antifeminist attack. In the 39<sup>th</sup> Parliament, Stephen Harper's Conservative government introduced the Canada Child Care benefit, which provided tax credits to families with children



while rolling back the previous Liberal government’s bilateral childcare funding agreements with the provinces. These events and policy initiatives would have focused parliamentary attention on women and women’s issues and might account for the more dramatic increases in the number of speeches about women in each of these parliaments.

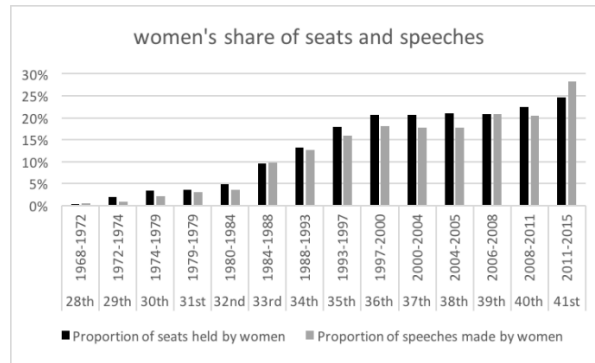
Analysis of the distribution of speeches about women by gender offers a test for the hypothesis that women MPs will represent women in parliamentary speech more than men and provides insight into which MPs drive increases in the substantive representation of women over time. Figure 2 shows the distribution of speeches about women by gender as a percentage of all parliamentary speeches. Using the woman[1] measure, women MPs made more speeches about women than men for the first time in the 33<sup>rd</sup> Parliament (1984-1988), when they accounted for 10 per cent of parliamentary seats, and continued to make more speeches about women than their male colleagues in every subsequent parliament. Using the woman[2] measure, women made more speeches about women than men for the first time in the 34<sup>th</sup> Parliament (1988-1993) when women accounted for 13 per cent of seats.



**Figure 2.** Bar charts showing the share of speeches about women contributed by men and women MPs as a percentage of all speeches in each parliament from 1968 to 2015 using the woman[1] measure (A) and using the woman[2] measure (B).

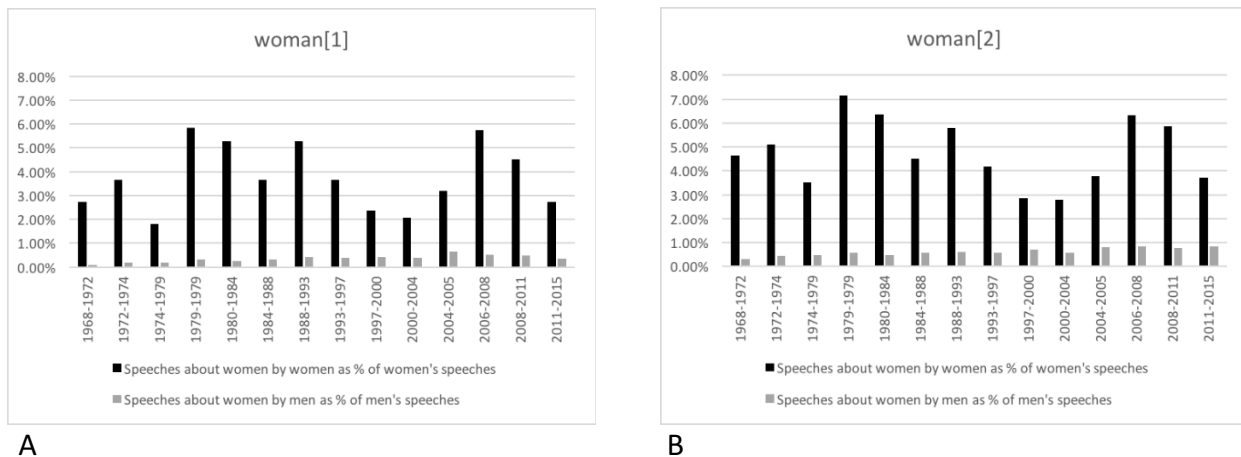
Variation in the proportion of speeches about women made by male MPs is relatively modest, but the share of speeches about women made by women MPs fluctuates considerably from one parliament to another. The extent to which women MPs prioritize the substantive representation of women in parliamentary speech does not appear to be closely related to their share of seats in the House of Commons, which steadily increased and plateaued over the period examined here. The parliaments in which women’s share of speeches about women spikes and the gap between men’s and women’s share of parliamentary speeches about women widens are also the parliaments in which the overall representation of women in parliamentary speech peaks. This suggests that the overall pattern in the representation of women in parliamentary debate is driven by women MPs. That is, the overall share of speeches about women increases when women MPs make more speeches about women.

It is notable that the overall pattern in the representation of women in parliamentary debate appears to be driven by women, given that women MPs’ share of parliamentary seats and speeches is consistently lower than that of men, as shown in Figure 3.



**Figure 3.** Bar charts showing the percentage of all parliamentary seats held by women and the percentage of all parliamentary speeches made by women MPs in each parliament from 1968 to 2015.

Women MPs' sizable share of speeches about women despite their lower share of parliamentary seats and speeches suggests that they prioritize the representation of women in parliamentary speech more than their male colleagues. Figure 4 confirms this, showing the number of speeches about women by gender as a percentage of each gender's total number of speeches. As a percentage of their own gender's share of speeches, women make more speeches about women than their male colleagues.

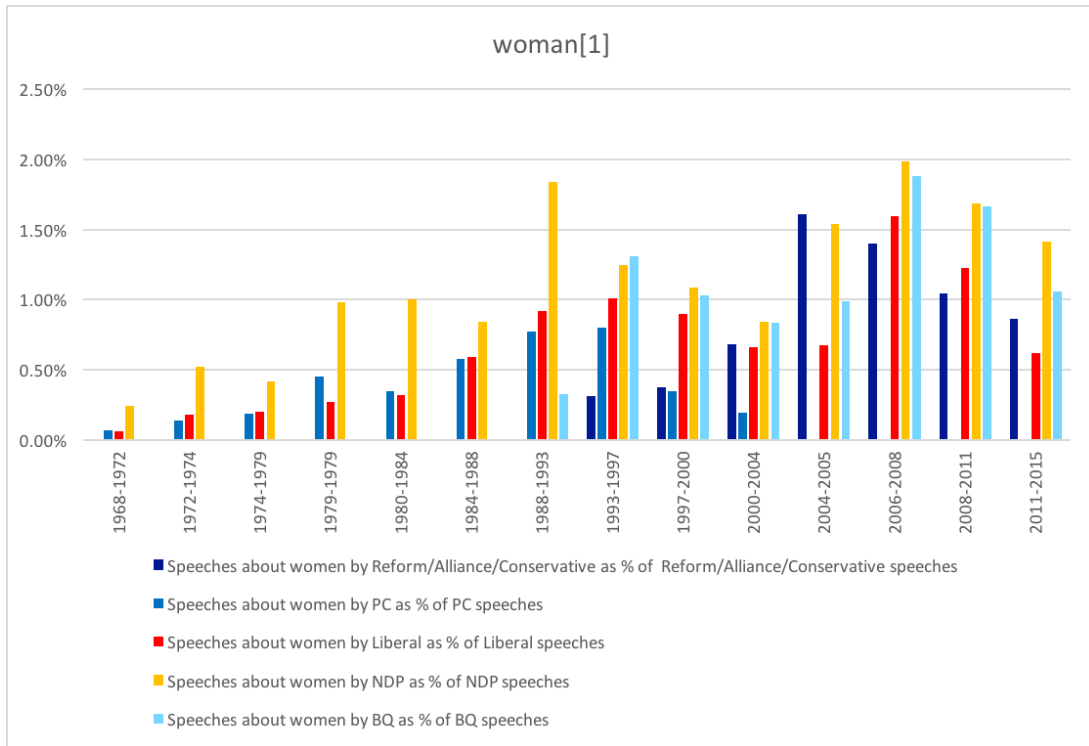


**Figure 4.** Bar charts showing the share of speeches about women contributed by men and women MPs in each parliament from 1968 to 2015 as a percentage of each sex's total number of speeches using the woman[1] measure (A) and using the woman[2] measure (B)

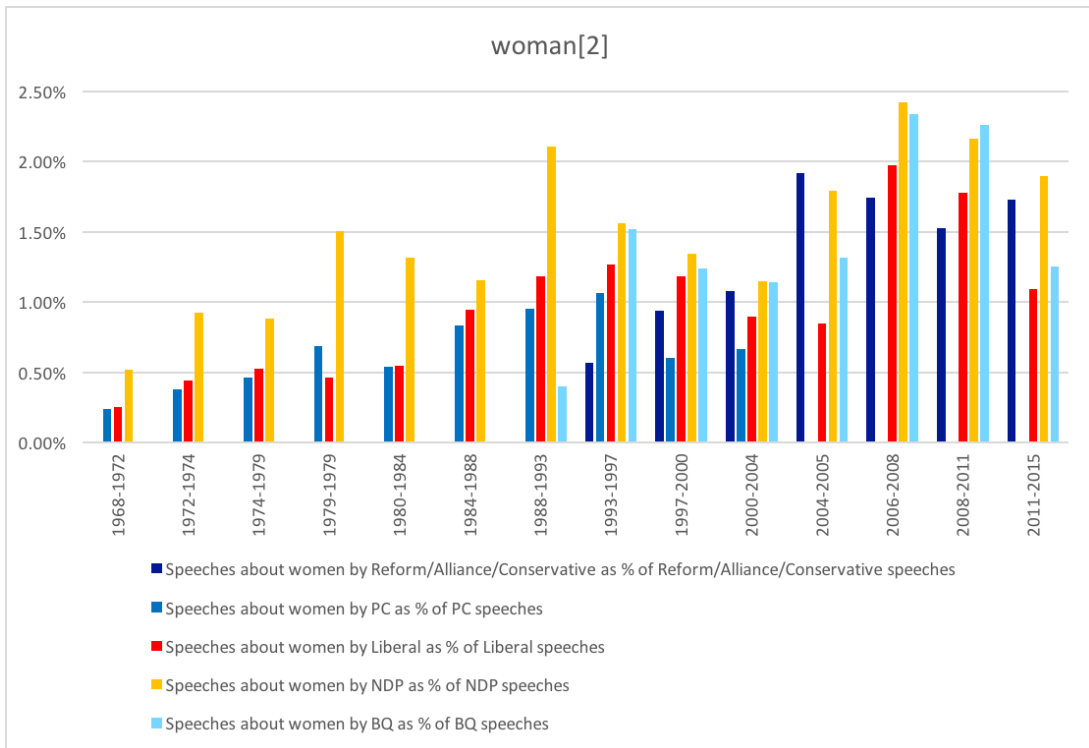
Analysis of the distribution of speeches about women by party offers a preliminary test for the hypothesis that parties of the left and centre-left will represent women more than parties of the right and provides insight into whether any one party tends to drive increases in the substantive representation of women over time.<sup>6</sup> Figure 5 shows the share of speeches about women by party as a percentage of each party's total number of speeches. In virtually every parliament, NDP and Bloc Québécois MPs devote a larger share of their party's parliamentary

<sup>6</sup> Given the changes in the Canadian party system over the period examined, the analysis includes only those parties whose MPs were responsible for at least ten per cent of all speeches in at least one third of the parliaments examined here. Parties that held seats but do not meet this threshold include the Social Credit and Green Parties, as well as Independents. For simplicity, speeches by Reform, Canadian Alliance, and Conservative MPs are treated as a single category.

speeches to the substantive representation of women than any other party, suggesting that they prioritize the representation of women more than other parties.



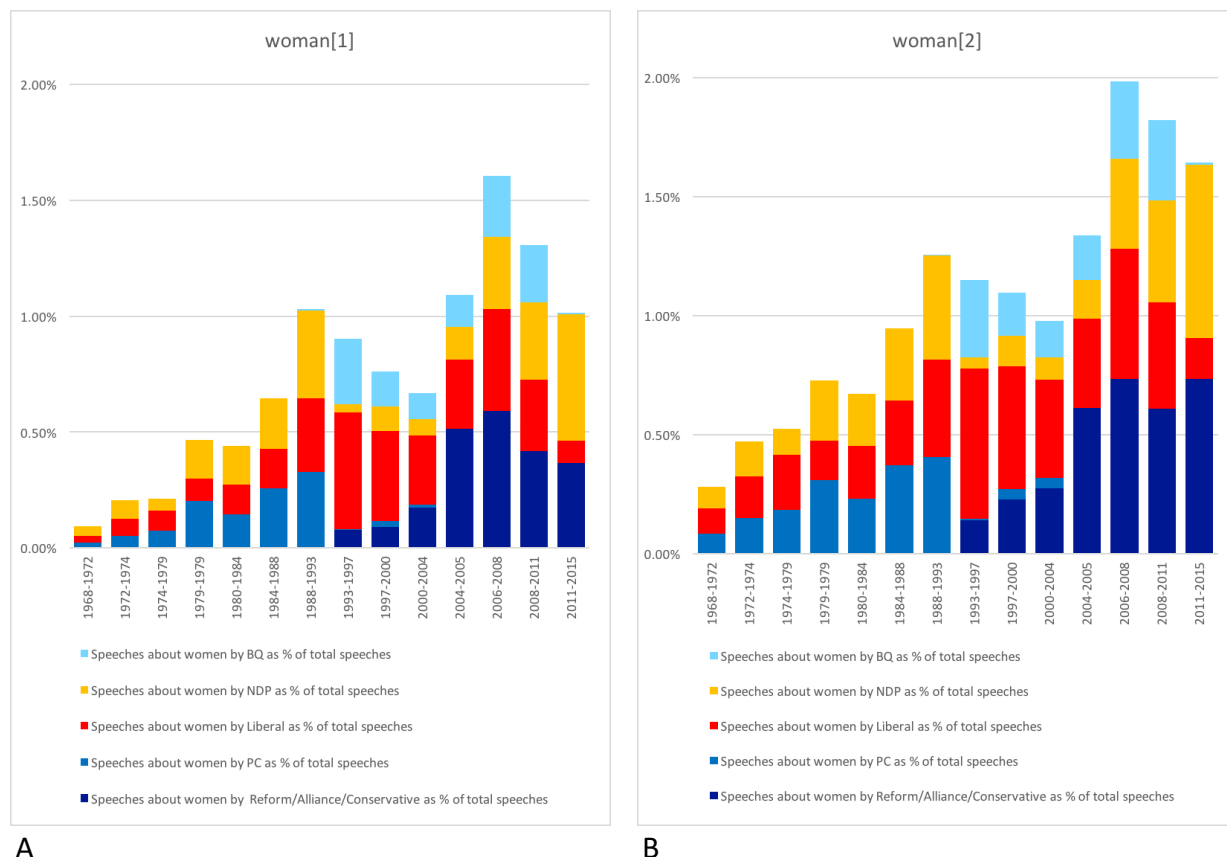
A



B

**Figure 5.** Bar charts showing the share of speeches about women contributed by each party as a percentage of each party's total number of speeches in each parliament from 1968 to 2015 using the woman[1] measure (A) and using the woman [2] measure (B).

Although NDP MPs prioritize the substantive representation of women in parliamentary speech, they appear not to drive overall patterns in parliamentary attention to women, likely due to their small share of parliamentary seats. Figure 6 shows the distribution of speeches about women by political party as a percentage of all parliamentary speeches. These charts suggest that no single party is consistently responsible for the bulk of speeches about women across all parliaments. Whereas women MPs are responsible for the bulk of speeches about women despite accounting for less than one quarter of all parliamentary seats, there is no partisan bloc of MPs driving the substantive representation of women in parliamentary debate in the same way.



**Figure 6.** Bar charts showing the share of speeches about women contributed by each political party as a percentage of the total number of speeches in each parliament from 1968 to 2015 using the woman[1] measure (A) and using the woman[2] measure (B).

Nonetheless, despite their small share of seats, NDP MPs were responsible for the largest share of speeches about women in several parliaments – although the size of their lead is marginal, typically only a few hundredths of a percentage point higher than the party with the next biggest share. In all other parliaments, the party that formed the government – and thus the party with the largest share of seats and speeches overall – made the largest share of speeches about women (with the exception of the 38<sup>th</sup> Parliament from 2004 to 2005, when the Liberals formed the government but Conservative MPs made the plurality of speeches about women). This makes sense as a matter of logical necessity. The more speeches members of a party make, the more opportunities they have to make speeches about women. If the governing party makes the most speeches, it will be easier for them to make the most speeches about women.

Counter to the expectation that parties of the left and centre left would be more likely to represent women in parliamentary speech, neither the NDP nor the Liberals were consistently

responsible for the bulk of parliamentary speeches about women (although members of the NDP did on occasion over-perform relative to their small share of seats, making more speeches about women than any other party). The expectation that parties of the left are more likely to represent women in parliamentary speech than parties of the right is not entirely unsupported, but the impact of party is not as clear cut as with gender. Members of the NDP and Bloc Québécois prioritize the substantive representation of women in debate more than others, but their relatively marginal parliamentary status means that the inclination of these MPs to represent women does not have a significant impact on the overall pattern of speeches about women over time. Partisan differences, therefore, do not appear to drive changes in the substantive representation of women in parliamentary speech over time in the same way that gender differences do.

### **Analysis: Which MPs represent women**

The results of the regression, which estimates the independent effect of gender and party on the number of parliamentary speeches MPs make about women, are presented in Table 1. I used negative binomial regressions to estimate the number of speeches about women in each of the three models, with robust standard errors clustered by MP.<sup>7</sup> The first model, which includes only gender and party affiliation as potential predictors of the number of speeches about women an MP will make, suggests that gender is an important predictor with women likely to make more speeches about women than their male colleagues. It also suggests that NDP and Conservative MPs are likely to make more speeches about women than Liberal MPs. And in fact, the effect of being a Conservative MP appears to be stronger than the effect of being an NDP MP – an initial finding that runs counter to the expectation that left party MPs will make more speeches about women than right party MPs.

The addition of controls to account for an MP's status as a member of the government or opposition, whether an MP is the Minister responsible for the Status of Women, and the share of parliamentary seats held by women, however, reduces both the size and significance of the effect of membership in the Conservative party on an MP's likelihood to make more speeches about women. In this second model, the effect of being an NDP MP remains significant at the 99.9% confidence level, and the size of that effect is larger than the effect of being a Conservative MP; the effect of being a Conservative MP is reduced and drops down to the 95% confidence level. None of the other party affiliations has a significant effect on the number of speeches about women an MP is expected to make.

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<sup>7</sup> I also considered Poisson Regression, but there is overdispersion in the dependent variable (count of speeches about women by MP), so negative binomial regression is the more appropriate choice in this case.

Table 1. Determinants of Count of Speeches About Women

Gender (Female = 1)	2.38*** (0.06) [37.39]	2.18*** (0.06) [33.65]	2.18*** (0.06) [33.66]
NDP (Base = Liberal)	0.30*** (0.080) [3.68]	0.41*** (0.09) [4.58]	0.42*** (0.09) [4.55]
Bloc Québécois (Base = Liberal)	0.19 . (0.10) [1.87]	0.06 (0.11) [0.52]	0.06 (0.11) [0.52]
Progressive Conservative (Base = Liberal)	-0.17* (0.07) [-2.21]	0.20 . (0.08) [1.91]	0.16 . (0.08) [1.93]
Reform/Alliance/Conservative (Base = Liberal)	0.520*** (0.07) [7.17]	0.20* (0.08) [2.56]	0.20** (0.08) [2.56]
Government		0.06 (0.06) [1.00]	0.06 (0.06) [0.98]
Minister of the Status of Women		1.28*** (0.27) [4.81]	1.28*** (0.27) [4.82]
Share of seats held by women		4.59*** (0.42) [10.92]	4.94*** (1.29) [3.82]
Parliament			-0.01 (0.03) [-0.29]
Observations	4147	4147	4147
2 x log-likelihood	-11838	-11703	-11703

Negative Binomial regression model with robust standard errors clustered by MP. \*p<0.05; \*\*p<0.01; \*\*\*p<0.001. Values in square brackets are z-scores.

The effect of being in government or opposition is not statistically significant, but the effect of whether an MP is the Minister and the share of parliamentary seats held by women are both significant at the 99.9% confidence level. Being the Minister for the Status of Women increases an MP's likelihood of making more speeches about women, a reasonable finding given that an MP with this ministerial portfolio is likely to spend more time in parliamentary debate speaking about women than the average MP. Notably, however, the effect of being the Minister is smaller than the effect of gender. That is, the average woman MP is still likely to make more speeches about women in parliamentary debate than the Minister for the Status of Women.

The effect of the proportion of parliamentary seats held by women is sizable, consistent with the expectation that the presence of more women in parliament will increase the frequency with which MPs will speak about women in parliamentary debate. The effect of the share of parliamentary seats held by women appears to be larger than the effect of gender, but the size of these effects must be interpreted with caution. A change from 0 to 1 on the value of the share of seats held by women reflects a change in the composition of the House of Commons from a parliament that contained no women, to parliament composed exclusively of women, an objectively huge (and frankly unlikely) swing.

The third model adds a final additional control to account for general variation from one parliament to the next and changes over time not captured in the other independent variables. The impact of this additional control is limited, with the size and significance of the effects of most variables consistent with the second model.

The findings from the regression are clear on the importance of gender as a determinant of the count of speeches MPs will make about women. Across all three models, the effect of gender is statistically significant and larger than the effect of most other variables. This confirms the expectation that women MPs are more likely to make speeches about women than their male colleagues. To illustrate the effect of gender on the number of speeches about women an MP is likely to make, I computed the out of sample predicted count of speeches made by a male and a female MP using the third model and holding all other variables at their mean. All else being equal, a female MP will make 10 speeches about women in a given parliament, while a male MP will make only one.

When it comes to the effect of party affiliation, the results are less straightforward. The models suggest clearly that NDP MPs are more likely than all other MPs to make speeches about women. This finding is consistent with the expectation that left party MPs will be more likely to make speeches about women. However, the finding that Conservative MPs are more likely than Liberal MPs to make speeches about women calls into question the expectation that the relationship between party affiliation and the representation of women in parliamentary debate is based primarily on left-right ideological differences. The Conservative Party and its antecedents are widely understood to be firmly to the right of the Liberal Party, and yet they are more likely to make speeches about women than Liberal MPs, even when factors such as government status are accounted for. This finding, which runs counter to theoretical expectations that members of right parties will be less likely to substantively represent women invites further investigation into the content and direction of Conservative MPs' speeches about women.

### **Analysis: Identifying the vocabulary of women MPs and speeches about women**

The identification of men and women MPs' distinctive vocabularies as well as the distinctive vocabulary of speeches about women offers insight into the issue content of the substantive representation of women. To identify the topics that women and men distinctively and consistently prioritize in parliamentary speech over time, I trained and tested a multinomial naïve Bayes classifier for each parliament using 10-fold stratified shuffle split cross-validation.

The model accounts for the frequency with which a word occurs in a speech when assessing that word's importance for predicting the class of a speech. No cap was imposed on the number of features included in the model, but a minimum threshold requiring that a word must appear at least five times in a speech to be included in the model was established to ensure that the results were not skewed by words that were used uniquely but infrequently by MPs of either gender.

Table 2 reports the accuracy measures for the model in each parliament. The accuracy scores appear reasonably strong, but these must be interpreted in relation to the number of speeches made by men and women in each parliament. The distribution of speeches between men and women is unbalanced, with significantly more speeches made by men than women in each parliament.

	Accuracy	F-Score	% speeches by women MPs
41st Parliament	70.76%	0.806	28%
40th Parliament	76.35%	0.854	20%
39th Parliament	76.11%	0.852	21%
38th Parliament	77.63%	0.866	18%
37th Parliament	78.45%	0.872	18%
36th Parliament	77.35%	0.864	18%
35th Parliament	79.15%	0.878	16%
34th Parliament	83.52%	0.907	13%
33rd Parliament	88.07%	0.935	10%
32nd Parliament	94.00%	0.969	4%
31st Parliament	95.31%	0.976	3%
30th Parliament	96.35%	0.981	2%
29th Parliament	98.47%	0.992	1%
28th Parliament	98.91%	0.995	1%

**Table 2.** Accuracy and F-Scores for multinomial naïve Bayes models by parliament. The proportion of speeches made by women in each parliament is noted in the far-right column.

Given, for example, that 79 per cent of speeches in the 39th Parliament were made by men, the 76 per cent accuracy rate for the model is essentially the same accuracy rate one would obtain by predicting a male speaker for every speech. The percentage of speeches the models accurately predict tracks closely to the share of speeches made by men in each parliament, a pattern that does not inspire unbridled confidence in the predictive capacity of the models. Nonetheless, the reasonably robust f-scores (a more comprehensive measure of how well the model predicts the class of a document by accounting for the precision and recall of the model in addition to its accuracy), achieved through cross validation, mitigate an otherwise dim view of the models' predictive capacities and provides some reassurance that the features extracted from each model are reliable indicators of the words that best characterize men's and women's patterns of speech.

Table 3 lists 55 of the most important words using odds ratios that distinguish the patterns of speech of all men and women MPs' from one another in two or more parliaments. For both women and men, the table lists the features that best predict if a speech was made by a male or female MP in the far left column, the topic or issue focus that each word implies in the centre column, and the percentage of parliaments in which each term was part of their vocabulary in the far right column. The topics identified in the middle column were generated inductively and coded manually. Clear issue foci emerge quite strikingly for both genders. Male MPs consistently prioritize issues relating to agriculture and food, trade, energy, budget and finance, fisheries, and manufacturing – all topics related to the broader, and stereotypically masculine



sphere of the economy. Women MPs, by contrast, tend to focus on issues relating explicitly to gender, health (and women's health in particular), family and children, and violence against women – issues that are typically viewed as women's issues.

Table 4 shows the features that best distinguished men's and women's patterns of speech in two or more parliaments using the approach that compares patterns of speech by men and women MPs within each party and retains only those words that distinguished men's and women's speech across all parties. The lists of 'most male' and 'most female' words in each parliament was shorter using this approach, and the resulting combined lists are also shorter. The list of most female words generated through this second method reveals a tighter issue focus – that is, a larger share of the words on the list are words that relate to the four or five issues that characterize women's speech.

The results from this second approach show again that women MPs raise issues relating to gender, health and women's health, and family and children in parliamentary speech, consistent with the findings from the first approach. They also suggest that women MPs are more likely to prioritize issues relating to economic equality – a focus that did not emerge using the approach that compared all men and all women MPs. Among male MPs, findings from this second method suggest an issue focus consistent with the first approach – agriculture and food, trade, and energy. The second approach also reveals a focus among male MPs on an topic that did not emerge using the first approach, namely the operations and activities of parliament itself.

While there is little overlap in terms of specific words between the two sets of lists, both approaches reveal a consistent topic focus, with women MPs clearly prioritizing gender, women's health, and family and children in the vocabularies generated by both methods. This suggests that despite partisan differences there is a core issue focus among women MPs. Women MPs' focus on issues relating to gender, women's health, and family and children in parliamentary discourse is broadly consistent with findings from the United Kingdom, where women MPs were found to prioritize gendered terminology as well as issues pertaining to “the family and children, education, health, and care” (Blaxill and Beelen 2016: 20).

Best predictors of document class by gender (comparing all MPs)					
Women			Men		
feature	topic	% of parliaments	feature	topic	% of parliaments
feminist	gender	0.50	wheat	agriculture and food	0.57
women	gender	0.43	grain	agriculture and food	0.50
silicone		0.29	farmer	agriculture and food	0.50
mutilation	violence against women	0.29	barley	agriculture and food	0.50
conquest		0.21	bushel	agriculture and food	0.43
alimony	family and children	0.21	feed	agriculture and food	0.43
pregnant	women's health	0.21	farm	agriculture and food	0.36
gel		0.21	pipeline	energy	0.36
foster		0.21	agriculture	agriculture and food	0.36
retransmission	health	0.21	gentleman		0.36
parental	family and children	0.21	tonne		0.29
tapestry		0.21	aircraft		0.29
sociale		0.21	dairy	agriculture and food	0.29
childcare	family and children	0.21	durum	agriculture and food	0.29
breast	health	0.21	fisherman	fisheries	0.29
intensification		0.21	fishery	fisheries	0.29
inhalation		0.21	chrysotile		0.29
actress		0.21	livestock	agriculture and food	0.29
nutrition	health	0.21	asbestos		0.29
babysitter	family and children	0.21	carry		0.29
daytime		0.14	flour	agriculture and food	0.29
prix		0.14	tariff	trade	0.21
nausea	health	0.14	guy		0.21
northerner		0.14	gallon		0.21
backgrounder		0.14	export	trade	0.21
calcium	health	0.14	dissertation		0.21
polytechnique	violence against women	0.14	canola	agriculture and food	0.21
parenting	family and children	0.14	currency	trade	0.21
levity		0.14	subdivision		0.21
premeditation		0.14	governor		0.21
marker		0.14	marketing		0.21
pasta		0.14	socialism	ideology	0.21
methadone	health	0.14	automobile	manufacturing	0.21
rupture		0.14	manufacturing	manufacturing	0.21
immunization	health	0.14	pork	agriculture and food	0.21
conciliator		0.14	businessman		0.21
trainer		0.14	craft		0.21
smokeless		0.14	crab	fisheries	0.21
hemorrhage	health	0.14	shrimp	fisheries	0.21
fad		0.14	copper		0.21
implant		0.14	inshore	fisheries	0.21
housework	family and children	0.14	hog	agriculture and food	0.21
twinkle		0.14	annuity	budget and finance	0.21
concertation		0.14	navy	national defence	0.21
alcoholism	health	0.14	vessel		0.21
clerical		0.14	petroleum	energy	0.21
f�eminine	gender	0.14	deficit		0.21
lymphoma	health	0.14	potato	agriculture and food	0.21
closed		0.14	exploration		0.21
rainbow		0.14	recollection		0.21
giver		0.14	posture		0.21
pharmacare	health	0.14	salmon	fisheries	0.21
sorting		0.14	investment	budget and finance	0.21
aptitude		0.14	treasury	budget and finance	0.21
menopause	women's health	0.14	stabilization	budget and finance	0.21

**Table 3.** List of the top features that best predict whether a speech was made by a man or woman MP. Calculated by constructing a multinomial na ive Bayes classifier that estimates the class (gender) of every speech among all MPs for every parliament.

Best predictors of document class by gender (comparing MPs by party)					
Women			Men		
feature	topic	% of parliaments	feature	topic	% of parliaments
woman	<i>gender</i>	0.43	argument	<i>parliamentary activity</i>	0.64
equality	<i>equality</i>	0.43	agriculture	<i>agriculture and food</i>	0.57
violence	<i>violence against women</i>	0.36	friend		0.50
gender	<i>gender</i>	0.36	hour		0.50
maternity	<i>economic (in)equality*</i>	0.29	grain	<i>agriculture and food</i>	0.50
pregnancy	<i>women's health</i>	0.29	tariff	<i>trade</i>	0.50
contraception	<i>women's health</i>	0.21	farmer	<i>agriculture and food</i>	0.50
ghetto		0.21	wheat	<i>agriculture and food</i>	0.50
women	<i>gender</i>	0.21	proposition	<i>parliamentary activity</i>	0.43
pay	<i>economic (in)equality</i>	0.21	dairy	<i>agriculture and food</i>	0.43
male	<i>gender</i>	0.21	west	<i>agriculture and food</i>	0.43
childhood	<i>family and children</i>	0.21	farm	<i>agriculture and food</i>	0.43
proportionate	<i>economic (in)equality</i>	0.14	consent	<i>parliamentary activity</i>	0.43
nationalist		0.14	clock	<i>parliamentary activity</i>	0.43
poverty	<i>economic (in)equality</i>	0.14	gas	<i>energy/natural resources</i>	0.43
nursing	<i>health</i>	0.14	mining	<i>energy/natural resources</i>	0.36
female	<i>gender</i>	0.14	investment	<i>budget and finance</i>	0.36
breast	<i>women's health</i>	0.14	chairman		0.36
redundant		0.14	parliament	<i>parliamentary activity</i>	0.36
supermarket		0.14	flow		0.36
humanity		0.14	party	<i>parliamentary activity</i>	0.36
flu	<i>health</i>	0.14	return		0.36
men	<i>gender</i>	0.14	gentleman		0.36
equity	<i>economic (in)equality</i>	0.14	transportation	<i>transportation</i>	0.36
gap	<i>economic (in)equality</i>	0.14	difficulty		0.36
parent	<i>family and children</i>	0.14	company		0.36
child	<i>family and children</i>	0.14	bushel	<i>agriculture and food</i>	0.36
care	<i>health/family and children</i>	0.14	price		0.36
toy		0.14	aircraft		0.36
breadwinner	<i>economic (in)equality</i>	0.14	stabilization		0.36
mortality	<i>health</i>	0.14	page		0.36
nutrition	<i>health</i>	0.14	floor	<i>parliamentary activity</i>	0.36
tuberculosis	<i>health</i>	0.14	point	<i>parliamentary activity</i>	0.36
anonymity		0.14	deficit	<i>budget and finance</i>	0.36
film		0.14	item		0.36
weakening		0.14	whip	<i>parliamentary activity</i>	0.36
outrage		0.14	railway	<i>transportation</i>	0.36
			impression		0.36
			resource	<i>energy/natural resources</i>	0.29
			post		0.29
			import	<i>trade</i>	0.29
			evening		0.29
			capital		0.29
			marketing		0.29
			ownership		0.29
			subject		0.29
			statute		0.29
			basis		0.29
			extent		0.29
			suggestion	<i>parliamentary activity</i>	0.29
			date		0.29
			park		0.29
			leader	<i>parliamentary activity</i>	0.29
			rail	<i>transportation</i>	0.29
			consideration		0.29
	<i>*may also refer to health or family and children</i>				

**Table 4.** List of the top features that best predict whether a speech was made by a man or woman MP. Calculated by constructing a multinomial naïve Bayes classifier that estimates the class (gender) of every speech within each party and retaining features that are top predictors of gender across all parties.

To complement the identification of women MPs' distinctive vocabularies, I identified the vocabulary of speeches about women using a multinomial naïve Bayes model to identify the words that best distinguish speeches about women (using both the woman[1] and woman[2] measures) from all other speeches in each parliament.<sup>8</sup> Table 5 lists the top features that best predict whether a speech is about women. The vocabulary of speeches about women is characterized by a focus on gender, family and children, violence against women, and equality. This topic focus shares significant overlap with the vocabulary of speeches by women. The shared focus on the same five issues among women MPs and speeches about women (namely gender, family and children, equality, violence against women, and health) suggests that the substantive representation of women in parliamentary debate is characterized by attention to these issues. The issue focus identified here suggests that certain topics are central to the substantive representation of women. The overlap between the topics that are distinctively raised by women MPs and the topics that characterize speeches about women also reinforces the finding that women MPs are more likely to engage in the substantive representation of women. However, the analysis does not provide an indication of the direction in which MPs speak about these issues – that is, whether individual MPs' speeches about these five topics advocate for measures that would increase or retrench women's equality. This gap notwithstanding, the findings provide valuable insight into the specific issue content that characterizes the substantive representation of women in parliamentary speech.

To the extent that the substantive representation of women is manifested through the making of claims by and about women, the focus on gender, family and children, equality, violence against women, and health among speeches by women MPs and speeches about women suggests that the substantive representation of women is characterized by attention to the unequal balance of power between men and women. These findings offer empirical support for the position that conceives of the substantive representation of women in terms of support for issues relating to gender equality and social welfare policies.

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<sup>8</sup> The accuracy and f-scores for the multinomial naïve Bayes models used to estimate the vocabularies of speeches about women in each parliament are notably lower than those for the models that estimate the vocabularies of speeches by women. This is because the two classes of interest in the former case (speeches about women vs. all other speeches) are more dramatically unbalanced than the classes of interest in the latter case (speeches by women vs. speeches by men). Speeches about women account for less than two per cent of all speeches in each parliament (see Figure 1) whereas the share of speeches by women ranges from less than one per cent to just over 25 per cent (see Figure 3). The poor accuracy and f-scores undermine our confidence in the predictive capacity of the model, but the features that emerge as the most important features for distinguishing between speeches about women and all other speeches nonetheless provide a useful rough indication of the topics and issues that characterize speeches about women.

best predictors of speeches about women (woman[1])			best predictors of speeches about women (woman[2])		
feature	topic	% of parliaments	feature	topic	% of parliaments
women	<i>gender</i>	0.64	women	<i>gender</i>	0.71
businesswoman	<i>gender</i>	0.43	female	<i>gender</i>	0.64
feminist	<i>gender</i>	0.43	feminist	<i>gender</i>	0.57
polytechnique	<i>violence against women</i>	0.36	maternity	<i>economic (in)equality*</i>	0.57
typing		0.29	male	<i>gender</i>	0.50
feminism	<i>gender</i>	0.29	polytechnique	<i>violence against women</i>	0.43
boyfriend	<i>family and children</i>	0.21	childbirth	<i>women's health</i>	0.43
conkurs		0.21	hygiene	<i>health</i>	0.36
equality	<i>equality</i>	0.21	woman	<i>gender</i>	0.36
violence	<i>violence against women</i>	0.21	mutilation	<i>violence against women</i>	0.36
mutilation	<i>violence against women</i>	0.21	feminism	<i>gender</i>	0.36
f�eminine	<i>gender</i>	0.21	sexism	<i>gender</i>	0.36
rugby		0.21	grandmother	<i>family and children</i>	0.36
emancipation	<i>equality</i>	0.21	typing		0.29
assailant	<i>violence against women</i>	0.21	businesswoman	<i>gender</i>	0.29
inequality	<i>equality</i>	0.21	housework	<i>economic (in)equality</i>	0.29
stereotyping	<i>equality</i>	0.21	boyfriend	<i>family and children</i>	0.21
men	<i>gender</i>	0.21	equality	<i>equality</i>	0.21
dummy		0.14	misogyny	<i>gender</i>	0.21
female	<i>gender</i>	0.14	violence	<i>violence against women</i>	0.21
contraceptive	<i>women's health</i>	0.14	battering	<i>violence against women</i>	0.21
pose		0.14	chattel	<i>economic (in)equality</i>	0.21
bordering		0.14	ghetto		0.21
shipbuilder		0.14	granddaughter	<i>family and children</i>	0.21
substantive		0.14	gender	<i>gender</i>	0.21
offspring	<i>family and children</i>	0.14	infant	<i>family and children</i>	0.21
blip		0.14	f�eminine	<i>gender</i>	0.21
misogyny	<i>gender</i>	0.14	feminine	<i>gender</i>	0.21
delusion		0.14	parenthood	<i>family and children</i>	0.21
adapt		0.14	activism		0.21
complaining		0.14	vigil		0.21
fidelity	<i>family and children</i>	0.14	pregnancy	<i>women's health</i>	0.21
achieve		0.14	men	<i>gender</i>	0.21
comparative		0.14	abortion	<i>women's health</i>	0.21
inbox		0.14	baffle gab		0.14
battering	<i>violence against women</i>	0.14	malady	<i>health</i>	0.14
antique		0.14	fraternity		0.14
dispatch		0.14	midwifery	<i>women's health</i>	0.14
boards		0.14	morbidity	<i>health</i>	0.14
animation		0.14	contraceptive	<i>women's health</i>	0.14
recriminalization		0.14	eyesight	<i>health</i>	0.14
acquittal		0.14	denigration		0.14
penniless		0.14	gel		0.14
paternity	<i>family and children</i>	0.14	equivalence		0.14
gunman	<i>violence against women</i>	0.14	11		0.14
cancelling		0.14	widow	<i>family and children</i>	0.14
dearth		0.14	emphasize		0.14
fundamentalist		0.14	charging		0.14
inattention		0.14	surrogate	<i>women's health</i>	0.14
hometown		0.14	womb	<i>women's health</i>	0.14
march		0.14	accumulate		0.14
affirm		0.14	hypocritical		0.14
televising		0.14	animation		0.14
daddy	<i>family and children</i>	0.14	missing		0.14
blending		0.14	recriminalization		0.14

\* may also refer to health or family and children

**Table 5.** List of the top features that best predict whether a speech is a speech about women, using the woman[1] and woman[2] measures. Calculated by constructing a multinomial na ive Bayes classifier that estimates the class (about women) of every speech in each parliament.

## Discussion and conclusion

Taken together, the findings from all three parts of the analysis undertaken here offer strong evidence to suggest that women, regardless of party, are more likely than other MPs to represent women in parliamentary debate and put women's issues on the parliamentary agenda in the Canadian House of Commons. The first part of the analysis shows that women MPs represent women in parliamentary speech more frequently than men. Strikingly, once their share of seats in the House of Commons surpassed 10 per cent, women MPs made more speeches about women than men in absolute terms and consistently prioritized the representation of women as a proportion of women's speeches. Logically then, as women's share of seats increased, so too did the representation of women in parliamentary speech overall, and women MPs appear to have been the driving force behind changes in the substantive representation of women in parliamentary speech over time.

The impact of partisan differences is less straightforward. Left party MPs – that is, MPs from the NDP and Bloc Québécois – tended to prioritize the representation of women in parliamentary speech, but their small share of seats in the House of Commons meant they were rarely responsible for the largest share of speeches about women. Whereas women MPs consistently made more speeches about women than men despite their smaller share of parliamentary seats, dramatically over-performing on the substantive representation of women, left party MPs as a group did not over-perform to the same extent. While the findings suggest that NDP MPs play an important role in the substantive representation of women, no single party was consistently responsible for the largest share of speeches over time.

The second part of the analysis, which isolates the impact of gender and party on the likelihood of MPs to make speeches about women using regression analysis, confirms that women MPs are more likely to make speeches about women than their male colleagues and the effect of gender is stronger than the effect of most other variables. The models show that the effect of party is much less decisive than gender in determining an MP's likelihood to make speeches about women. Nonetheless, the models show that NDP MPs are more likely than all other MPs to make speeches about women. This is consistent with the expectation that members of left parties will be more likely to make speeches about women. However, the models also suggest that Conservative MPs are more likely than Liberal MPs (but less likely than NDP MPs) to make speeches about women – a finding that runs counter to the expectation about the effect of party. This finding invites further investigation into the content and direction of Conservative MPs' speeches about women.

These findings challenge the conventional wisdom in the study of Canadian politics about the primacy of partisan affiliation as a key explanatory variable for legislator behaviour, and suggest that on certain issues – namely the substantive representation of women in parliamentary debate – party is not the primary driving force. By showing that an MP's gender matters more than their partisan affiliation in shaping their inclination to represent women in parliamentary debate, the findings presented here suggest that the scope for more independent MP behaviour might be broader than is typically assumed.

The third part of the analysis, which identifies the words that distinguish women MPs patterns of speech from that of their male colleagues, and the content of speeches about women from all other parliamentary speeches shows that women MPs and speeches about women both tend to prioritize issues relating to gender, family and children, violence against women, health, and equality. These vocabularies flesh out our understanding of the issues parliamentarians focus on when engaging in the substantive representation of women in parliamentary speech. The consistent focus on five recurring issues among speeches *by* women and speeches *about* women

offers strong evidence to suggest that the substantive representation of women in parliamentary speech is indeed characterized by attention to these issues.

These findings offer empirical support for feminist scholarship that conceives of the substantive representation of women in terms of policies that address women's equality and autonomy. The focus of claims made by and about women on gender, family and children, equality, violence against women, and health confirms that the issues identified as relevant for women and the advancement of women's equality in feminist scholarship are in fact the issues that women MPs and speeches about women focus on. This mitigates against critiques that suggest that the reduction of women's interests to a particular set of issues and policies relating to women's equality is overly simplistic or essentializing. Overall, this study offers strong evidence to suggest that gender matters for the substantive representation of women, with women MPs more likely to represent women in parliamentary speech even in an institutional context in which party affiliation exerts a strong influence over legislator behaviour.

## Appendix 1

The variables used in the regression models are described below.

- **woman1\_count**: the dependent variable. A count variable that measures the number of speeches about women (using the woman[1] measure) made by each observed MP in one parliament.
- **gender**: a dummy variable that has a value of 1 for female MPs and 0 for male MPs.
- **ndp**: a dummy variable that has a value of 1 for New Democratic Party MPs and 0 for all other MPs.
- **bq**: a dummy variable that has a value of 1 for Bloc Québécois MPs and 0 for all other MPs.
- **pc**: a dummy variable that has a value of 1 for Progressive Conservative MPs and 0 for all other MPs.
- **cpc**: a dummy variable that has a value of 1 for Conservative, Canadian Alliance, and Reform MPs and 0 for all other MPs.
- **govt**: a dummy variable that has a value of 1 for MPs who are members of the governing party and 0 for MPs who are members of opposition parties.
- **minister**: a dummy variable that has a value of 1 for MPs who served as the Minister responsible for the Status of Women in a given parliament and 0 for all other MPs.
- **womenparl**: a variable reflecting the proportion of seats held by women in each parliament at the time of the general election. Values are between 0 and 1.
- **speech\_count**: a count variable that measures the total number of speeches made by each observed MP in one parliament. This variable is used as an offset in the models to control for the fact that the total number of speeches about women an MP makes will be linked to the total number of speeches they make.
- **parliament**: an integer variable that ranges from 1 to 14, corresponding to each parliament included in the data set (the 28<sup>th</sup> Parliament has the value 1, and the 41<sup>st</sup> Parliament has the value 14).



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