Do Women Politicians Face More Interruptions? An Analysis of Interjections in the Australian Parliamentary Debates (1998-2025)

Lindsay Katz* Inessa De Angelis† Rohan Alexander‡

October 30, 2025

Interruptions are a routine component of parliamentary debate, but also reveal underlying power dynamics and behavioural norms within political institutions. Using a dataset of digitized Australian Hansard transcripts from 1998 to 2025, this paper examines the frequency of interruptions in the House of Representatives debates, focusing on the effects of gender and political party affiliation. Our analysis shows that women Members of Parliament (MPs) and MPs from centre and centre-right leaning parties are less likely to be interrupted, and that the overall frequency of interruptions declined as the number of women in parliament increased. These findings provide new empirical evidence on the relationship between institutional norms and representation, demonstrating how quantitative analysis of parliamentary speech can detect subtle, gendered patterns of discursive inequality over time.

Introduction

Women are increasingly being elected to parliaments around the world, including in Australia. Despite gains in numerical representation, women remain underrepresented in a substantive sense, because their ability to influence political debates and shape policy outcomes is often constrained. Pitkin (1967) distinguishes between these two forms of representation as *descriptive* and *substantive*. Descriptive representation refers to the presence of women in elected

*University of Toronto, lindsay.katz@mail.utoronto.ca
†University of Toronto, inessa.deangelis@mail.utoronto.ca
‡University of Toronto, rohan.alexander@utoronto.ca

office, while substantive representation involves speaking and acting on behalf of women's interests, including introducing legislation, engaging in debates, or undertaking advocacy efforts (Rayment and McCallion 2024).

Increases in women's descriptive representation do not automatically lead to stronger substantive representation. Feminist institutionalist scholars argue that political institutions are gendered in ways that constrain women's political influence (Tremblay 2003; Sawer 2012; Kenny 2014). Formal and informal rules, norms, and hierarchies within institutions can subtly, yet powerfully limit women's ability to engage in substantive representation. One such behaviour is the use of interruptions during parliamentary proceedings. Interruptions are defined as "intrusions into the current speaker's turn" (Kollock, Blumstein, and Schwartz 1985, 38). Although interruptions are a routine and institutionally sanctioned feature of parliamentary debate, they can be employed particularly by men MPs to assert dominance, undermine, or silence women MPs (Vallejo Vera and Gómez Vidal 2022). As Och (2020) argues, such interruptions can be a form of resistance to women's substantive representation, reinforcing gendered power dynamics within parliament.

Following calls by Celis et al. (2008, 99) to rethink substantive representation along the lines of "where, how, and why" does it occur, this paper emphasizes the "who" and "how." Specifically, we examine who is interrupted, focusing on the gender and political party affiliation of the Members of Parliament (MPs) and how interruptions can operate as a gendered constraint on substantive representation in the Australian House of Representatives. Our paper asks: do women MPs get interrupted more than men MPs? Does political party affiliation shape which MPs get interrupted the most?

To answer these questions, we analyze a dataset of digitized Hansard transcripts from the 39th to 47th parliaments (November 1998 to March 2025) (Katz and Alexander 2025). Through quantitative analysis of parliamentary debates and Question Time (QT), we examine the frequency and nature of interruptions along gendered and party lines. Our findings reveal that women MPs are less likely to be interrupted than men MPs, when controlling for the number of speeches each MP gives in each parliament. We also found that when compared to the Australian Labor Party, MPs affiliated with the Liberal Party of Australia, The Nationals, and the Australian Greens were less likely to be interrupted. Our results highlight that parliamentary and temporal contexts shape the frequency of interruptions, with the 39th and 40th parliaments seeing more interruptions overall than recent parliaments (46th and 47th). These results suggest that increasing the descriptive representation of women is slowly beginning to change institutional norms and contexts.

This paper contributes to a small, but growing body of quantitative research analyzing the substantive representation of women in Australian politics (Vacaflores and Stephenson 2025; Dijk and Poljak 2025). By combining feminist institutional analysis with quantitative methods, we show how institutional constraints like interruptions undermine women's substantive representation.

This paper proceeds as follows. We begin by outlining our theoretical frameworks, including women's substantive representation, feminist institutionalism, and gendered parliamentary discourse. We then discuss our data and methodology, followed by analysis of our results. Finally, we conclude by summarizing our main findings, highlighting our contributions, and suggesting areas for future research.

Literature review

Substantive representation

Substantive representation can be conceived as how elected representatives' actions align with the needs and wishes of their constituents (Pitkin 1967). Women MPs are often considered to be best positioned to represent the interests and needs of women, by raising policy issues of importance to women and/or by bringing women's perspectives to policy issues often considered more masculine, such as the economy. Krook and O'Brien (2012) define and categorize the gendered nature of cabinet positions, suggesting that policy issues such as healthcare, social welfare, and gender equality are "women's issues," while more masculine-coded policy issues include the economy, defence, and foreign affairs. Neutral issues could include the environment, public works, and the civil service (Krook and O'Brien 2012). These categorizations are useful, but remain contested, especially as contemporary understandings of gender move beyond a binary framework. Vacaflores and Stephenson (2025) suggests a solution to this by viewing policy issues along a spectrum of "feminized" and "masculinized" issues. This approach allows for a more flexible understanding of what counts as "women's issues" and who can represent women. Men MPs can also undertake the substantive representation of women (Rayment and McCallion 2024) and issues not traditionally characterized as "women's issue" still hold gendered implications (Bird 2005). Nevertheless, issues such as gender-based violence, childcare, healthcare, social welfare, and education continue to be widely viewed as "women's issues" (Rayment 2024; Krook and O'Brien 2012).

Substantive representation in practice can take a number of forms in parliamentary contexts, including introducing legislation, engaging in debates, asking questions during QT, participating in committee meetings, or undertaking advocacy efforts (Rayment and McCallion 2024; Childs and Krook 2009). However, routine parliamentary rules and procedures, such as interruptions and adversarial behaviour, can be mobilized to either contribute to or undermine women's substantive representation (Vallejo Vera and Gómez Vidal 2022). Vacaflores and Stephenson (2025) finds that Private Members' Bills in the Australian House of Representatives, which are less constrained by party discipline, show that members' gender and individual backgrounds inform the types of issues addressed. Women MPs are more likely to speak to bills in parliament explicitly related to women's issues (Hargrave and Langengen 2021; Bäck and Debus 2019), or provide a gendered lens even if the legislation does not specifically address issues traditionally characterized as "women's issues" (Rayment 2024; Vacaflores and Stephenson 2025).

Who raises these issues, and how they are framed in parliamentary speeches, is shaped by political party affiliation, ideology, and party discipline (Och 2020; Tremblay 2003; Childs and Krook 2009). In Canada, Rayment (2024) illustrates that Conservative women MPs are more likely than Liberal and New Democratic Party (NDP) MPs to speak about "women's issues" between 1968 and 2015. However, Conservative MPs often focus on these issues through a traditional values lens, while Liberal and NDP MPs discuss these issues from a pro-gender equality perspective. This highlights that speaking and acting for women as part of substantive representation cannot be thought of in monolithic terms - party affiliation, ideology, and gender intersect, shaping how substantive representation occurs. In Australia, progressive parties such as the Australian Labor Party (ALP) and the Australian Greens more consistently support gender equity measures and address "women's issues," compared to right-leaning parties such as the Liberal Party of Australia (Vacaflores and Stephenson 2025). However, women MPs can work across party lines to advance "women's issues," as demonstrated by the successful effort to lift the ministerial veto on the importation of the abortion pill RU486 (Sawer 2012). These examples illustrate that while party affiliation and ideology can shape substantive representation, gender can, at times, exert stronger influence.

This engagement, however, does not take place in isolation, as broader institutional norms and rules shape how MPs speak and act on behalf of women's interests. One notable way these institutional norms manifest is through interruptions during parliamentary debates, which can either advance or hinder women MPs' ability to substantively represent women's interests. Interruptions do not only regulate who has access to speech and are "heard" more (Blumenau 2021; Kathlene 1994), but signal whose contributions are valued, highlighting how gendered power norms operate within parliamentary contexts (Broughton and Palmieri 1999).

Parliamentary culture and gender

Parliamentary culture and broader institutional norms play a critical role in shaping the conditions under which women MPs can speak and act on behalf of women's interests, institution often frame themselves as "neutral" (Collier and Raney 2018). This culture reflects and reproduces social hierarchies and power imbalances, rooted in gender, which intersect with race, sexuality, and class to shape political outcomes (Chappell and Waylen 2013). In Westminster parliaments, including the Australian House of Representatives, masculine norms and values traditionally shaped parliamentary culture, constraining marginalized voices (Mackay, Kenny, and Chappell 2010; Crawford and Pini 2011). Former Prime Minister Julia Gillard's 2012 sexism and misogyny speech drew global attention to these dynamics, highlighting how women MPs face a double bind as they "…negotiate the demand to demonstrate masculine leadership attributes without tarnishing the feminine qualities expected of them (Wright and Holland 2014, 455; Sawer 2013). Parliamentary behaviour and interactions reflect this culture, shaping legislative debates and reinforcing gendered hierarchies that further marginalize women MPs. Understanding these gendered dimensions of parliamentary culture is therefore important for understanding how interruptions constrain women's substantive representation.

Feminist institutionalism provides a valuable framework for analyzing gendered dynamics within parliamentary settings, emphasizing how formal rules such as the Standing Orders and parliamentary privilege interact with informal rules and cultural norms (Kenny 2014; Chappell and Waylen 2013; Mackay, Kenny, and Chappell 2010). Although formal parliamentary rules aim to guarantee equality, informal norms often shape behaviours in unequal ways. For example, while Standing Orders intend to give women and men MPs equal speaking time, men are more likely to interrupt women MPs during their allocated time. Dowding, Leslie, and Taflaga (2021) show in the Australian House of Representatives, speaking time depends on ministerial status, seniority, and gender, with women and less experienced MPs speaking less often despite the equal floor rules. As a result, women MPs may plan to give shorter speeches out of concern of being interrupted or abandon giving their speech entirely after being interrupted multiple times (Vallejo Vera and Gómez Vidal 2022).

Hames, Haugh, and Musgrave (2025) highlight that certain Standing Orders enshire unparliamentary language, while other language around discussions of social issues like racism rely on case-by-case rulings by the Speaker (Collier and Raney 2018). This ambiguity and lack of codified rules could further undermine women MPs attempting to speak on behalf of women and marginalized groups. As Ilie (2010) argues, parliamentary discourse operates as a strategic interaction, structured by turn-taking, interruptions, and framing that reflect broader power hierarchies. These communicative practices are not neutral; they often amplify dominant voices and reinforce authority while undermining opponents (Ilie 2013). Furthermore, mechanisms such as parliamentary privilege, which shield MPs from the legal accountability for their speech in the chamber, often enable incivility and harassment that disproportionately affect women MPs (Collier and Raney 2018; Sawer 2013).

Feminist institutionalism therefore directs attention toward the "hidden" ways in which gender continues to shape participation, authority, and legitimacy within political institutions (Chappell and Waylen 2013). At the same time, the growing descriptive representation of women can gradually reshape formal and informal norms, potentially altering discursive practices and reducing the frequency of gendered interruptions.

Interruptions and gender

Prior studies analyzing the gendered nature of interruptions in parliamentary debates and committee meetings globally show mixed results. Conceptually, interruptions operate as both interpersonal acts, shaped by relationships between members (Ilie 2010, 2013) and institutionalized practices embedded within parliamentary culture that function as strategic forms of political communication shaped by party affiliation and status (Diener 2025). This duality means that some interruptions are normalized and even institutionally sanctioned (Vallejo Vera and Gómez Vidal 2022), while others serve as deliberate attempts to undermine and silence women MPs attempting to speak and act on behalf of women's interests (Och 2020; Kathlene 1994). Interruptions, therefore, can extend beyond procedural tactics to constitute a form of violence against women in politics (VAWIP). Krook (2022) conceptualizes this as "semiotic

violence," where language, symbols, and other discursive disruptions such as interruptions undermine women MPs' authority and presence.

Within this broader conceptualization, empirical findings vary across parliaments. In the German Bundestag, Och (2020) found that women MPs were interrupted more than men MPs, but argues that these interruptions did not necessarily count as semiotic VAWIP because women MPs learned to use strategically use interruptions to further their own goals. Similarly, Stopfner (2018) employed qualitative case studies to understand whether gendered heckling stems from specific parliamentary contexts or reflects broader parliamentary culture. She concludes that both institutional norms and transnational parliamentary cultures contribute to the gendered interruptions that undermine women's process-oriented substantive representation (Rayment 2024).

In the Ecuadorian Congress, Vallejo Vera and Gómez Vidal (2022) found a more nuanced pattern, revealing that women Members of Congress were interrupted less frequently than men MPs, but interruptions silenced women at a higher rate. However, higher status and promotion to more prominent legislative roles could reverse some of the most negative effects of interruptions for women. In the Canadian House of Commons, Whyte (2017) found that gendered interruptions sharply increased during the 1990s, coinciding with increasing descriptive representation of women. In contrast, Ash, Krümmel, and Slapin (2025) found that women MPs in the German Bundestag receive more positive and fewer negative reactions to their speeches. Similarly, Dijk and Poljak (2025) reveal no gender difference in the frequency of interruptions in the United Kingdom, Australia, and Croatia, and that the overall number of interruptions declined when more women participate in debates. Notably, they find that in Australia, the number of interruptions declined as the number of women serving in parliament increased.

Research focused on committee meetings further illustrates the gendered nature of interruptions. In the Australian Senate Estimate hearings between 2006 and 2015, Richards (2016) finds that men senators used interruptions to block other speakers or assert control over the floor, with women senators and witnesses receiving the most negative interruptions. Likewise, in US state legislatures, Kathlene (1994) shows that as the number of women increases in committee hearings, men legislators responded with more interruptions and verbal aggression aimed at undermining women's substantive participation in the policymaking process. Additionally, Miller and Sutherland found that women senators faced twice as many interruptions from male colleagues when speaking about "women's issues," with men senators employing an aggressive form of interruptions called "rapid-fire 'interruption clusters' " to disrupt their speeches (2023, 103).

Taken together, these studies of both parliamentary debates and committee meetings emphasize that interruptions often function as a gendered constraint on women's participation. However, evidence across nations and institutional contexts is mixed. While some studies find that women are interrupted more frequently, other scholarship suggests that overall interruptions may decline as women's descriptive representation increases (Dijk and Poljak 2025). This variation highlights the importance of examining how institutional, contextual, and temporal

factors, such as party affiliation and parliamentary norms shape the frequency and nature of interruptions.

By focusing on interruptions in the Australian House of Representatives from 1998 to 2025, our paper contributes to this literature by combining feminist institutionalism with quantitative methods to examine how interruptions function as a gendered, but evolving constraint on women's substantive representation.

Data and methods

Dataset overview

To perform this analysis, we use a subset of the digitized Australian Hansard corpus produced by Katz and Alexander (2023). This dataset captures parliamentary proceedings in the House of Representatives. It was generated using the XML transcripts available on the Parliament of Australia website. The parsed XML transcripts were reshaped, cleaned, enhanced, and validated using a combination of manual and automated tests, as well as external datasets available in the `AustralianPoliticians` and `ausPH` R packages (Alexander and Hodgetts 2021; Leslie 2024).

Our dataset contains a total of 535,961 rows, where each row represents an individual statement, with details on who is speaking. For completeness, we analyze complete parliamentary periods. As a result, the earliest date is the first sitting day of parliament number 39 (10 November 1998), and the latest date is the final sitting day of parliament number 47 (27 March 2025). The cutoff dates used for each parliamentary period are available in the Appendix, in Table 9.

The use of data spanning multiple parliamentary periods allows us to explore patterns over time, which is of particular interest as the descriptive representation of women in the House of Representatives increased from 22 per cent in 1998 to 45 per cent in 2022 (Australian Bureau of Statistics 2025; International Foundation for Electoral Systems (IFES) 1998). This period also includes Julia Gillard's tenure as Australia's first woman prime minister (2010 to 2013).

Our dataset only includes Chamber proceedings (i.e. it does not contain either the Federation Chamber or the Senate). Choosing to exclude rows from the Federation Chamber is motivated largely by: 1) not every sitting day has Federation Chamber proceedings, 2) these proceedings are often significantly shorter than the Chamber proceedings, and 3) the topics discussed in the Federation Chamber are restricted (Elder and Fowler 2018). As such, interjection data are far more sparse in the Federation Chamber proceedings, making it less suitable for this project.

As an example, Table 1 contains all rows of speech number 109 from the Hansard proceedings on 27 March 2025, followed by a list defining each variable as outlined in Katz and Alexander (2023). By looking at the first individual who makes a statement in that speech (i.e., the name

name	order	speech_no	partyName	body	gender	interject
Mitchell, Rob	230	109	Australian Labor Party	It's been interesting to listen to the whingeing and the...	man	0
Conaghan, Pat	231	109	The Nationals	Mr Conaghan interjecting-	man	1
Claydon, Sharon (The DEPUTY SPEAKER)	232	109	Australian Labor Party	Okay, enough! Order! It is really disorderly to do that....	woman	0
Mitchell, Rob	233	109	Australian Labor Party	It's disgusting to think that those opposite said to the...	man	0
McCormack, Michael	234	109	The Nationals	No, it was me.	man	1
Mitchell, Rob	235	109	Australian Labor Party	It was you? Well, that explains it-to actually go there,...	man	0
The DEPUTY SPEAKER	236	109	NA	Member for McEwen, I didn't understand the reference, but you...	NA	0
Mitchell, Rob	237	109	Australian Labor Party	The minister who was caught rorting was Bridget McKenzie, the...	man	0
The DEPUTY SPEAKER	238	109	NA	Member for McEwen, you need to withdraw the allegation.	NA	0
Mitchell, Rob	239	109	Australian Labor Party	I withdraw. It's quite simple. Those opposite cut funding to...	man	0

Table 1: 10 rows of 27 March 2025 proceedings from the Hansard corpus published by Katz and Alexander (2025)

associated with the minimum order number), we can identify the person whose turn it is to speak, which in Table 1 is Rob Mitchell. Therefore, any statements made by members within that speech that are not attributed to Rob Mitchell (the member whose turn it is to speak), the Speaker, or the Deputy Speaker, are flagged as interjections in the `interject` column (Katz and Alexander 2023).

The variables in Table 1 are:

- `name`: Name of the individual speaking as parsed from the Hansard XML.
- `order`: Row number
- `speech_no`: Index of each speech made on the given sitting day, which includes all statements and interruptions
- `partyName`: Speaking member's party name
- `body`: Statement text
- `gender`: Gender of the speaker
- `interject`: Interjection flag

The value for gender was assigned only for rows with an individual MP's name in the `name` column. Rows with body text containing a business start or stage direction are attributed as such, and cannot be assigned a gender. Also, there are over 18,000 rows in the corpus attributed to one or multiple opposition members, government members, or honourable members, where no gender can be assigned. Other examples of statements which cannot be assigned a gender include those made by The Speaker, The Deputy Speaker, or The Acting Speaker. In all of these cases, the gender value is left as missing.

Interjections within parliamentary proceedings can take different forms (Wissik 2021; Vallejo Vera and Gómez Vidal 2022). They may be nonverbal in nature, such as laughter or applause, or they may be clearly spoken verbal interruptions. Further, interjections can be made by one

Parliament Number	Count
39	217
40	189
41	196
42	173
43	179
44	190
45	166
46	170
47	171

Table 2: Number of sitting days per parliament

specific individual, or they may be recorded more generally and attributed to a group such as government members. Interruptions may also be classified as either institutionalized or non-institutionalized. An example of an institutionalized interruption would be an announcement made by the elected Speaker, whereas a non-institutionalized interruption would be a comment made by an MP during someone else's speech. While some parliamentary transcripts for other countries such as Sweden explicitly differentiate between types of interjections within the transcript's encoding structure, this is not the case for the Australian Hansard XMLs (Wissik 2021). As such, all interjections were parsed and processed in the same way for the entire corpus. This means that verbal and non-verbal interjections are categorized the same way, as are interjections made by one person and those made by a group. However, the interjection flagging method used by Katz and Alexander (2023) described in the previous paragraph specifically re-codes interruptions made by the Speaker or the Deputy Speaker (i.e., institutionalized interjections) so that they are not flagged as interjections. As a result, this corpus focuses primarily on non-institutionalized interjections.

Summary statistics

In our dataset there are a total of 1,651 sitting days, with 391 unique speakers, 9 unique parties, and 170 unique electorates. A summary of the number of sitting days per parliament is provided in Table 2. On average, there are 183 sitting days per parliament.

The number of unique speakers per day ranges from 1 to 116, with a mean and standard deviation of about 76 and 13, respectively. The number of speakers per day disaggregated by gender is illustrated in Figure 1. Based on this plot it is clear that since 1998, the number of women speakers has overall been smaller than the number of men speakers. However, this gender gap appears to be narrowing over time, aligning with an increase in the descriptive representation of women MPs from 1998 to 2025.

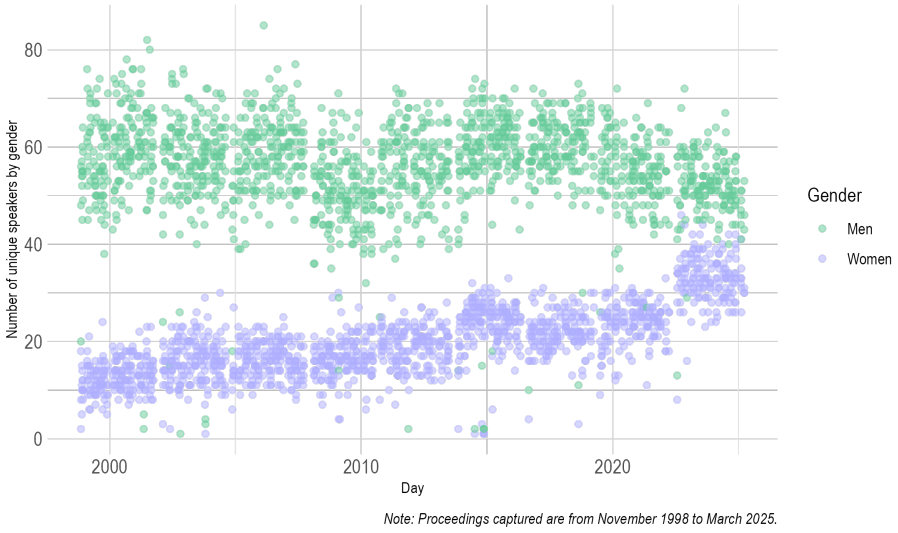

Figure 1: Number of unique speakers per day by gender

Gender	Count	Proportion
Women	13332	13.96%
Men	63891	66.89%
NA	18299	19.16%

Table 3: Count and proportion of interjections by gender. Note: statements that were not made by an individual MP such as 'Government members interjecting-' could not be assigned a value for gender, resulting in a value of NA.

Of the 535,961 rows in this dataset, 95,522 are flagged as interjections, which amounts to about 18 per cent of the total row count. The distribution of interjections by gender is summarized in Table 3. The proportion of interjections made by men speakers is 53 per cent higher than that of women speakers. Also, 19 per cent of flagged interjections are associated with speakers without a specified gender (NA), most frequently attributed to "Opposition members," "Honourable members," or "Government members."

Figure 2 illustrates the daily number of flagged interjections per speaker in parliament, with separate smoothed trend lines for men and women, accounting for differences in the number of men and women speakers present each day. Based on the smoothed trend lines, it appears that the daily rate of interjections for women MPs is generally lower than that of men MPs across sitting days. Despite an increase in the number of women MPs present over time as depicted in Figure 1, the daily rate of interjections being made by women MPs does not appear to have

increased as a result.

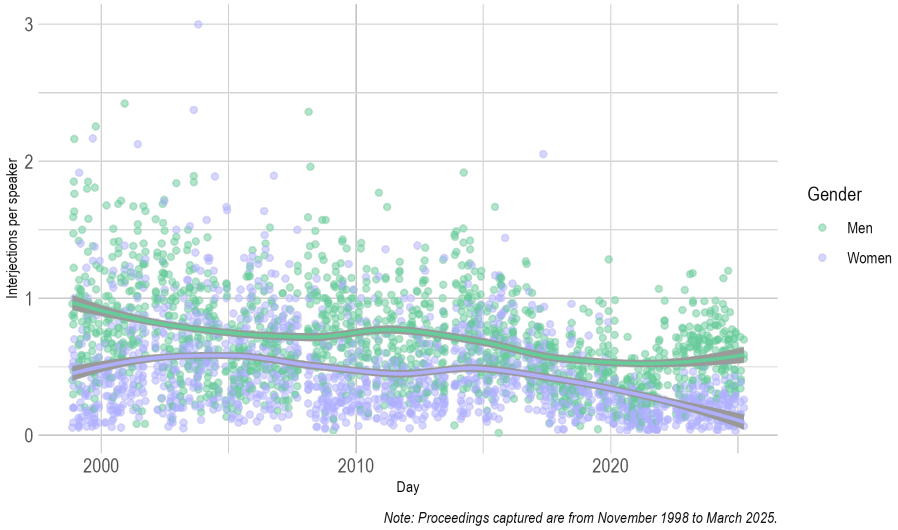

Figure 2: Daily rate of interjections by gender

Table 4 provides an overview of the interjections flagged by gender and political party. The values in the table capture the rate of interjections per MP for each gender and party. This rate is equal to the total number of interjections divided by the total number of unique MPs for the given gender and party. The percentages in parentheses represent the total share of interjections by gender in that party. For all five parties with both men and women MPs, the rate and share of interjections for men is notably higher than those of women.

Finally, Table 5 contains key metrics relating to the length of speeches in the corpus. The range of speech length is quite large, spanning from 1 word to 117,296 words. Examples of speeches with very small word counts are stage directions such as "Bill presented by Mr Tollner." (on 16 June 2003), or one-word answers to questions in writing such as "Yes" or "No." The average word count per speech across the entire corpus is about 639, with a standard deviation of about 1,080 words.

Analysis dataset

To prepare the data for our purposes, some reshaping and filtering was necessary. Firstly, rows with a missing `speech_no` value were removed, since this variable is essential for preparing the data for modeling. We identified that the only rows which had a missing `speech_no` were stage directions, business starts, and questions in writing. There were no interjections associated

Party Name	Women	Men
Australian Greens	7.33 (7.4%)	55 (92.6%)
Australian Labor Party	121.95 (21.3%)	307.8 (78.7%)
Centre Alliance	24 (100%)	0 (0%)
Independent	19.33 (24.4%)	71.8 (75.6%)
Katters Australian Party	0 (0%)	347 (100%)
Liberal Party of Australia	87.2 (12.5%)	179.18 (87.5%)
Nick Xenophon Team	11 (100%)	0 (0%)
Palmer United Party	0 (0%)	1 (100%)
The Nationals	41.25 (4.6%)	94.44 (95.4%)

Table 4: Rate of interjections per MP by gender and party, with share of total interjections in parentheses

Metric	Value
Average	639
Minimum	1
Maximum	117296
Standard Deviation	1080

Table 5: Average, standard deviation, minimum and maximum number of words per speech

name	order	speech_no	partyName	body	gender	interject
Emerson, Craig	155	74	Australian Labor Party	I thank my friend the member for Moreton not only...	man	0
Bishop, Bronwyn	156	74	Liberal Party of Australia	Speaker, I rise on a point of order. Under the...	woman	1
Government members	157	74	NA	Government members interjecting-	NA	1
The SPEAKER	158	74	NA	Order!	NA	0
Bishop, Bronwyn	159	74	Liberal Party of Australia	when an answer only had to be relevant, that sort...	woman	1
The SPEAKER	160	74	NA	The minister has the call and should avoid debate in...	NA	0
Emerson, Craig	161	74	Australian Labor Party	Speaker, I was asked about alternative approaches to the responsible...	man	0
Simpkins, Luke	162	74	Liberal Party of Australia	Just pour another $100 million in.	man	1
The SPEAKER	163	74	NA	The member for Cowan has been advised every day this...	NA	0
Emerson, Craig	164	74	Australian Labor Party	The dam heights, according to the coalition, should be high,...	man	0
Opposition members	165	74	NA	Opposition members interjecting-	NA	1
The SPEAKER	166	74	NA	Order! I am seeking quiet. The Manager of Opposition Business...	NA	0

Table 6: All rows of speech number 74 from 12 February 2014

with rows with a missing speech number, so filtering them out is unlikely to meaningfully affect the analysis. A new variable called `parliament_num` was then added to the corpus so that the correct parliament number associated with each sitting day was available, and could be used as a fixed effect in the model.

Next we performed some data cleaning with respect to the `party` variable. We identified one MP with an incorrect party affiliation - David Littleproud - which we manually corrected. We also identified that in the entire corpus there is only one MP belonging to the National Party of Australia (WA) (Tony Crook) and two belonging to the Country Liberal Party (Northern Territory) (Natasha Griggs and Dave Tollner). Since both of these parties are affiliated with the National Party, we chose to re-code the party affiliation of those three MPs to the Nationals.

Based on the model design, detailed in the next section, the input data must have one row for every MP per parliament, with their party affiliation, gender, number of interruptions received (outcome), and the number of speaking turns (offset). For the offset, we count each row within a given speech separately as a speaking turn. For example, in Table 6, it is Craig Emerson's turn to speak, and during this speech he was interrupted five times. After making his first statement, he was interrupted by both Bronwyn Bishop and Government members. Once the Speaker called "Order!" and he continued speaking, he was interrupted by Luke Simpkins. The Speaker spoke again, and then Craig Emerson spoke for the third time, after which he was interrupted by Opposition members, and finally the Speaker gave the floor to the Manager of Opposition Business to begin a new speech. Although this all happened within a single speech in which Craig Emerson had the floor, it contributes three units (i.e., speaking turns) to the offset because there were three separate instances in which Craig Emerson had a speaking turn and could be interrupted. This would also contribute five units (i.e., interjections) to the outcome count, because Craig Emerson was interrupted five times during this speech.

name	parliament_num	partyAbbrev	n_statements	n_times_interjected	gender
Abbott, Tony	39	LIB	500	411	male
Abbott, Tony	40	LIB	1258	655	male
Abbott, Tony	41	LIB	918	519	male
Abbott, Tony	42	LIB	354	78	male
Abbott, Tony	43	LIB	963	225	male
Abbott, Tony	44	LIB	2761	1771	male
Abbott, Tony	45	LIB	19	2	male
Adams, Dick	39	ALP	107	20	male
Adams, Dick	40	ALP	69	30	male
Adams, Dick	41	ALP	79	16	male
Adams, Dick	42	ALP	70	11	male
Adams, Dick	43	ALP	103	3	male
Albanese, Anthony	39	ALP	220	63	male
Albanese, Anthony	40	ALP	194	49	male
Albanese, Anthony	41	ALP	451	146	male

Table 7: First 15 rows of the model input dataset

To prepare the model input data, the number of speaking turns was first computed using the logic described above. For each speech in the corpus, the MP whose turn it was to speak was identified as the individual with the smallest order number. Only rows corresponding to that MP were retained for each speech, and the total number of statements per MP, parliament, and party affiliation were then counted. This produced a dataframe with each MP's name, parliament number, party affiliation, and number of speaking turns.

The number of interjections made towards each MP was calculated by first identifying the MP whose turn it was to speak for each speech, as previously described. Then, rows corresponding to statements made by other MPs that were flagged as interjections were retained. The remaining rows were then used to count the total number of interjections received per MP, parliament, and party. This data table was then merged with the table of speaking turns, and any MPs with no recorded interjections in the corpus were assigned a value of zero. Finally, we chose to filter out parties with only one MP, because model coefficients based on a single observation would be unstsable and ungeneralizable. This leaves five parties reflected in the dataset, all of which having at least 5 members.

It is possible for an MP to change political parties within a single parliamentary period. In those cases, there is a separate row in the input data for each party affiliation. For example, Julia Banks quit the Liberal Party of Australia and became an independent on 27 November 2018, during the forty-fifth parliament (Parliament of Australia 2025). As such, the number of speaking turns and interjections received were counted separately for each combination of party and parliament number. Finally, the gender of each MP was added to the input table using the `gender` variable in the corpus. The first 15 rows of the resulting dataset are shown below in Table 7.

Statistical model

Model overview

This project explores how a given MP's gender and political party affiliation impact the frequency of interruptions made toward them while it is their turn to speak. We use a Negative Binomial model to perform this analysis, where the outcome μ_i represents the expected count of interruptions made toward an individual MP (i) within a given parliament.

We chose this model because it is well suited for modeling count outcome variables, such as the number of interjections. While a Poisson model is also suitable for count outcomes, it assumes that all observations for a given set of predictors share one underlying rate, equal to both the mean and the variance, which does not hold in the data at hand. In this setting, the Poisson model assumes one rate of interruptions for all MPs with a given combination of values for parliament number, gender, and political party, and that any other variation observed is due solely to randomness. This assumption is not reasonable here because there are sources of variance that cannot be observed which influence the rate at which an MP is interrupted, such as speaking style or personality (Hargrave and Blumenau 2022; Ilie 2013). For example, an MP who is aggressive or harsh would likely get interrupted more frequently than one who is not aggressive (Blumenau 2021; Kathlene 1994). Since these sources of heterogeneity cannot be observed, the amount of variation present in the data will be higher than what would be expected under the Poisson model, and the assumption of an equal mean and variance will be violated. This situation is referred to as overdispersion.

One way to check for overdispersion is by comparing the residual deviance of a model to it's degrees of freedom. If the model and assumed variance structure are a good fit for the data, then these two values should be approximately equal (i.e., ratio of ≈ 1) (Roback and Legler 2021). To validate our choice to use a Negative Binomial model instead of a Poisson model, we compared the ratio of residual deviance and degrees of freedom in both models. Under the Poisson model, this value is ≈ 18.7, indicating major overdispersion. In contrast, under the Negative Binomial model, this value is ≈ 1.01, which is indicative of a better model fit. Over-dispersion is not an issue in the Negative Binomial case because the variance structure of the model accounts for it by including a dispersion parameter θ, which allows the variance to exceed the mean, thereby accounting for unobserved sources of variation. This leads to an improved model fit and more reliable estimates.

Following Rayment (2024), the model has parliament-fixed effects to capture contextual changes between parliaments, as well as an offset for the number of times it was an MP's turn to speak, to account for the fact that an MP who gives more speeches has more opportunities to be interrupted. This model design allows us to predict the number of interruptions that will be directed towards an MP with a certain set of characteristics in a single parliament period.

Model notation

The model is denoted as follows:

$$y_i \sim \text{Negative Binomial}(\mu_i, \theta)$$
$$\log(\mu_i) = \beta_0 + \beta_1 \text{Woman}_i + \sum_{k=1}^{8} \beta_k \text{Parliament}_{ki} + \sum_{j=1}^{4} \beta_j \text{Party}_{ji} + \log(S_i)$$

where

- μ_i is a count of the expected number of interruptions for MP i
- θ is the dispersion parameter
- Woman_i is a dummy variable equal to 1 if MP i is a woman, and 0 otherwise
- Parliament_{ki} is a dummy variable equal to 1 if MP i is part of parliament k, and 0 otherwise. There are 9 unique parliamentary periods in the analysis dataset, and the sum ranges from 1 to 8 because the 9^{th} acts as the reference category
- Party_{ji} is a categorical variable that reflects the party j that MP i is a member of in the specified parliament. There are 5 unique party affiliations in the analysis dataset, and the sum ranges from 1 to 4 because the 5^{th} acts as the reference category
- $\log(\text{S}_i)$ is the offset term for the number of speaking turns had by MP i

We performed this analysis using R Statistical Software, version 4.3.3 (R Core Team 2024). After preparing the model input data, the `glm.nb` function from the `MASS` package was used to fit a Negative Binomial regression model with a log link function, as defined in the previous section (Venables and Ripley 2002). The parliament number, party abbreviation, and gender variables were coded as factors to ensure they were correctly interpreted as categorical variables in the model.

Analysis and results

The results from our model, including coefficients, exponentiated coefficients (i.e., rate ratios), and p-values are summarized in Table 8. Table 10 in the Appendix provides the full party name associated with each abbreviation. This model output has a total of 14 coefficients: 1 intercept coefficient, 4 parliament number coefficients where the reference category is parliament number 47, 8 party coefficients where the reference category is ALP (Australian Labor Party), and 1 coefficient for the woman variable. Since the outcome of the Negative Binomial model is on the log scale, exponentiating the coefficient values yields rate ratios which are easier to interpret. For categorical variables, rate ratios capture the multiplicative effect of a variable on the expected count of interjections, relative to it's reference category. A rate ratio which is greater than 1 implies that the expected count of interjections is higher than the reference category, and a rate ratio less than 1 indicates that the expected count of interjections is lower

Term	Regression Coefficient	Rate Ratio	P-value
(Intercept)	-1.609	0.200	0.000
parliament_num39	0.398	1.488	0.000
parliament_num40	0.367	1.443	0.000
parliament_num41	0.230	1.258	0.003
parliament_num42	0.179	1.196	0.022
parliament_num43	-0.004	0.996	0.955
parliament_num44	0.135	1.144	0.082
parliament_num45	-0.044	0.957	0.567
parliament_num46	-0.397	0.672	0.000
partyGRN	-0.182	0.834	0.414
partyIND	-0.449	0.638	0.000
partyLIB	-0.068	0.934	0.086
partyNP	-0.005	0.995	0.942
genderWoman	-0.312	0.732	0.000

Table 8: Regression Results

than the reference category. This effect can also be expressed in terms of percentages. For instance, a rate ratio of 0.75 corresponds to a 25 per cent lower expected count compared to the reference category, while a rate ratio of 1.30 corresponds to a 30 per cent higher expected count compared to the reference category.

The `parliament_num` coefficients capture how the expected number of interjections in one parliament compares to that in the 47th parliament (the reference category), holding gender and party affiliation constant. Since the rate ratio for the 39th parliament is ≈ 1.5, this indicates that MPs in 39th parliament are expected to be interrupted 1.5 times (or 50 per cent) more than MPs in the 47th parliament. In contrast, this output tells us that an MP in the 46th parliament is expected to be interrupted about 32.8 per cent times less than an MP in the 47th parliament (Rate Ratio = 0.672). Interestingly, the rate ratios for earlier parliaments (i.e., 39 through 42) are all greater than 1, while the rate ratios for later parliaments (i.e., 45 and 46) are less than 1. This suggests temporal and contextual changes in the frequency of being interrupted (Kenny 2014), holding gender and party affiliation constant. The p-value column indicates that the coefficients for the 39th, 40th, 41st, 42nd, and 46th parliaments are statistically significant at the level of 0.05.

The estimated rate ratios for `party` are all less than 1, indicating that after controlling for gender and parliament, MPs from the GRN, IND, LIP or NP parties are expected to experience fewer interruptions than those in the reference group (ALP). In particular, members of the Australian Greens Party are predicted to be interrupted about 16.6 per cent less frequently than their ALP counterparts, while Independent MPs are expected to experience about 36 per cent fewer interruptions than an MP in the Australian Labor Party. In contrast, MPs

in the Liberal Party of Australia and the Nationals Party are expected to be interrupted less often than MPs in the Australian Labor Party, by approximately 6.6 percent and 5 per cent, respectively. Among these, only the coefficient for the Independent party is statistically significant ($p < 0.05$).

Finally, the `gender` rate ratio indicates that a woman MP is expected to be interrupted about 26.8 per cent less than a man MP holding party and parliament constant. The associated p-value (≈ 0) implies that this effect is highly significant.

Conclusion

This study employed quantitative analysis to examine how MPs' gender and political party affiliation shape the frequency of interruptions made toward them during their speaking turn in the Australian House of Representatives and to understand implications for women MPs' substantive representation. To do so, we utilize a dataset of digitized Hansard transcripts covering the 39th to 47th parliaments (November 1998 to March 2025). Our results point to three main findings. First, we found that women MPs were less likely to be interrupted than men MPs, when controlling for the number of speeches MPs give in each parliament. Next, we found that MPs affiliated with the Liberal Party of Australia, The Nationals, and the Australian Greens were less likely to be interrupted in comparison to the Australian Labor Party. Lastly, we confirm that parliamentary context, including party affiliation and discipline, and the numerical presence of women MPs shape the frequency of interruptions. Earlier parliaments in our dataset (39th and 40th) witnessed more interruptions overall than recent parliaments (46th and 47th) where the number of women elected to the House of Representatives rose from about 20 per cent to around 40 per cent. These results suggest that increasing the number of women elected to parliament impacts the overall workplace dynamics and culture, helping to overcome some of the formal and informal gendered rules and norms that historically shaped women MPs' experiences in Westminster parliaments (Sawer 2013; Mackay, Kenny, and Chappell 2010; Chappell and Waylen 2013).

There are several limitations and areas for future research. While the digitized Hansard transcripts provided detailed insight into parliamentary debates and QT, they do not fully capture all discourse and interactions between members. This is due to editorial decisions made by the Hansard reporters to not include select interruptions or heckles or the House voted to expunge certain language, debates, or interactions from the official record (Feldman 2023). Likewise, related discursive practices and aggressive behaviours can happen off camera in the Chamber or in the hallways around parliament, not being recorded by official records, but still undermining women MPs' substantive representation (Collier and Raney 2018; Crawford and Pini 2011).

Future studies could employ qualitative analysis alongside quantitative analysis to highlight contexts that are more likely to lead to interruptions and to better understand the nature of language MPs use when interjecting. Additionally, future studies could focus on evaluating the

types of issues raised in speeches to better understand how interruptions limit women MPs' abilities to speak and act on behalf of women's interests (Krook and O'Brien 2012; Rayment and McCallion 2024). Lastly, focusing on differentiating between types of interruptions and their impacts on parliamentary discourse and substantive representation could be a focus of future studies (Wissik 2021; Vallejo Vera and Gómez Vidal 2022).

By focusing on the Australian House of Representatives, we contribute to the substantive representation literature which typically focuses on North America and Europe (Vacaflores and Stephenson 2025). Our research confirms that gender shapes the nature and frequency of interruptions in the House of Representatives, demonstrating that electing more women can positively influence institutional norms and culture. This underscores the importance of continuing to advance gender equality in politics to ensure better policy outcomes for all citizens.

Acknowledgements

We thank Monica Alexander for helpful comments. This research was funded in part by the Data Sciences Institute at the University of Toronto and the Social Sciences and Humanities Research Council of Canada.

Appendix

Parliament Number	First Sitting Day	Last Sitting Day
39	10 November 1998	27 September 2001
40	12 February 2002	12 August 2004
41	16 November 2004	20 September 2007
42	12 February 2008	24 June 2010
43	28 September 2010	27 June 2013
44	12 November 2013	05 May 2016
45	30 August 2016	04 April 2019
46	02 July 2019	31 March 2022
47	26 July 2022	27 March 2025

Table 9: Earliest and latest sitting days in the corpus for each parliament

Party Abbreviation	Party Name
ALP	Australian Labor Party
GRN	Australian Greens
IND	Independent
LIB	Liberal Party of Australia
NP	The Nationals

Table 10: Abbreviations and full names of Australian political parties

References

Alexander, Rohan, and Paul A. Hodgetts. 2021. *AustralianPoliticians: Provides Datasets About Australian Politicians*. https://CRAN.R-project.org/package=AustralianPoliticians.

Ash, Elliott, Johann Krümmel, and Jonathan B Slapin. 2025. "Gender and Reactions to Speeches in German Parliamentary Debates." *American Journal of Political Science* 69 (3): 866–80. https://doi.org/10.1111/ajps.12867.

Australian Bureau of Statistics. 2025. *Representation in Parliament*. https://www.abs.gov.au/statistics/measuring-what-matters/measuring-what-matters-themes-and-indicators/cohesive/representation-parliament.

Bäck, Hanna, and Marc Debus. 2019. "When Do Women Speak? A Comparative Analysis of the Role of Gender in Legislative Debates." *Political Studies* 67 (3): 576–96. https://doi.org/10.1177/0032321718789358.

Bird, Karen. 2005. "Gendering Parliamentary Questions." *The British Journal of Politics and International Relations* 7 (3): 353–70. https://doi.org/10.1111/j.1467-856X.2005.00196.x.

Blumenau, Jack. 2021. "The Effects of Female Leadership on Women's Voice in Political Debate." *British Journal of Political Science* 51 (2): 750–71. https://doi.org/10.1017/s0007123419000334.

Broughton, Sharon, and Sonia Palmieri. 1999. "Gendered Contributions to Parliamentary Debates: The Case of Euthanasia." *Australian Journal of Political Science* 34 (1): 29–45. https://doi.org/10.1080/1554477X.2025.2507550.

Celis, Karen, Sarah Childs, Johanna Kantola, and Mona Lena Krook. 2008. "Rethinking Women's Substantive Representation." *Representation* 44 (2): 99–110. https://doi.org/10.1080/00344890802079573.

Chappell, Louise, and Georgina Waylen. 2013. "Gender and the Hidden Life of Institutions." *Public Administration* 91 (3): 599–615. https://doi.org/10.1111/j.1467-9299.2012.02104.x.

Childs, Sarah, and Mona Lena Krook. 2009. "Analysing Women's Substantive Representation: From Critical Mass to Critical Actors." *Government and Opposition* 44 (2): 125–45. https://doi.org/10.1111/j.1477-7053.2009.01279.x.

Collier, Cheryl N, and Tracey Raney. 2018. "Understanding Sexism and Sexual Harassment in Politics: A Comparison of Westminster Parliaments in Australia, the United Kingdom,

and Canada." *Social Politics: International Studies in Gender, State & Society* 25 (3): 432–55. https://doi.org/10.1093/sp/jxy024.

Crawford, Mary, and Barbara Pini. 2011. "The Australian Parliament: A Gendered Organisation." *Parliamentary Affairs* 64 (1): 82–105. https://doi.org/10.1093/pa/gsq047.

Diener, Julius. 2025. "Explaining Interruption Behavior in Parliament: The Role of Topic Expertise, Career Status, and Government-Opposition Dynamics." *Politische Vierteljahresschrift* 66 (2): 303–24. https://doi.org/10.1007/s11615-024-00585-4.

Dijk, Rozemarijn E van, and Željko Poljak. 2025. "Interrupting the Interruptions. How Women Transform the Parliamentary Debate." *Parliamentary Affairs*, 2025, gsaf040. https://doi.org/10.1093/pa/gsaf040.

Dowding, Keith, Patrick Leslie, and Marija Taflaga. 2021. "Australia: Speaker Time in an Adversarial System." In *The Politics of Legislative Debates*, edited by Hanna Bäck, Marc Debus, and Jorge Fernandes, 130–51. Oxford: Oxford University Press. https://doi.org/10.1093/oso/9780198849063.003.0008.

Elder, D. R., and P. E. Fowler, eds. 2018. *House of Representatives Practice*. Seventh Edition. Canberra: Department of the House of Representatives.

Feldman, Charlie. 2023. "You Can't Print that in Hansard: Surveying Hansard Expungements in Canada, Australia and New Zealand." *Australasian Parliamentary Review* 38 (2): 97–117. https://search.informit.org/doi/pdf/10.3316/informit.460073972553658.

Hames, Sam, Michael Haugh, and Simon Musgrave. 2025. "'How is that Unparliamentary?': The Metapragmatics of 'Unparliamentary' Language in the Australian Federal Parliament." *Lingua* 320: 1–24. https://doi.org/10.1016/j.lingua.2025.103932.

Hargrave, Lotte, and Jack Blumenau. 2022. "No Longer Conforming to Stereotypes? Gender, Political Style and Parliamentary Debate in the UK." *British Journal of Political Science* 52 (4): 1584–601. https://doi.org/10.1017/S0007123421000648.

Hargrave, Lotte, and Tone Langengen. 2021. "The Gendered Debate: Do Men and Women Communicate Differently in the House of Commons?" *Politics & Gender* 17 (4): 580–606. https://doi.org/10.1017/S1743923X20000100.

Ilie, Cornelia. 2010. "Strategic Uses of Parliamentary Forms of Address: The Case of the UK Parliament and the Swedish Riksdag." *Journal of Pragmatics* 42 (4): 885–911. https://doi.org/10.1016/j.pragma.2009.08.017.

———. 2013. "Gendering Confrontational Rhetoric: Discursive Disorder in the British and

Swedish Parliaments." *Democratization* 20 (3): 501–21. https://doi.org/10.1080/13510347.2013.786547.

International Foundation for Electoral Systems (IFES). 1998. *Australian House of Representatives 1998 General Election Statistics*. https://www.electionguide.org/elections/id/230/.

Kathlene, Lyn. 1994. "Power and Influence in State Legislative Policymaking: The Interaction of Gender and Position in Committee Hearing Debates." *American Political Science Review* 88 (3): 560–76.

Katz, Lindsay, and Rohan Alexander. 2023. "Digitization of the Australian Parliamentary Debates, 1998–2022." *Scientific Data* 10 (1): 567. https://doi.org/10.1038/s41597-023-02464-w.

———. 2025. "A New, Comprehensive Database of all Proceedings of the Australian Parliamentary Debates (1998-2025)." Zenodo. https://doi.org/10.5281/zenodo.7336075.

Kenny, Meryl. 2014. "A Feminist Institutionalist Approach." *Politics & Gender* 10 (4): 679–84. https://doi.org/10.1017/S1743923X14000488.

Kollock, Peter, Philip Blumstein, and Pepper Schwartz. 1985. "Sex and Power in Interaction: Conversational Privileges and Duties." *American Sociological Review*, 1985, 34–46.

Krook, Mona Lena. 2022. "Semiotic Violence Against Women: Theorizing Harms Against Female Politicians." *Signs: Journal of Women in Culture and Society* 47 (2): 371–97. https://doi.org/10.1086/716642.

Krook, Mona Lena, and Diana Z O'Brien. 2012. "All the President's Men? The Appointment of Female Cabinet Ministers Worldwide." *The Journal of Politics* 74 (3): 840–55. https://doi.org/10.1017/S0022381612000382.

Leslie, Pat. 2024. *ausPH: An R Package to Retrieve Data from the Parliamentary Handbook of the Commonwealth of Australia.* https://github.com/palesl/ausPH.

Mackay, Fiona, Meryl Kenny, and Louise Chappell. 2010. "New Institutionalism Through a Gender Lens: Towards a Feminist Institutionalism?" *International Political Science Review* 31 (5): 573–88. https://doi.org/10.1177/0192512110388788.

Miller, Michael G, and Joseph L Sutherland. 2023. "The Effect of Gender on Interruptions at Congressional Hearings." *American Political Science Review* 117 (1): 103–21. https://doi.org/10.1017/S0003055422000260.

Och, Malliga. 2020. "Manterrupting in the German Bundestag: Gendered Opposition to

Female Members of Parliament?" *Politics & Gender* 16 (2): 388–408. https://doi.org/10.1017/S1743923X19000126.

Parliament of Australia. 2025. *The Parliamentary Handbook of the Commonwealth of Australia*. 2025. https://handbook.aph.gov.au/.

Pitkin, Hanna Fenichel. 1967. *The Concept of Representation*. Berkeley, California: University of California Press.

R Core Team. 2024. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Rayment, Erica. 2024. *What Women Represent: The Impact of Women in Parliament*. Montreal: McGill-Queen's University Press.

Rayment, Erica, and Elizabeth McCallion. 2024. "Contexts and Constraints: The Substantive Representation of Women in the Canadian House of Commons and Senate." *Representation* 60 (1): 117–33. https://doi.org/10.1080/00344893.2023.2173283.

Richards, Joanna. 2016. "Let Her Finish: Gender and Deliberative Participation in Australian Senate Estimates Hearings." In *BPhil Thesis, University of Canberra*.

Roback, Paul, and Julie Legler. 2021. *Beyond Multiple Linear Regression: Applied Generalized Linear Models and Multilevel Models in R*. Chapman; Hall/CRC.

Sawer, Marian. 2012. "What Makes the Substantive Representation of Women Possible in a Westminster Parliament? The Story of RU486 in Australia." *International Political Science Review* 33 (3): 320–35. https://doi.org/10.1177/0192512111435369.

———. 2013. "Misogyny and Misrepresentation: Women in Australian Parliaments." *Political Science* 65 (1): 105–17. https://doi.org/10.1177/0032318713488316.

Stopfner, Maria. 2018. "Put your 'Big Girl' Voice on: Parliamentary Heckling Against Female MPs." *Journal of Language and Politics* 17 (5): 617–35. https://doi.org/10.1075/jlp.18014.sto.

Tremblay, Manon. 2003. "Women's Representational Role in Australia and Canada: The Impact of Political Context." *Australian Journal of Political Science* 38 (2): 215–38. https://doi.org/10.1080/1036114032000092693.

Vacaflores, Isabella, and Elise Stephenson. 2025. "Understanding Female Legislators' Substantive Representation in the Australian Parliament." *Journal of Women, Politics & Policy*, 2025, 1–21. https://doi.org/10.1080/1554477X.2025.2507550.

Vallejo Vera, Sebastián, and Analía Gómez Vidal. 2022. "The Politics of Interruptions: Gendered Disruptions of Legislative Speeches." *The Journal of Politics* 84 (3): 1384–402. https://doi.org/10.1086/717083.

Venables, W. N., and B. D. Ripley. 2002. *Modern Applied Statistics with S*. Fourth. New York: Springer. https://www.stats.ox.ac.uk/pub/MASS4/.

Whyte, Tanya. 2017. "Oh, Oh! Modeling Parliamentary Interruptions in Canada, 1926–2015." Canadian Political Science Association Annual Conference. https://cpsa-acsp.ca/documents/conference/2017/Whyte.pdf.

Wissik, Tanja. 2021. "Encoding Interruptions in Parliamentary Data: From Applause to Interjections and Laughter." *Journal of the Text Encoding Initiative*, no. 14. https://doi.org/10.4000/jtei.4214.

Wright, Katharine AM, and Jack Holland. 2014. "Leadership and the Media: Gendered Framings of Julia Gillard's 'Sexism and Misogyny' Speech." *Australian Journal of Political Science* 49 (3): 455–68. https://doi.org/10.1080/10361146.2014.929089.