Autocratic Liberalization and Gendered Speech: Evidence from the Parliament of Singapore

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Autocratic Liberalization and Gendered Speech: Evidence from the Parliament of Singapore

A thesis submitted in partial fulfillment of the requirement for the degree of Bachelor of Arts in International Relations from The College of William and Mary

by

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Abstract

Gender differences in political behavior are well documented in democracies, but poorly understood in the context of liberalizing autocracies. In Singapore, the ruling party experienced both an internal and external reform over the course of five years. This paper uses natural language processing to analyze the impact of these two changes on parliamentary debates delivered by elected male and female politicians from the ruling party. The internal reform, a non-binding party gender quota, activates identities that differ within the party, namely gender identity. In contrast, the external reform, the opposition’s electoral victory, activates a unifying identity of party affiliation. Structural topic model evidence shows that the two types of shocks have different impacts on the use of gendered rhetoric and prevalence of gendered topics in political speech. Most importantly, men have much stronger responses to both shocks than women, due to differences in experience and risk aversion. This paper advances the literature on gender and authoritarianism and provides policy-relevant information on the impact of liberalizing reforms.

Keywords: Autocratic liberalization, gender, political speech, Singapore
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1 Introduction

How do liberalizations in autocracies change the way male and female politicians speak? Previous studies of political speech have found that men and women often discuss different subjects—women are more likely to talk about women’s issues, such as women’s rights and education, and men are more likely to talk about masculine-coded issues, like defense and foreign policy. When autocracies liberalize, these baseline differences in political speech can shift as politicians interpret their changing political environment. Internal reforms initiated by the incumbent party send a different message to politicians than external reforms that are imposed by outside forces, such as opposition movements.

Singapore offers the chance to examine how liberalization impacts political speech because between during a five-year period, the ruling party experienced both an internal and an external reform shock. Structural topic modeling, a natural language processing method that pulls themes out of large bodies of text, shows that these policies affected male and female politicians differently. Applying structural topic models to the record of parliamentary debates before and after the policy changes addresses the question of how reforms in autocracies change the way that male and female politicians speak.

This paper addresses gaps in the literature on gender in autocracies. Most studies of gender and politics focus heavily on gendered policy outcomes in democracies, such as men and women voting differently on budgets or war. Autocracies and hybrid regimes make up a large share of the world’s states and deserve greater attention.\(^1\) However, these states should not be studied in the

\(^1\) According to the Economist Intelligence Unit’s Democracy Index, only 22 countries were considered full democracies in 2019. That leaves 145 states classified as flawed democracies, hybrid regimes, or authoritarian regimes. “Global Democracy Has Another Bad Year,” The Economist Newspaper Limited, January 22, 2020, https://www.economist.com/graphic-detail/2020/01/22/global-democracy-has-another-bad-year
same way as democracies. After the Cold War, states around the world were under duress to adopt hallmarks of democracy. As a result, many states have taken up elections and representation quotas without a corresponding increase in the quality of democracy. In authoritarian regimes, pressure to achieve party priorities and project unity limit variation in how ruling party politicians vote on issues such as budgets or war. Political speech, on the other hand, has far more variation and expresses greater nuance. Using parliamentary debates, this paper addresses the issue that in non-democracies, policy outcomes are less representative of politicians’ views than measures like political speech.

In addition to addressing an understudied type of regime and underutilized outcome variable, this paper has implications for policies that promote democracy and gender equality in hybrid and autocratic regimes. International gender equality movements dedicate massive amounts of time, money, and effort to secure women’s rights. Many of the results that these organizations are hoping for are democratic in nature—UN Women, for instance, works to elect more women by sponsoring programs that train women as political candidates and encouraging states to adopt gender quotas. 2 If these policies have no impact on politics or worsen gender divides, organizations’ hard work has the opposite of the desired effect. Studying how reforms impact gendered political speech will improve the scholarly community’s understanding of non-democratic politics, as well as the true impact of campaigns to increase gender equality and democracy.

In fact, analysis of Singaporean parliamentary debates reveals that reforms have a much stronger impact on men’s speech than women’s. After the internal change, men and women spoke in ways that more stereotypically suited their gender. However, men also increased their use of

feminine-coded rhetoric on issues like welfare, in a possible bid to appeal to appeal to progressive voters. The external reform had essentially no effect on women’s speech, but men decreased their discussion of ‘women’s issues’ and increased their discussion of men’s issues. In the case of both reforms, men were changed their speech patterns much more than women, indicating that autocratic liberalization may have a greater impact on male politicians.

The next section of the paper is an overview of the literature on causes and examples of gender differences among politicians. After a discussion of mechanisms for autocratic liberalization and overview of the Singaporean context and policy changes, the theorized impacts of the internal and external reform are presented. The third part of the paper documents the methodology and describes the textual data and steps for pre-processing and analysis. After a summary of the results, the discussion portion of the paper interprets the structural topic model outputs and evaluates their implications. Finally, the paper concludes with a comparison of the internal and external reforms and suggestions for future work on this subject.

2 Literature Review

2.1 Explaining gender differences in politics

People’s perspectives and opportunities are influenced by gender. Politicians are no exception. There are several reasons to expect divergent behavior from male and female politicians. Differences in lived experience, the need to conform to one’s social group, and pressure to meet societal expectations can all lead men and women to make different decisions as politicians.

have disparate daily experiences, leading to different priorities and understandings of the world. Because female politicians share some experiences with other women that male politicians will never have, women are uniquely well-qualified to advocate for other women. In other words, politician’s decisions will inevitably be impacted by their biographies. Phillips’ argument implies that descriptive representation, or the extent to which legislators resemble their constituents, goes hand-in-hand with substantive representation, or the extent to politicians act on behalf of their constituents to present policy concerns. This presumed link underlies many policies, such as quotas, that bring minorities into government in the hopes that these groups will then be better represented.

Second, politicians may also have varied behavior because they are aware of their membership in different social groups, as a woman or as a man. A person’s identity is “the individual’s knowledge that he/she belongs to certain social groups together with some emotional and value significance to him/her of group membership.” Therefore, awareness of belonging to social groups, and value to group membership, is the foundation to identity. Tajfel’s social identity theory states that identities are strengthened by noting the differences between one’s own group and others. An individual often belongs to many social groups, because independent, non-exclusive biographical factors like gender, religion, or nationality are all bases for group membership. Based on context and cues, each of these identities can be more or less salient at any

5 Tiffany D. Barnes and Stephanie M. Burchard, ““Engendering” politics: The impact of descriptive representation on women’s political engagement in Sub-Saharan Africa,” Comparative Political Studies 46, no. 7 (2013): 767-790.
7 For a nice overview of social identity theory, see Abrams and Hogg, “An introduction to the social identity approach.”
given time, which significantly affects behavior.\textsuperscript{8} When an identity is salient, self-conceptualization as a group member leads people to modify their behavior and preferences so the group ultimately has coordinated, uniform behavior.\textsuperscript{9} In cases where politicians are frequently reminded of gender differences, differences in behavior and policy preferences may also emerge. Many social science experiments have examined how identity affects behaviors and preferences.\textsuperscript{10}

Phillips argues the different circumstances faced by men and women enable women to better represent fellow women; however, the third source of gender differences among politicians is differing societal expectations. The ‘ambition gap’ and ‘confidence gap’ between men and women partially explain why women are underrepresented in government.\textsuperscript{11} The societal pressures that underlie the ambition and confidence gaps also affect what women can achieve, or are encouraged to focus on, when they enter office. When women are elected to office, fixed ideas of femininity impact what women are expected to do, which often includes addressing so-called ‘women’s issues’. Stereotypes of feminine compassion and family loyalty underpin definitions of


\textsuperscript{9} Abrams and Hogg emphasize that uniformity of behavior derives from the individual’s self-identification with the group (and thus the salience of the group identity), not interpersonal relationships or explicit social pressure.


\textsuperscript{11} Fox and Lawless examined the ‘ambition gap’ that leads women to be “less likely than similarly situated men to consider running for office; less likely to run for office; less like to believe they are qualified to seek office; [and] less likely to receive encouragement to run for office.” They attribute women’s lower interest in running for office to disadvantages in terms of parental encouragement, politicized educational and peer experiences, participation in competitive activities, and a sense of self-confidence. For more, see: Richard L. Fox and Jennifer L. Lawless, "Uncovering the origins of the gender gap in political ambition," \textit{American Political Science Review} 108, no. 3 (2014): 499-519. Self-confidence is further undermined by stereotypes of women as less competent in certain fields, such as math or leadership. For more on the competence-confidence gap, see: Heather Sarsons and Guo Xu, "Confidence men? Gender and confidence: Evidence among top economists," \textit{Harvard University, Department of Economics, Littauer Center} (2015): 1-26. For a more anecdotal analysis, see also: Katty Kay and Claire Shipman, "The confidence gap," \textit{The Atlantic} 14, no. 1 (2014): 1-18.
women’s issues. Women’s issues are traditionally considered to include health care, education, women’s rights, the environment, and social welfare. In contrast, ‘masculine issues’ play on preconceived notions of men as financial breadwinners and protectors and typically include defense, crime, the economy, and foreign policy. Because these portfolios are more powerful and prestigious, men jostle for positions in those ministries and committees, sidelining women on social issue committees. Even when there are gender quotas in place, there is evidence that male incumbents “respond strategically in order to reduce the impact of gender quotas on leadership outcomes.”

These three theories regarding differences in lived experiences, social group identification, and societal expectations seek to explain why male and female politicians differ in their behavior and politics. Gendered political differences are well-documented and often occur along the lines of the gender stereotypes explained above.

### 2.2 Measuring the impact of gender on politics

Studies of gender and politics often focus on democracies, where scholars have found persistent differences in the behavior of men and women in office. Researchers have found that the presence of women in the legislature lowers conflict behavior and defense spending. Women’s representation in government also affects domestic policy. Quota shocks that mandate female

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14 Rohini Pande and Deanna Ford, "Gender quotas and female leadership," (2012).
representation lead to increased social spending. When there are more women in government, there are lower levels of corruption and more attention is paid to women's issues.

Furthermore, researchers suggest that gender affects how politicians prioritize and discuss issues. Although most studies focus on policy outcomes, some focus on political speech and further support the existence of gender differences. Women are more likely to discuss stereotypically ‘feminine’ issues. In the United States, African-American female legislators were more likely to advocate for women’s interests. When there are more women in Germany’s legislature, they are more likely to speak in favor of women’s issues. These differences in political speech are partially because legislators are also subject to gendered portfolio assignments. The aforementioned masculine issues are considered more important and prestigious than women’s issues, and are thus much more likely to be assigned to male ministers.

The impact of gender on politics in non-democracies is less intensively studied, but women also seem to advocate for different things than men. Gender impacts the likelihood of voting for women's issue bills, as well as how often legislators talk in debates about issues that disproportionately affect women. Characteristics of autocracies and flawed democracies also

19 Xydias, "Inviting more women to the party.”
exacerbate gender differences among politicians. For instance, in African countries with strong patronage networks, incumbents frequently distribute ministerial positions to people who represent strategic ethnic constituencies. Women generally lack the social status and personal resources needed to become ethnic patrons, so they are excluded from executive appointments and ministerial positions.  

2.3 Representation in liberalizing autocracies

Much of the gender and politics literature focuses on democracies, but there is a wide array of non-democratic regimes. In addition to autocracies, there are many states that have democratic traits, but are not democracies. Levitsky and Way popularized ‘competitive authoritarianism,’ in which “formal democratic institutions are widely viewed as the principal means of obtaining and exercising political authority” and there is at least some uncertainty as to the outcome of elections. Another hybrid regime type is hegemonic authoritarianism. In hegemonic authoritarianism, which describes the situation of dominant party regimes such as Singapore, multiparty elections are “little more than window dressing” as the outcome of elections is certain. This paper specifically


Leonardo R. Arriola and Martha C. Johnson, "Ethnic politics and women's empowerment in Africa: Ministerial appointments to executive cabinets," American Journal of Political Science 58, no. 2 (2014): 495-510. An interesting counterpoint is Rwanda, which is famous for having the world’s largest share of legislative seats held by women. Rwanda is hardly representative of most autocracies, however. Women were able to lead civil society partially because of fatalities and instability from the genocide. As President Kagame consolidated power, many female civil society leaders were co-opted by the regime into government positions where they could continue pro-women advocacy, but not pro-democracy activism. Furthermore, many of the gains in women’s rights in Rwanda flow from Kagame. Thus, women are not themselves particularly powerful, but rather, the autocratic leader is powerful and he chooses to use his power to advance some pro-women causes while simultaneously reinforcing ruling party dominance by co-opting women. See: Jennie E. Burnet, "Gender balance and the meanings of women in governance in post-genocide Rwanda," African Affairs 107, no. 428 (2008): 361-386. See also: Jennie E. Burnet, "Women have found respect: Gender quotas, symbolic representation, and female empowerment in Rwanda," Politics & Gender 7, no. 3 (2011): 303-334.

For more on hegemonic authoritarianism, see Beatriz Magaloni, "The game of electoral fraud and the ousting of authoritarian rule," American journal of political science 54, no. 3 (2010): 751-765. Electoral authoritarianism is quite similar, and describes regimes in which electoral institutions exist but yield no meaningful contestation for
addresses these authoritarian states, which have not fully democratized, but have engaged in smaller changes that increase representativeness in government by including gender or ideological minorities. The impact of gender on politics in these sorts of states is understudied.

Liberalization can happen when stable autocracies ‘concede to thrive.’ Slater and Wong explain that authoritarian states can concede to greater democratization—or other liberalizing policies—because the rulers simply want to stay in power. Remaining authoritarian is not the primary goal. Conceding to thrive exploits the fact that democratization requires ruling parties to hold free and fair elections, but not that there be any transition of power. Concessions can take the form of quotas or liberalizing touches that, intentionally or not, better incorporate the opposition into the government. Whether new voices are voted into office or brought in via quotas, either scenario presents challenges for minority candidates. Women around the world face negative stereotypes that worsen their electoral chances, regardless of regime type or party affiliation. In regimes with a strong single party or managed elections, the opposition is unlikely to overcome the dominant party’s advantages and enter the government on their own terms.

power, as a democratic facade covers authoritarian rule. For more on electoral authoritarianism, see: Juan José Linz, Totalitarian and authoritarian regimes, Lynne Rienner Publishers, 2000.

24 Of course, violent revolution, mass protest, and succession crises can all change autocracies as well.


26 Quotas can liberalize an autocratic system by improving the quality of representation in the government. A quota does not necessarily impact the type of candidate running for office, who may be liberal or conservative. In fact, in an electoral authoritarian state with a national gender quota (rather than a party-level quota), parties have two competing interests: first, to put women who will advocate for women’s rights in the reserved seats and second, to put people who are loyal to the party in the reserved seats. Because of limited resources, opposition parties struggle to reconcile these goals and award seats based on patronage, undercutting commitment to women’s rights. Powerful ruling parties have the organizational strength to recruiting women’s advocates through the party’s women’s wing, as well as the resources to keep everyone loyal to the party. See Elin Bjarnegård and Pär Zetterberg, "Gender equality reforms on an uneven playing field: Candidate selection and quota implementation in electoral authoritarian Tanzania," Government and Opposition 51, no. 3 (2016): 464-486.

Quotas are a double-edged sword. Gender quotas signal that the party is interested in attracting the support of a more progressive set of voters who want inclusion and diversity in politics. They can also reinforce gender essentialist ideas. Mansbridge, who acknowledges the potential power of quotas to correct imbalances, nonetheless cautions that they “inevitably increase essentialist beliefs,” or “the conviction that the individuals represented through quotas have some essential traits that help define them and that render them unable to be represented adequately by those without such traits.” Mansbridge, as well as other gender politics scholars like Franceschet and Piscopo, argue that essentialist beliefs reinforce stereotypes, bind individuals to a specific interpretation of their identity, and limit politicians’ mandates to only those of their social group. Backlash or resistance to quotas are also potential problems. In this paper, I focus on both voting people into office and imposing non-binding, party-level gender quotas.

When autocracies liberalize, identities such as gender can be more salient and have a greater impact on political choices. Liberalization increases gender salience in two key ways. First, democratization movements increase popular representation, allowing more women to participate in politics in general and enter the upper echelons of politics. When elite politics go from entirely male to a mix of male and female, awareness of gender should increase. To win elections, parties will also appeal to women’s movements for votes and support, thereby gendering politics. Second, when autocracies are in the process of reforming (or if ruling parties are conceding to thrive), women’s rights are considered a much less risky concession than other liberalizations such as freedom of the press or free and fair elections. Women’s movements also can facilitate the

28 Jane Mansbridge, "Quota problems: Combating the dangers of essentialism," *Politics & Gender* 1, no. 4 (2005): 622-23. Franceschet and Piscopo caution against other negative effects of quotas, including “quotas generate mandates for female legislators to represent women’s interests, while also reinforcing negative stereotypes about women’s capacities as politicians.” Susan Franceschet and Jennifer M. Piscopo, "Gender quotas and women’s substantive representation: Lessons from Argentina," *Politics & Gender* 4, no. 3 (2008): 393-425.

29 For the same reasons that women’s movements are seen as less threatening to autocrats, they can also be more easily co-opted than opposition or explicitly pro-democratization movements. As I mentioned in a previous footnote,
process of democratization. Gender salience therefore increases during both the process and aftermath of liberalization in autocracies.

Even when gender or party is a salient identity in a dominant party regime, however, individual elected representatives usually have limited power. Members of the opposition, of either gender, are unlikely to influence budgets or bills. Individuals in the ruling party may have leadership roles, but will vote according to party priorities that they do not control. To understand the options and choices of politicians in such regimes, it is sensible to look at political speech, rather than other indicators that are reasonable in democracies, such as budgetary votes.

2.4 The Singaporean context

Singapore is known for its wealth and stability. The tiny city-state has famously low levels of corruption, paired with an open economy and pro-business regulations. Singapore is ethnically diverse, and although race relations are sometimes troubled, the state has tried to address this issue...
through ethnic quotas and a heavy focus on meritocracy. Heavy censorship and a strong autocratic government, led by the People's Action Party (PAP), however, are perhaps most responsible for stability and continuity in Singapore. Since the first Parliament in 1963, the PAP have held a super-majority. Political speech is an especially important indicator of political preferences and behavior in the Singaporean context because PAP members vote very uniformly on bills and amendments, thanks to the efforts of the party whips.

Historically, the PAP has insisted that only their party can ensure the continued prosperity of Singapore, because of its emphasis on meritocracy and free enterprise. The continuity provided by a strongly institutionalized ruling party seems to appeal to Singaporean voters. Strict morality laws, such as the infamously harsh laws against drugs abuse and penalties on drug usage, further strengthen the impression that Singapore is a country that prizes order. In summary, the party’s accomplishments are providing a strong economy, social order, and security. During elections, PAP candidates appeal to these achievements. Therefore, the PAP has traditionally drawn its legitimacy from a masculine ideology of governance. I define a masculine ideology of governance as one that uses masculine rhetoric of providing and protecting, as well as one that centers around masculine-coded topics, like foreign policy, order, security, and the economy. In contrast, a feminine ideology of governance is uses feminine rhetoric of nurturing and caring, and is based on feminine-coded topics that relate to welfare and social issues, like health, education, family, and community care.

In a surprising turn of events, the opposition won its most seats to date in the 2011 general election, leading many scholars to relabel Singapore as a competitive authoritarian state. Singapore is an anomaly among authoritarian (or competitive authoritarian) states, given its low corruption levels, meritocratic government, and enduring ruling-party power.

2.4.1 Internal reform: Gender shock

Singapore is a conservative society with gender norms like those in the West. In the past, the Singaporean government has used regressive policies to keep women out of professional life and focused on motherhood. Historically, women have been absent from Singaporean politics. The few women who were present emphasized their femininity, passivity, and ties to their male relatives in the political sphere.

In the early summer of 2009, the PAP introduced an informal target for female representation. At a celebration of the women’s wing of the PAP, the group’s chief announced that the goal was for women to hold around 30 percent of the elected seats. Tan argues that the
sudden, voluntary adoption of a party quota for women was an attempt to broaden the PAP’s appeal. Falling vote shares, driven by public dissatisfaction with inequality, necessitated an image makeover to appeal to younger voters. Adopting an issue of women’s rights, such as female political representation, would make the party seem more progressive and inclusive.43

Although different from a formal and binding quota, for ease of reference, I will refer to this aspirational target as a pseudo-quota for the rest of the paper. There was no signal that the PAP was going to make this change, nor was there external pressure from the public or international community for the PAP to adopt this policy, as evidenced by the minimal-to-non-existent press coverage of the pseudo-quota leading up to its implementation.44 Therefore, this policy should be considered an unexpected 'shock' to the system, increasing the validity of causal inference from comparisons of speech before and after the policy went into effect.

2.4.2 External reform: Electoral shock

Before 2011, Singapore lacked meaningful political contestation. Since independence in the 1960s, Singapore has been ruled by the PAP, a powerful and mature institution that regularly wins supermajorities in Parliament. Opposition groups were “highly marginalized and competed in only a minority of constituencies.”45 The PAP maintained control through a mix of effective governance, co-optation, and coercion, hitting opponents with defamation lawsuits.46 Co-opting increase women’s political power and elevate female perspectives. See: Beng, “PM Lee honors PAP Women’s Wing veterans.”

43 Tan, "Party quotas and rising women politicians in Singapore."
44 A search for news on the gender quota on Nexis Uni did not return informative results, indicating that the quota was poorly publicized before and after its announcement within the PAP. To verify the quota, I turned to Netina Tan, who cited the Beng article.
45 Ortmann, “Singapore.”
the opposition was another strategy for limiting competition;\textsuperscript{47} members of the opposition were made into non-constituency Members of Parliament (NCMPs) of nominated Members of Parliament (NMPs) and given restricted voting rights.\textsuperscript{48}

Another of the ruling party’s strategies for maintaining power is the use of Group Representation Constituencies (GRCs). In Singapore, some MPs are elected in Single Member Constituencies (SMCs), where constituents directly vote for a representative. In GRCs, constituents vote for a party’s three- to six-person slate of candidates. The official reason for GRCs is to “ensure that the minority racial communities in Singapore will always be represented in Parliament,” because at least one of the candidates in each group must belong to a minority racial community, such as Indian or Malay.\textsuperscript{49} Realistically, however, opposition parties struggle to find the candidates and resources to contest GRCs, which are required to supply at least one-quarter of the total number of MPs, according to the Parliamentary Elections Act.\textsuperscript{50} Before 2011, no opposition party had ever won a GRC.

In 2011, opposition parties positioned themselves as alternatives to the PAP and set out to compete in every constituency. Following a concede-to-thrive pattern, the government eased restrictions on online content. This concession allowed the opposition to rally support, manage volunteers, and recruit new members.\textsuperscript{51} In the general election, the Workers’ Party, an opposition

\textsuperscript{47} Ortmann, “Singapore.”
\textsuperscript{48} The Constitution provides for the appointment of up to 12 NCMPs, who are opposition candidates who did not win their elections, but came close. The Singaporean Parliament's website states that the NCMPs “ensure that there will be a minimum number of opposition representatives in Parliament and that views other than the Government's can be expressed in Parliament.” On the other hand, there are up to nine NMPs, who are experts representing specific professions or specialist viewpoints. NMPs are supposed to contribute “independent and non-partisan views in Parliament.” For more, see: “Members of Parliament,” Parliament of Singapore, accessed December 25, 2019, https://www.parliament.gov.sg/about-us/structure/members-of-parliament
\textsuperscript{50} Ibid.
group, picked up a five-seat GRC for the first time.\textsuperscript{52} Over the course of the 12th Parliament, 8 opposition politicians served as elected MPs.\textsuperscript{53} Although not enough to dent the PAP's supermajority, the opposition's surprise win led many scholars to conclude that the Singaporean political system was opening.

The 2011 election was both a major, unexpected shift in Singaporean politics and a change in the incentives for the members of the incumbent party. The election of opposition MPs in 2011 is a shock, considering the PAP’s long history of dominant supermajorities and the lengths the PAP traditionally went to in order to suppress the opposition.\textsuperscript{54} The resurgent Workers’ Party forced PAP members to recognize that their traditional messaging did not meet the needs of Singaporeans. Any given PAP MP had a heightened risk of not being re-elected. Reacting poorly to the election results or failing to interpret the message voters had sent ran the risk of increasing support for the Workers’ Party and further damaging the PAP’s hold on power.

2.5 Hypotheses

Singapore offers a unique opportunity to compare the impact of both internal and external reforms on political speech. In 2009, the PAP Women’s Wing suddenly announced an internal reform: the PAP would strive for women to fill 30 percent of the seats in Parliament. I hypothesize that this announcement activated \textit{fracturing social identities} within the party, priming MPs to consider gender and gender norms and increasing the salience of gender identity. There are two potential

\textsuperscript{52} When the Workers' Party won in the Aljunied GRC, it was because successfully convinced voters that Singapore’s future would be brighter if there was an alternative party balancing the PAP. Terence Chong, "A return to normal politics: Singapore general elections 2011," \textit{Southeast Asian Affairs} 2012, no. 1 (2012): 283-298.
\textsuperscript{53} One of the NCMPs belongs to the Singapore People’s Party; the rest belong to the Workers’ Party. There are several opposition parties in Singapore, but the Workers’ Party is by far the most successful.
\textsuperscript{54} Lydia Lim, “Quiet transformation of the PAP,” Straits Times, September 12, 2015, https://www.straitstimes.com/singapore/quiet-transformation-of-the-pap
impacts of the internal reform. Depending on whether the internal reform is interpreted as an implicit endorsement of gender essentialism, as Mansbridge cautions it could be, or as an attempt to increase the PAP’s appeal to voters, as Tan argued was the case, there should be different speech patterns. In the first, gender essentialist scenario, male MPs will increase their use of a masculine ideology that emphasizes defense, order, the economy, and security and protective, provider framing. In contrast, women will increase discussion of women’s issues and feminine, supportive framing. Alternatively, if the MPs are trying to appeal to more voters by seeming progressive and moving beyond gender pigeonholes, I hypothesize that men will increase their discussion of feminine topics and use of feminine framing, while female MPs will talk more like men stereotypically do.

In 2011, the shocking electoral win by the opposition served as an external reform that increased the party diversity of Parliament. I hypothesize that the external threat activated MPs’ unifying common identity, namely membership in the PAP. Attention shifted from an internal division, specifically the differing gender identities of party members, to the outside threat of the rising opposition. As the importance of gender is minimized, relative to the importance of party, speech will be shaped by whatever the MPs see as most critical to party legitimacy. Changes in speeches by male and female MPs will track in the same direction. In other words, all MPs will come to the same conclusion about how to defend party legitimacy; if speaking in a masculine way is helpful, both men and women will do so. There are two potential sources of legitimacy for the PAP. First, they could pursue a masculine-coded version of legitimacy based on protection, order, and stability. In this case, both male and female MPs would speak of masculine topics relatively more frequently and use more masculine framing. Alternatively, the PAP could pursue legitimacy by increasing social welfare policies, which are feminine-coded. If that were the case, both men
and women would have more discussions of ‘women’s issues’ like healthcare and education, as well as more feminine invocations of nurturing and caring.

In summary, the internal shock has two potential outcomes. My first general hypothesis is that after the internal quota, MPs will talk in more stereotypically gendered ways because they interpret the quota as meaning that politicians are defined by their gender and should follow their gender roles. Hypotheses 1A and 1B specify what I will observe if gender essentialism is at play. If that is not the case, then MPs will talk in less stereotypically gendered ways. Hypotheses 2A and 2B are what I will observe in political speech if the internal reform is seen as an attempt to capture more voters.

**Hypothesis 1A:** Men’s speech will reflect a more masculine ideology after the internal shock.

**Hypothesis 1B:** Women’s speech will reflect a more feminine ideology after the internal shock.

**Hypothesis 2A:** Men’s speech will reflect a more feminine ideology after the internal shock.

**Hypothesis 2B:** Women’s speech will reflect a more masculine ideology after the internal shock.

There are also two potential outcomes of the external shock. To increase support for the PAP, speech will center on historical sources of legitimacy, such as stability, prosperity, and protection, which draw from stereotypes of male roles and thus ideologies of masculinity. Hypotheses 3A and 3B are what will be observed in the corpus if MPs pursue traditional sources of legitimacy. On the other hand, the election could show that the party’s historical source of
legitimacy is insufficient or under threat, leading MPs to shift to a more feminine, welfare-centric vision of the party. In that case, speech would reflect hypotheses 4A and 4B.

**Hypothesis 3A:** Men’s speech will reflect a more masculine ideology after the external shock.

**Hypothesis 3B:** Women’s speech will reflect a more masculine ideology after the external shock.

**Hypothesis 4A:** Men’s speech will reflect a more feminine ideology after the external shock.

**Hypothesis 4B:** Women’s speech will reflect a more feminine ideology after the external shock.

### 3 Methodology

The shocks to Singapore’s ruling party allow me to evaluate and compare the effects of internal and external reforms on men and women’s political speech. With a corpus of parliamentary debates by the ruling party from 2008 through 2012, I use natural language processing to test changes in gendered topic prevalence and content before versus after each shock.55

#### 3.1 Periods of analysis

The gender shock was documented in early July 2009, while the election was in May 2011. Surrounding those dates with roughly one-year buffers gives me the period from 2008 to 2012. In the rest of the paper, I will refer to three periods:

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1. **Period 1**: The period before the pseudo-quota for women's representation, lasting from January 1, 2008 to June 30, 2009.\(^{56}\)

2. **Period 2**: The period after the pseudo-quota is implemented *and* before the 2011 election, lasting from July 1, 2009 to May 31, 2011.\(^{57}\)

3. **Period 3**: The period after the 2011 election, lasting from June 1, 2011 to December 31, 2012.\(^{58}\)

Table 1, below, shows the number of elected male and female PAP MPs in each of the periods of analysis. Periods 1 and 2 fall in the Eleventh Parliament, so the number of female and male MPs is static at 17 and 65, respectively. In Period 3, the Twelfth Parliament had 18 women and 62 men from the PAP. The total number of seats up for election in each period is also included so that the change in the number of PAP seats in the 2011 election is properly contextualized. The Workers’ Party won five seats in a GRC, while previously it had only had one elected seat, but the total number of elected MPs also increased from 84 to 87.

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\(^{56}\) The pseudo-quota was apparently enacted at some point in June or July 2009 (by July 6th, at the very latest). I use June 2009 because Parliament sat on March 29th and then did not reconvene until July 20th.

\(^{57}\) For ease of analysis, this is a single period. Accurately establishing when the effects of the quota shock wear off would be difficult and is beyond the scope of the paper.

\(^{58}\) The first sitting of the 12th Parliament, after the election, was on October 10th, 2011.
Table 1: Count of elected ruling party (PAP) Members of Parliament in the sample.59

<table>
<thead>
<tr>
<th></th>
<th>11th</th>
<th>12th</th>
<th>12th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Period 1</td>
<td>Period 2</td>
<td>Period 3</td>
</tr>
<tr>
<td>Women</td>
<td>17</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Men</td>
<td>65</td>
<td>65</td>
<td>63</td>
</tr>
<tr>
<td>Total Elected PAP</td>
<td>82</td>
<td>82</td>
<td>81</td>
</tr>
<tr>
<td>Total Elected Positions</td>
<td>84</td>
<td>84</td>
<td>87</td>
</tr>
</tbody>
</table>

3.2 Natural language processing

Natural language processing (NLP) transforms words into numbers, allowing algorithms to work through documents very quickly. Typically, NLP relies on converting texts into matrices of words and their associated frequency counts. By reducing the dimensionality of text and applying statistical methods, researchers can draw conclusions from a larger pool of documents than if they were hand-coding. Unsupervised classification of documents into groups, such as pro-government or anti-tax, removes human bias from the classification process. However, the outputs of NLP models must be contextualized with information about the case and the output units can be opaque.60 Using just one case—Singapore—and holistically evaluating results without reading too much into a single regression should help address this weakness.

This paper applies NLP to parliamentary debates. Parliamentary debates provide meaningful and obtainable data. Votes are infrequent and taken along party lines, while interviews are not feasible. Parliamentary speeches, in contrast, are plentiful. Since votes are not indicative

59 Michael Palmer resigned in December 2012 because of an extramarital affair. This is at the tail end of the third period of analysis. As of January 2013, an election to replace him had not been scheduled, so he is included (and his replacement is excluded) in the summary of men and women in the periods of study. Mong Palatino, “The Palmegate Affair,” The Diplomat, January 5, 2013, https://thediplomat.com/2013/01/the-palmergate-affair/
60 Justin Grimmer and Brandon M. Stewart, "Text as data: The promise and pitfalls of automatic content analysis methods for political texts," Political analysis 21, no. 3 (2013): 267-297.
of an individual MP’s views, given tight control by the party whip, and media outlets are censored, parliamentary speeches are perhaps even more meaningful in Singapore than in democracies. The data are also publicly available. Open-source official reports of the Parliamentary debates are recorded as close to verbatim as possible in the Hansard, yielding a wealth of textual data. MPs know that their words on the floor of Parliament will be published and disseminated to constituents and fellow party members. Therefore, they are careful and deliberate about which topics they choose to speak out on and which words they use when they address their peers. Speeches are thus highly calculated political acts and a valid measure of political preferences and relevant beliefs.

The Singaporean context poses some complications to the data generating process. While explicit censorship on the floor is not a concern, self-censorship by PAP members is a virtual certainty. However, that merely reflects the reality that politics are constrained in autocracies, and does not undermine the validity of the measure. Most debates are conducted in English; the ones that are in Malay or Mandarin are translated into English by the Singaporean government. This simplifies analysis by enabling a single pre-processing and cleaning methodology. Furthermore, translation by the state means that the words are uniformly and professionally translated. Nonetheless, there may be a systematic difference between what is said in Malay or Mandarin, as opposed to English. For instance, MPs may be trying to appeal to different constituencies when they switch languages. The translations also will not express the exact same flow of speech or connotations as the original text. In the future, controlling for the language that the speech was originally delivered in may be helpful.

Probabilistic topic models allow researchers to discover topics in textual data that would otherwise be prohibitively expensive to analyze or that contain patterns best found by a computer. Structural topic models incorporate document-level metadata to uncover the relationship between
the topics discussed in texts and the characteristics of those texts; in the case of this paper, key metadata are the author’s gender and seat type, as well as when the speech was given. The stm package in R allows users to examine both topic prevalence—i.e., how likely one is to encounter a certain topic within a text—as well as topic content—i.e., the way that a given topic is discussed. Topic prevalence provides quantitative evidence, since the estimateEffect function produces a regression showing the effect of different covariates on the prevalence of a topic. In contrast, topic content offers more qualitative understandings of how topics are framed. “Perspectives” depicts differences between two topics, content covariates or combinations. When plotting stm objects, one can choose to display the most important words, based on “prob”, “frex”, "lift", and "score". Perspectives graphs, however, always return the highest probability words. Seeing the words most frequently associated with each topic is not conducive to statistical analysis, but instead offers qualitative evidence.

3.3 Overview of the Parliamentary debate corpus

The texts of interest are transcripts of parliamentary debates from 2008 through 2012. The original corpus included all the speeches by MPs, NCMPs, and NMPs, regardless of party. The theories of this paper pertain only to members of the ruling party, so the corpus was restricted to only elected PAP members. The hypotheses laid out in Section 2 predict changes in men’s speech after a given shock, compared to men’s speech before the shock; similarly, they compare women’s speech in one period to women’s speech in another period. To enable these comparisons, I further broke up the corpus into four subsets: men in periods 1 and 2; women in periods 1 and 2; men in periods 2

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62 Roberts, Stewart, and Tingley, "stm".
and 3; and women in periods 2 and 3. While I considered seeing if the difference between men and women’s speech changed from period to period, the dataset is not large enough to provide the statistical power needed for that type of investigation.

The corpus of speeches from men in periods 1 and 2 has a vocabulary, after cleaning, of 48,023 unique words. Speeches from men in periods 2 and 3 have a vocabulary of 41,987 words. In contrast, the women’s corpora are smaller, reflecting the fact that there were fewer women in Parliament than men. The corpus of speeches from women in periods 1 and 2 has a vocabulary of 23,880 words, and the speeches from periods 2 and 3 have a vocabulary of 21,077 after cleaning.

Figure 4 is a simple word cloud comparing elected PAP men and women’s most commonly used words in Period 1. The relative frequency of each word determines its size. Some of the displayed words have a Singapore-specific, non-gendered meaning. For instance, ‘airport’ appears in the women’s half of the cloud and refers to the many conversations in Parliament about Singapore’s Changi airport. Similarly, ‘Mas,’ found in the upper middle part of the men’s cloud, is part of the name Mas Selamat, a terrorist who escaped from prison. In general, though, the trends at baseline support the predictions from the literature that women often discuss a set of ‘women’s issues,’ such as childcare, while men are more likely to discuss ‘men’s issues,’ like keeping order. Some of the most common words women used were children, social, elderly, and care, all of which relate to feminine-coded issues as well as feminine frames, such as nurturing and supporting others. Men frequently mentioned police, security, and prices, which relate to the masculine-coded subjects of order, security, and the economy.63

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63 As I describe later in the paper, topics had to be coded as either masculine or feminine. While it was clear how many of the topics should be coded, some were more ambiguous. The word cloud helped address ambiguities that were not covered in the literature or that were context-specific. For example, topics about sports were difficult to code because in the literature, sport is identified as one of the feminine, non-prestigious ministries often controlled by women. However, sports are also very male dominated. The appearance of the word ‘sport’ in the men’s word cloud, but not in the women’s word cloud, helped cement the decision to code sports as masculine.
3.4 Data preparation

The R stm package can create any number of topics, so there must be a method for optimizing the hyperparameter K, which represents the number of topics extracted from a corpus. The searchK function from stm provided statistics such as held-out likelihood, residuals, semantic coherence, and the lower bound for a vector of potential K values. The outputs from searchK for each corpus are included in Appendix A. Prior to analysis, the corpus was stripped of punctuation, a common list of stop words, and a study-specific list of stop words. Although it is

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65 Because all of the speeches are translated into English by the Singaporean government, I could use a single set of stop words. The common set of stop words came from the snowball list. Study-specific stop words were selected through an iterative process of generating word clouds and then removing gibberish or non-consequential phrases found in the word clouds. Gibberish, such as nonsensical strings of letters and numbers, were likely introduced by
common to stem words (for instance, converting family, families, families', and familial to famili), I chose not to do so, following Schofield et al.’s paper showing that stemming does not improve topic model coherence and reduces topic model consistency.66

Topics are represented by a group of words that best encapsulate the topic. Summaries of the models, with each topic’s keywords and expected frequency across the relevant sub-corpus, can be found in Appendix C. Figure 2, on the next page, shows the summary of the structural topic model for women in periods 1 and 2, as an example of the data being analyzed. The outputs are simply labeled with a topic number from 1 to K, but the keywords paint a picture of what is being discussed. For instance, Topic 6 is clearly about health, especially as it relates to the elderly. Topic 7 is more opaque, but a quick search for the acronyms in use shows that AHG stands for Additional Housing Grant, while LUP is the Lift Upgrading Program, so this topic is about housing. In cases where the keywords are not enough, plots of the ‘perspective’ were used for additional context. These plots show the words that had the highest probability of being associated with a topic in Period 1, contrasted with words that had a high probability of being associated with the topic in Period 2. The stm function findThoughts, which outputs the most representative document for a given topic, was also helpful.

the inclusion of non-English letters/characters and formatting errors from converting PDFs to Microsoft Word documents. A list of the study-specific stop words is in Appendix B.

The hypotheses of this paper require considering changes in the use of masculine and feminine ideas across periods. Therefore, the topics from each corpus had to be coded as masculine, feminine, or neutral. Prominent categories of feminine topics are education, health, family, and community care. Similarly, the literature often defined masculine topics as including foreign policy, the economy, and security. In the Singaporean context, order was also an important masculine-coded topic. Topics were assigned a gender ideology using the general topic keywords and additional context from the period-specific topic content words and the findThoughts stm.

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### Topics from women in periods 1 and 2

<table>
<thead>
<tr>
<th>Topic</th>
<th>Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>geriatric, beds, medicines</td>
</tr>
<tr>
<td>7</td>
<td>aging, revitalisation, lup</td>
</tr>
<tr>
<td>8</td>
<td>Topic 8: admin, administration</td>
</tr>
<tr>
<td>9</td>
<td>Topic 9: education, health</td>
</tr>
<tr>
<td>10</td>
<td>Topic 10: pedagogical, civics, friendships</td>
</tr>
<tr>
<td>11</td>
<td>Topic 11: order, discipline</td>
</tr>
<tr>
<td>12</td>
<td>Topic 12: security, defence</td>
</tr>
<tr>
<td>13</td>
<td>Topic 13: posts, dubai, grows</td>
</tr>
<tr>
<td>14</td>
<td>Topic 14: security, hawker, meagre</td>
</tr>
<tr>
<td>15</td>
<td>Topic 15: order, discipline</td>
</tr>
<tr>
<td>16</td>
<td>Topic 16: men, operationally, ns</td>
</tr>
<tr>
<td>17</td>
<td>Topic 17: celebrating, email, muslims</td>
</tr>
<tr>
<td>18</td>
<td>Topic 18: sharpening, highlighting, underclass</td>
</tr>
<tr>
<td>19</td>
<td>Topic 19: opted, opting, perpetrator</td>
</tr>
<tr>
<td>20</td>
<td>Topic 20: order, discipline, unity</td>
</tr>
<tr>
<td>21</td>
<td>Topic 21: education, health, universal</td>
</tr>
<tr>
<td>22</td>
<td>Topic 22: admin, administration, deepening</td>
</tr>
<tr>
<td>23</td>
<td>Topic 23: instilled, segregate, ir</td>
</tr>
<tr>
<td>24</td>
<td>Topic 24: half-day, begging, fraternity</td>
</tr>
<tr>
<td>25</td>
<td>Topic 25: sri, investee, e-services</td>
</tr>
<tr>
<td>26</td>
<td>Topic 26: acceding, poems, thumboo</td>
</tr>
<tr>
<td>27</td>
<td>Topic 27: trunk, unveiled, commuter</td>
</tr>
<tr>
<td>28</td>
<td>Topic 28: populist, re-creation, phantom</td>
</tr>
<tr>
<td>29</td>
<td>Topic 29: deadline, nos, guideline</td>
</tr>
<tr>
<td>30</td>
<td>Topic 30: advocate, goodness, nurtured</td>
</tr>
</tbody>
</table>

Figure 2. Summary of topics generated by stm from the corpus of speeches from women in periods 1 and 2.

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67 There are other topics that are considered women’s issues, such as women’s rights, but all the topics generated by stm fit into the above four categories. For instance, there were not any topics that seemed to focus on women’s rights.
function. If topics fit into one of these eight categories, they were accordingly marked as masculine or feminine and the category was also recorded. Topic 6 from the corpus of women in periods 1 and 2 was a clear example of a feminine topic in the health category. A few gendered topics were thrown out because they were associated with fluke events; for instance, the escape of the terrorist Mas Selamat breakout was a security-oriented, and thus masculine-coded event, but it was a freak incident and thus analysis of its relative prevalence in different periods was inappropriate.

4 Results

Table 2 shows the number of gender-coded topics in men and women’s corpora from periods 1 and 2 as well as the change in prevalence following the internal reform. The columns of the table are the number of gendered topics and the rows of the table are change in prevalence of those topics (increasing, decreasing, or no change). To see whether feminine or masculine topics increased more, one would compare the columns in the first row. Table 2 shows that men discussed ten masculine topics in periods 1 and 2. Three of these increased in prevalence in Period 2, while seven had no change in prevalence. In contrast, three ‘feminine issue’ topics increased in prevalence and four did not change. Within the corpus of women’s speeches in periods 1 and 2, there were eight masculine topics, none of which changed in prevalence after the shock. Of the six feminine topics, one increased in prevalence in Period 2 and five had no change.
Table 2: Effect of the internal reform on gendered topic prevalence among PAP MPs.

<table>
<thead>
<tr>
<th>Change in prevalence from Period 1 to Period 2</th>
<th>MP Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td></td>
<td></td>
<td>Females</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of masculine topics</td>
<td>Number of feminine topics</td>
<td>Number of masculine topics</td>
<td>Number of feminine topics</td>
<td></td>
</tr>
<tr>
<td>Increase</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Decrease</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 shows the same information for the external reform. Men discussed eleven masculine topics in periods 2 and 3, five of which decreased in prevalence in Period 3 and six of which showed no significant changes. There were eleven feminine topics in the men’s sub-corpus, and five increased in prevalence, two decreased, and four did not change. Women talked about seven masculine topics, none of which changed in prevalence after the external shock. Of the six feminine topics in the women’s sub-corpus, one decreased in prevalence and the others did not change.

Table 3: Effect of the external reform on gendered topic prevalence among PAP MPs.

<table>
<thead>
<tr>
<th>Change in prevalence from Period 2 to Period 3</th>
<th>MP Gender</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td></td>
<td></td>
<td>Females</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of masculine topics</td>
<td>Number of feminine topics</td>
<td>Number of masculine topics</td>
<td>Number of feminine topics</td>
<td></td>
</tr>
<tr>
<td>Increase</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Decrease</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>6</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>11</td>
<td>7</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
Below, I present further analysis of the prevalence and content of these topics. Topics are organized into eight categories: security, order, foreign policy, and economy, which are masculine, as well as community care, family, education, and health, which are feminine. Topics are labeled with their category, but because there are multiple topics in each category for a given sub-corpus, I refer to topics by the number that the structural topic model assigned to them. For the sake of space, the model summaries that connect topic numbers with their keywords are not in the main text, but rather in Appendix C. When topics are referenced by number, I clarify what each topic is about by including a footnote with the keywords supplied by the structural topic model for that topic.

4.1 Internal reform

Of the 40 topics that male PAP members discussed in periods 1 and 2, 17 are gendered. Figure 3 shows the effect of the internal reform on men, in terms of the change in topic prevalence from Period 1 to Period 2. The estimateEffect function calculated the effect of a Period 2 dummy on the prevalence of each topic. Three feminine topics, about health, family, and community care, are significantly positive at the 0.05 level.68 In addition, Figure 5 shows that three masculine topics significantly increased in prevalence; two of these topics were about the economy and one was about security.69

68 The keywords for Topic 30 (Health) are flu-like, asymptomatic, saliva, syphilis, virus, inpatients, crowning. The keywords for Topic 34 (Family) are middle-income, two-parent, upper-income, uncooked, centre-based, cfac, sandwiched. Lastly, the keywords for Topic 39 (Community care) are heartfelt, publicised, repository, maturity, ceos, user, ensure that.
69 The keywords for Topic 21 (Security) were impinge, philippine, treasured, wreaking, prized, liaison, pcg. The keywords for Topic 26 (Economy) were loansharking, loanshark-related, harassment, cltpa, supply-centric, non-prosecution, anti-unlicensed. The keywords for Topic 36 (Economy) were resale, hle, over-build, dbss, balloted, lifecycle, cash-over-valuation.
Figure 3. Dot and whisker plot of the effect of the internal reform on topic prevalence in men’s political speech, with 95% confidence.

Perspective graphs, which show the topic content, revealed that some topics were reframed in more masculine ways in Period 2. In a perspectives plot, the color and placement of the words (from far right to far left) indicate how strongly associated the words are with Period 1 versus Period 2, while the size of the word is proportional to its use. Figure 4 shows a perspectives plot of Topic 13, which is a discussion of (masculine-coded) foreign policy issues, such as protests in Hong Kong and haze pollution from Southeast Asian wildfires. A secondary theme to the topic is the importance of order, to prevent Hong Kong-style protests in Singapore and provide good governance to Singaporeans. In Period 1, MPs emphasized government and collective social units, such as society, country, and citizenship. Then, in Period 2, MPs became more outward facing and focused on other Southeast Asian countries as well as Temasek, which is a state-owned investment company. Moving from neutral or perhaps even feminine-coded focus on the

70 The keywords for Topic 13 are logging, steward, motorcyclist, ching, troubles, palms, biased.
community to a narrower focus on foreign policy issues is an example of masculine reframing. Similarly, Figure 5 is an example of a feminine topic area (health) that is framed in a masculine way in Period 1 as concern about infectious disease. Then, in Period 2, framing shifts to be even more masculine, as MPs express their concerns about immigration.

Figure 4. Perspectives plot of highest probability words for men in periods 1 and 2, regarding Topic 13 (foreign policy).

Figure 5. Perspectives plot of highest probability words for men in periods 1 and 2, regarding Topic 30 (health).

71 Topic 30 has the keywords flu-like, asymptomatic, saliva, syphilis, virus, inpatients, crowning.
However, the perspective graphs also show that some topics were reframed to be more feminine. Topic 2 is about family, which is a feminine topic, and significantly increased in prevalence in Period 2. Figure 6 shows that this topic also was reframed from somewhat masculine, with law-centric content, to extremely feminine concerns for children in Period 2. Figure 7 shows a similar increase in the femininity of the framing of Topic 34, which is about childcare subsidies and thus feminine-coded. Unfortunately, the word ‘government’ is clipped on the left, but in Period 1, attention is on the government, budget, and a goods and services tax (GST). However, in Period 2, the focus becomes helping and supporting children and families, which is a much more feminine frame.

Figure 6. Perspectives plot of the highest probability words for men in periods 1 and 2, regarding Topic 2 (family).

72 The keywords for Topic 2 are garnishee, unfilial, pre-filing, client’s, appoints, ex-wife, and conciliation.
73 As mentioned in a footnote above, the keywords for Topic 34 are middle-income, two-parent, upper-income, uncooked, centre-based, cfac, and sandwiched.
Women in periods 1 and 2 discussed 30 topics, 14 of which were gendered (see Figure 8). The eight masculine-coded topics had no significant changes in prevalence. One feminine-coded topic increased in prevalence, but the others did not change. When the confidence interval is adjusted to 90%, there is slightly more evidence of women increasing their discussion of feminine topics, in the categories of education, health, and community care; see Figure 22 in Appendix D.

74 The feminine-coded topic that increases in prevalence is Topic 10, which is about education. The keywords are pedagogical, civics, friendships, semester, academically, cme, and nie.
Changes in topic content in the women’s sub-corpus were relatively uncommon, but one topic was reframed in a more feminine way, as shown in Figure 9. Topic 18 is about economic growth and was therefore coded as a masculine topic. In Period 1, the topic was a discussion of social, enterprise, and economy, but in Period 2, MPs began framing economic issues in terms of families, children, and assistance.

The keywords for Topic 18 are sharpening, highlighting, underclass, chorus, neediest, decentralisation, and google.
4.2 External reform

Men in periods 2 and 3 generated a corpus with 55 topics, 22 of which were gendered (see Figure 10, below). Of the masculine-coded topics, which fall into the categories of economy, foreign policy, order, and security, five decreased in prevalence in Period 3 and six did not change.\(^{76}\) Five feminine-coded topics increased in prevalence, two decreased, and four did not change.\(^{77}\) Figure 11 is a perspectives graph of Topic 10, which is about community care, in the form of helping workers and families.\(^{78}\) Topic 10 is therefore a feminine-coded topic that also increased in

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\(^{76}\) The five masculine topics that decreased in prevalence are Topics 12, 21, 24, 27, and 42. Topic 12, coded as a foreign policy topic, has the keywords nuclear, atomic, pre-feasibility, brent, biologics, tourism, and LNG. Topic 21, coded as an economy topic, has the keywords sterilise, counterfeit, icao, anti-vice, spca, and carriers. Topic 24 is coded as a topic about order and has the keywords admissible, remand, solicitor, injunctions, litigants, magistrate's, and admissibility. The keywords for Topic 42, which is about the economy, are mis-selling, counterparty, faa, insider, fidrec, exchange-traded, and issuer.

\(^{77}\) The five feminine topics that increased in prevalence are Topics 4, 10, 19, 45, and 54. Topic 4, coded as an education topic, focuses on cultural activities and students and has the keywords edinburgh, festival, nac, acca, festival's, and ocbc. Topic 10 looks at financing education and uses the keywords upping, exited, pq's, recipients, bursary, inequitable, and edusave. Topic 19 is coded as community care and has the keywords lifts, blocks, lift, town, bridges, vicinity, and councils. Topic 45 is a community care topic with the keywords flexi-work, rep, telecommuting, tafep's, flexi-time, inertia, and dismissals. Lastly, Topic 54 is an education topic with the keywords withstand, girls, labs, aggregate, scoring, boys, and wonder. The feminine topics that decreased in prevalence are Topics 46 and 48. Topic 46 is about elder friendliness, and thus community care; its keywords are nkf, elder, confucian, lonely, able-bodied, warmth, and givers. Topic 48 is about education and has the keywords 2c, single-session, preschools, scripts, classrooms, Yale-NUS, and self-esteem.

\(^{78}\) The keywords for Topic 10 are upping, exited, pq's, recipients, bursary, inequitable, and edusave. Edusave is a fund, set up by the Singaporean government, that Singaporean students can use for school fees. Geraldine Mark, “Singapore Parents’ Guide To Understanding (And Maximising) Their Child’s Edusave and PSEA,” Dollars and
prevalence in Period 3. In Period 2, male MPs focused on the structure of the welfare, like what the fees would be and who would receive benefits at what time. Although the word ‘needy’ is on the Period 2 side of the graph, its proximity to the dotted line that divides the periods and greyish hue, rather than red, indicates that it is not as strongly associated with Period 1 as other words, like ‘receive.’ Men moved from this gender-ambiguous framing to very feminine framing in Period 3, as men in that period used words such as help, families, and assistance. The focus became explicitly on recipients of welfare, such as families, as well as rhetoric about helping others, as shown with the words ‘help’ and ‘assistance.’

**Figure 10. Dot and whisker plot of the effect of the external reform on topic prevalence in men’s political speech, with 95% confidence.**

The structural topic model classified women’s speeches in periods 2 and 3 into 25 different topics. Thirteen of those topics were gendered. The seven masculine-coded topics did not change in prevalence between periods 2 and 3. One feminine-coded topic decreased in prevalence, but the other five were unchanged, as shown in Figure 12. The topic content was also largely unchanged between periods 2 and 3. The one exception is Topic 22, which is a masculine-coded discussion of the economy that showed an insignificant decrease in topic prevalence. As Figure 13 shows, in Period 2, the most common words for discussing this aspect of the economy were ‘productivity’ and ‘workers.’ However, in Period 3, MPs reframed the topic to focus on women, which were not an important part of the conversation in Period 2.

79 The feminine-coded topic that decreased in prevalence is Topic 24, which is about education and has the keywords closing, stricter, secretary, excessively, mo, kio, and assistants.

80 The keywords for Topic 22 are kickbacks, seekers, unhygienic, air-conditioning, flexi-work, weed, and smarter.
Figure 12. Dot and whisker plot of the effect of the external reform on topic prevalence in women’s political speech, with 95% confidence.

Figure 13. Perspectives plot of highest probability words for women in periods 2 and 3, regarding Topic 22 (economy).

4.3 Robustness

MPs from single-member districts may face higher levels of scrutiny than MPs who are elected in batches from group representation constituencies. Constituent pressures can change the ways that
MPs respond to the internal and external reforms. To control for this possibility, a dummy for SMC versus GRC seat type was included in the structural topic models. There was no variation in constituency type for women in periods 1 and 2, so checking the robustness of those results to seat type was not possible. The topic content aspect of stm currently only accepts one variable, so it was impossible to also control for the impact of seat type on content.\footnote{Originally, this paper was supposed to include sensitivity analysis that tested the likelihood of statistically significant period coefficients if the corpus was broken up randomly, rather than according to the internal and external reforms. Unfortunately, this is only possible with access to computers that are more powerful than a personal laptop. Future iterations of this project will hopefully include sensitivity analysis to increase the robustness of the findings.}

The coefficients for the period variables are shown in Appendix E. Controlling for seat type, the prevalence of feminine-coded topics still increased in the sub-corpus of men’s speeches from periods 1 and 2. Three feminine topics increased in prevalence, which is the same result as without the control. Only two masculine-coded topics increased in prevalence after the internal reform, but two masculine topics were also on the margin of increasing in prevalence at a statistically significant level.\footnote{The two masculine topics were Topic 8, categorized as a foreign policy topic, and Topic 26, categorized as an economy topic. The p-value for Topic 8 was 0.056 and the p-value for Topic 26 was 0.052.} As for the results of the external shock for women, with the controls, there was one increase and one decrease in the prevalence of feminine-coded topics. In the men’s sub-corpus, the controlled effects of the shock still showed an increase in the prevalence of five feminine-coded topics and a decrease in the prevalence of five masculine-coded topics. The same two feminine topics that had decreased in prevalence in the uncontrolled regressions also decreased in the controlled regressions. The one new result was an increase in the prevalence of one masculine topic, which centered on the economy. Overall, however, the control did not meaningfully change the results of the regressions of topic prevalence.
5 Discussion

Men and women got different messages from the gender pseudo-quota, but the gender essentialism pathway seems more supported than the ‘appeal to more voters’ mechanism. As for the external reform, men decreased their use of masculine rhetoric and increased their use of feminine ideas. Overall, the results of the external shock challenge the belief that MPs who have the same motivation will behave the same way, regardless of gender.

5.1 Internal reform

Following the internal reform, there is weak evidence of gender essentialism, meaning MPs felt that the quota meant they had to adhere to stereotypical gender roles. Men drew on masculine ideology more in Period 2 than in Period 1, while women drew slightly more on feminine ideology after the shock. These findings support Hypothesis 1A and Hypothesis 1B, which state that men’s speech will reflect more masculine ideology after versus before the shock and women’s speech will reflect more feminine ideology after vs. before the shock.

There are a few complications to this interpretation. First, the results for women are quite weak. Only one regression was statistically significant at alpha = 0.05. Women did reframe one topic in a more feminine way, but there were few other changes in topic content. Second, in addition to increasing the use of masculine ideology, male MPs also increased the use of feminine ideology, which undermines the idea of gender essentialism.

Based on these facts, the most important lesson of the internal reform is that men and women had different takeaways from internal messaging. After the pseudo-quota, men engaged with both a gender essentialist approach by speaking in a more masculine way, as well as trying to appeal to more progressive voters by speaking in a more feminine way. On the other hand,
women took the pseudo-quota as a weak endorsement of gender essentialism or ‘women's unique point of view.’

One potential reason for the mixed results of the pseudo-quota is the PAP’s unwillingness to admit or accept a gender quota. In 2009, Netina Tan, a scholar of gender in Singaporean politics, responded to PAP leadership making negative comments about gender quotas by publishing a letter to the editor protesting the double standard of including ethnic quotas in GRCs, but not establishing formal gender quotas. MP Lim Hwee Hua published a response that argued that gender quotas undermine Singapore’s meritocracy. Presenting quotas as binding upper limits, she said that “if we set a fixed number of 50 per cent of women in Parliament, but if, based on merit, more than 50 per cent deserve places, then a quota would be unnecessarily restrictive and self-defeating… if fewer than the prescribed minimum of 50 per cent deserve places, then there would always be doubt whether the ones admitted were all meritorious.” She also pointed out that there are many reasons women may choose not to climb corporate or political ladders and lauded women who had reached the apex of their fields on their own merit, while avoiding acknowledging the barriers that prevent other meritorious women from succeeding. Another response to Tan’s letter painted gender quotas as a slippery slope that would lead to an ever-expanding number of quotas. Although the pseudo-quota clearly affected the substance of parliamentary debates, cultural resistance to gender quotas could explain the diffuse changes.

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83 The letter to the editor was published in the Straits Times and is cited multiple times on Tan’s website and in archived responses to the letter hosted on NexisUni. However, the original letter is unavailable.
Another potential explanation for the fact that effects on men are stronger than effects on women is differences in how people conceptualize civil service. Chew’s survey of coverage of Singaporean elections in the 1980s and ‘90s shows that female candidates were often portrayed as ‘discovered’ or called to service, especially by their male family members.86 Because ambition is considered an undesirable trait in women, women framed their political careers as acts of service. As a result of this social conditioning, women may also genuinely feel no need to pursue greater power or have no objection to ending their service by losing office because of a political miscalculation. Men, on the other hand, are not punished for ambition and so they face fewer disincentives to obscure their desires for political relevance and power.

To further this goal, men may be chasing out whatever topic is most important at the time—for instance, if a pandemic is underway, men will talk a lot about a feminine-coded subject, but not for any of the reasons specified in the hypotheses of this paper. Rather, they are addressing the most significant issue of the moment. This sort of situation should be avoided by carefully hand-coding topics and removing fluke topics, like the discussion of Mas Selamat. In the future, however, sensitivity analysis that breaks the corpus at arbitrary points and tests for changes in gendered topic prevalence and framing would further address this concern.

Setting aside the issue of peacetime topics, there are several reasons that the results of this paper should not be impacted by women framing their careers as a service to Singapore. First, all politicians in Singapore have an incentive to present themselves as civil servants. Meritocracy is extremely important to both PAP and Singaporean values. Salaries for Singaporean politicians are the highest in the world, which is justified by meritocratic competency and the need to keep people from jumping into the private sector or engaging in corruption. Both men and women are

86 Chew, “Political Women in Singapore.”
conditioned to serve, rather than profit from time in government, impacting their actual motives as well as their presentation. Second, while women may feel less comfortable demonstrating ambition, the best way that one can serve is by adapting to the needs of the party or the voters, i.e. addressing the reforms identified in this paper.

A stronger explanation for why men changed their speech more than women lies in different levels of risk aversion. To respond to the pseudo-quota (or election shock), politicians must decide whether to draw on more feminine rhetoric, increase their use of masculine rhetoric, or stay the course. There are few clues as to which course of action has the best implications for a politician’s success within the party or at the ballot box. Studies show that women are less willing than men to act without knowing the consequences. Higher aversion to risk explains one of the most consistent findings in political science, which is that women seemingly have less political knowledge than men. Risk aversion makes women less likely to guess on questions they are uncertain of, leading to more ‘don’t know’ answers and a lower apparent level of political knowledge.

In political settings such as parliamentary debates, women may feel that the punishment for making the wrong choice is even higher because of double-standards, stereotypes of women’s capabilities, and lack of expertise. First, women are held to higher standards for competence; their


achievements are rewarded less and their mistakes punished more. Second, negative stereotypes adversely impact women’s performance on tasks such as math tests. Women may also worry that their political failures will reinforce stereotypes that women are bad leaders or politicians. Lastly, women may have less direct experience with topics that are being debated in Parliament, further lowering their willingness to change behavior after an internal (or external) reform and discuss different topics. In contrast, men are not only more willing to take risks, they may legitimately face lighter consequences for their mistakes.

While many of the studies on risk aversion, and gendered political psychology in general, are conducted in Western contexts, there are several reasons to expect the results to apply to Singapore. Singaporean gender norms are very similar to Western norms. Chew’s content analysis of media coverage of the earliest female politicians shows that women often portrayed themselves as passive and unambitious in order to conform to female gender expectations while taking atypical roles. Women also did not enter Singaporean politics until the 1980s and there have been relatively few female politicians since then. Lack of precedents or examples make it harder to know how to


91 The “extra cognitive burden [of] worrying about confirming the low performance expectations of others” is known as ‘stereotype threat.’ McGlone, Aronson, and Kobrynowicz leverage stereotype threat to interrogate the political knowledge gender gap and find that “explicit and implicit cues reminding women of the possibility that they might confirm a negative gender stereotype can impair their retrieval of political knowledge.” See Matthew S. McGlone, Joshua Aronson, and Diane Kobrynowicz, "Stereotype threat and the gender gap in political knowledge," Psychology of Women Quarterly 30, no. 4 (2006): 392-398.

92 Men and women may know different things about politics; see Kathleen Dolan, "Do women and men know different things? Measuring gender differences in political knowledge," The Journal of Politics 73, no. 1 (2011): 97-107. Differences in knowledge are a concern in the risk aversion literature, where some scholars have noted that women are often less familiar with the situations used to assess risk aversion. For instance, women may, on average, be less familiar with investment, leading them to make safer choices than men, who are familiar and confident with investing. See: Tania Verge, Marc Guinjoan, and Toni Rodon, "Risk aversion, gender, and constitutional change," Politics & Gender 11, no. 3 (2015): 499-521.
the party or the electorate will respond to the choices of female politicians. The greatest sources of risk aversion, namely negative stereotypes of women and limited knowledge of the dangers of making the ‘wrong’ choice, apply to Singaporean women in politics.

The costs of the ‘wrong’ choice apply to both the individual and the group. A woman incorrectly responding to a reform can make her seem less competent or in touch with the people. Damage to her reputation decreases her chances of re-election and lowers her support from the party leadership, which limits access to resources and promotion opportunities. For women as a group, misreading reforms can solidify stereotypes of women as bad politicians. Stereotype threat limits women’s willingness to engage in risky behavior, lest they confirm this negative perception.

The specific demographics of the PAP Members of Parliament in Singapore likely contribute to women being more risk-averse. According to the Inter-Parliamentary Union, female candidates are much more likely to be elected than male candidates in Singapore. However, women are also much less likely to run for office. This disparity may be caused by the patriarchal nature of Singaporean society and women’s lower chances of being recruited to run for office.

The proportion of women in ministerial level positions, according to the World Bank, hovered around five percent from 2010 to 2016. I analyzed the PAP MPs who were in the sample of this study and found that around 40 percent of women had some sort of ministerial experience before

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93 In the most recent election in 2015, 35 women ran for Parliament and 22 were elected, which is a 63 percent success rate. In contrast, 146 men ran and 70 of them, or 48 percent, were elected. While this differential success rate may be related to the fact that the opposition stood for election in every constituency in 2015 and therefore more men may have failed to win their race, women still seem to face few barriers to winning. However, the fact that four times as many men ran for Parliament as women shows that women are relatively unlikely to become candidates. “Singapore – Parliament,” IPU Parline, accessed April 6, 2020, https://data.ipu.org/node/154/data-on-women?chamber_id=13525

94 For more on the patriarchal nature of Singaporean society, see: Tan, "Party quotas and rising women politicians in Singapore." See also Fox and Lawless, “Uncovering the origins of the gender gap in political ambition.”

2013. In contrast, roughly 60 percent of men had some sort of ministerial experience. The women elected to office are highly qualified, often having backgrounds as lawyers, doctors, or professors. Nonetheless, the opportunity to develop or display expertise as a minister is considerable and often missed by women. Although men and women were around the same age when first elected (40 and 41, respectively), on average, male MPs in the Eleventh and Twelfth Parliament were first elected in 2000. The average start year for women was 2004. Thus, in addition to men having more ministerial experience than women at the end of the period of analysis in December 2012, they generally had more experience with being an MP. In general, men had more political experience and power than women, increasing men’s relative willingness to riskily change their speech patterns.

The internal reform had strong effects on men’s speech and weak effects on women’s speech. While these results tepidly support the ‘gender essentialism’ hypotheses, the broader conclusion is that men were more responsive to the reform than women. Women are generally less experienced than men and may feel that they have more to lose if they pick the wrong strategy for political speech. Men have longer tenures and more powerful positions, and thus, they can make greater adjustments in their speech.


97 In periods 1 and 2, 40 of the 82 men had ministerial experience, or 62 percent. In Period 3, 39 out of 81 had experience, which is also 62 percent. I considered an MP to have ministerial experience if, before 2013, they held a position as a parliamentary secretary for a ministry, minister of state for a ministry, or minister for a ministry. The World Bank found much lower rates of female experience in ministerial positions than I did, partially because they calculated rates on a yearly basis while I looked at whole careers, and potentially also because they were not looking at as wide a range of positions.
5.2 **External reform**

The evidence suggests that in Period 3, men spoke in a way that was less masculine, and more feminine, than in Period 2. However, there were negative coefficients on feminine topics, specifically topics 46 and 48; I looked at those in detail and did not find any period-specific quirks that explain this.\(^{98}\) The topic content results further support an increase in feminine ideology. Furthermore, men’s discussion of masculine topics decreased after the external reform. While a decrease in masculine topics is not necessary for there to be an increase in feminine ideology, the fact that masculine topics did decrease in prevalence provides additional support to Hypothesis 4A. Overall, men’s speeches from periods 2 and 3 support Hypothesis 4A: men’s speech will reflect more feminine ideology after versus before the shock.

The types of changes men made could be a direct response to the type of opposition party that succeeded in the electoral shock. The Workers’ Party focuses on worker welfare issues that are more typical of feminine ideologies of government. Moreover, discontent with the PAP was rising because of increasing awareness of inequality in Singapore, which is an issue the Workers’ Party seized on and can be addressed through a stronger social safety net. If the PAP were facing a different opposition party, such as an ultranationalist far right party or a green party, the response to the external shock might have been different. There is a chance that PAP MPs were also responding to the elevation of specific members of the opposition to elected MPs with full voting rights. However, speeches by a prominent Workers’ Party MP in Period 3 mainly discussed masculine-coded issues, which is the opposite pattern displayed by men of the PAP.\(^{99}\) Currently,

\(^{98}\) Topic 46 is a community care topic with the keywords nkf, elder, confucian, lonely, able-bodied, warmth, and givers. Topic 48 is an education topic with the keywords 2c, single-session, preschools, scripts, classrooms, yale-nus, and self-esteem.

\(^{99}\) Sylvia Lim is a member of the Worker’s Party who went from a Nominated Member of Parliament in periods 1 and 2 to an elected MP representing the Aljunied GRC with full voting rights in Period 3. She is a very prominent member of the opposition, serving as the chairman of the Workers’ Party, and a lawyer who could spar handily with
specific members of the opposition do not seem to have a strong impact on responses to the external shock.  

For the women, one feminine topic decreased in prevalence in Period 3. The topic content analysis is largely unhelpful, but one story of note is that a masculine topic—number 22—was reframed in a feminine way in Period 3. When women discussed the labor force in Period 2, they often advocated for flexi-work arrangements to help women who pulled a second shift as caretakers. However, women’s rights are somewhat overshadowed in Topic 22 by protections for foreign workers and ways of increasing productivity. When women’s labor force participation was discussed in Period 2, it was often in a problematic way. Dr. Amy Khor Lean Suan opened her comments on economic growth and labor protection plans with a cartoon of a woman dreaming of “being a model employee, super-mum and another Kim Yu Na with the perfect body proportions of a “hot bod babe.”” Rather than interrogating these impossible demands for women, the MP

PAP MPs. As both a NMP and elected MP, Ms. Lim took advantage of questioning, which is one of the few powers minority MPs can use to check the power of the ruling party. Ms. Lim could have shaped political speech after external reforms by forcing ministers to respond to questions on topics of her choice. The electoral shock could also have convinced PAP MPs that they need to bolster support for the party by asking positive questions whenever Ms. Lim asked a critical question. Many of Ms. Lim’s questions were delivered in writing because there was not enough time for her to deliver them on the debate floor. Written exchanges were included in the structural topic model with spoken exchanges. In the future, controlling for whether speeches were given in writing or in person would be a valuable addition to this study. Most of research of opposition questioning in parliament is from Western democracies, but a study of Belgium and Denmark found that opposition MPs were more likely to ask questions than MPs from the majority: Rens Vliegenthart and Stefaan Walgrave, "Content matters: The dynamics of parliamentary questioning in Belgium and Denmark," Comparative Political Studies 44, no. 8 (2011): 1031-1059. In the context of European Parliament, Proksch and Slapin find that opposition parties use questions as a form of executive oversight; Ms. Lim probably uses her questions for a similar purpose. Sven-Oliver Proksch and Jonathan B. Slapin, "Parliamentary questions and oversight in the European Union," European Journal of Political Research 50, no. 1 (2011): 53-79.  

100 Hand-coding Sylvia Lim’s debate contributions in Period 3 revealed that of 61 gendered contributions, only seven were feminine-coded and 54 were masculine-coded. If men in the PAP were trying to engage with her in debates, they would have increased, not decreased, their discussion of masculine topics. In the future, however, controlling for responses to Lim and other opposition MPs would be a valuable improvement for this work.  

101 The topic in question is number 22, which focuses on flexi-work arrangements, foreign laborers, and a goods and services tax amendment. The keywords are kickbacks, seekers, unhygienic, air-conditioning, flexi-work, weed, and smarter.  

102 To read the speech in full, see: Singapore, Parliamentary Debates, Parliament, 2 March 2010, (Amy Khor Lean Suan) https://sprs.parl.gov.sg/search/topic?reportid=010_20100302_S0004_T0001. Kim Yuna is a famous South Korean figure skater who won multiple Olympic medals in ladies’ singles. As a skater, she was known for her elegance and beauty. She is a very successful model and spokesperson. See: Korea Times, “Retired South Korean
concludes her speech by saying, “Indeed, better jobs, better wages and better quality of life could make us even more productive both at work and at home or, more specifically, in the bedroom as well!” She makes it clear that she is being lighthearted, but Singaporean women face intense pressure to marry and have children. Comments about productivity in the bedroom remind MPs, and Singaporeans reading debate transcripts, of the highly traditional expectations of women. In Period 2, women’s labor force involvement is framed as a struggle to meet high expectations of women as workers and as mothers.

In Period 3, women changed their discussion of labor and the economy in Topic 22 to include women’s existing contributions to the labor force and ways of bolstering female participation. For instance, MP Foo Mee Har cited research linking gender equality and a country’s economic strength. She then framed the battle for women’s labor force participation as a long-standing PAP issue by invoking a speech by Lee Kuan Yew from 1975 in which he emphasized the benefits of fully investing in women and the danger of underutilizing their potential. The MP also uses her own lived experience as a woman to explain the difficulty of being a working mom, saying, “I remember my own days as a young mother, rushing home to see my sons during lunch break, that was the best reward for my working day, and that was usually only 15 minutes before I had to dash off again to drive back to the office for the next meeting.”

MP Foo Mee Har uses skater Kim Yuna still rules outside stadiums,” SCMP, February 23, 2018
104 Parliament devotes a large amount of time to debating ways of raising the Singaporean birth rate, often framing the top-heavy demographic pyramid as an issue of national security and stability. Some ensuing pro-family policies are benign—MP Yu-Foo Yee Shoon notes that in 2010, Singapore budgeted $720 million to provide Baby Bonuses, childcare subsidies, maternity leave and childcare leave: see Singapore, Parliamentary Debates, Parliament, 10 March 2010, (Yu-Foo Yee Shoon). Others directly hinder women, such as a 30% university admission quota that curbed the number of women medical students in the national medical school for decades (which has since been revoked); see: Tan, "Party quotas and rising women politicians in Singapore,"
an economic efficiency argument and a personal anecdote to draw attention to the importance of supporting women through flexi-work and other accommodations.

However, given the weakness of the changes in topic prevalence and content, as well as the opposite directions of the effects, there is no reason to believe that women changed their political speech after the external shock. Thus, there is no support for Hypothesis 3a or Hypothesis 4b.

The most telling aspect of the external reform is that men and women do not respond to the same stimulus in the same way. I assumed that the threat to the party would lead men and women to change their speech in the same way. This argument is commonly propagated by opponents of gender essentialism and scholars arguing against gender differences in politics. However, even if men and women are making equally rational choices, the benefits and detriments of each choice differ, leading to divergent outcomes. Much of the discussion from the previous section about why men had stronger responses than women. Women’s higher risk aversion, discussed above, explains why men and women may face similar motivations but behave differently. All incumbent politicians want to increase party legitimacy after an external shock, but men increase the feminine aspects of their speech and women do not change their speech.

6 Conclusion

Evidence from Singapore from 2008 through 2012 sheds light on the impact of liberalizations on gendered political speech in autocracies. Using structural topic modeling, I compared the impact of internal and external reforms on parliamentary debates from members of the ruling party. Initially, I hypothesized that the internal reform—specifically, a party pseudo-quota for women’s representation—would either increase stereotypically gendered speech, as party members reacted
to an endorsement of gender essentialism, or decrease such speech, to increase appeal to voters. I found weak evidence that men increased their use of both feminine and masculine rhetoric after the internal reform, while women slightly increased their use of feminine-coded ideas. I also hypothesized that the external reform—a shocking electoral victory by the opposition—would either lead the incumbent party to defend its legitimacy using masculine-coded ideas or using feminine-coded ideas. Once again, men had the more meaningful changes, steering away from masculine rhetoric and increasing feminine rhetoric.

In general, the external reform had a slightly stronger, clearer impact on the ruling party MPs than the internal reform. Overall, men had much stronger reactions to both reforms compared to women, due to men’s lower risk aversion. Policymakers should recognize that reforms go beyond their stated purpose of increasing women’s representation or electoral competition. The side effects of reforms are much stronger for men’s speech than women’s speech. These facts may impact the policy selection process for activists campaigning for democracy and gender equality.

This paper lays the foundation for additional work on political speech in Singapore. Currently, the basis of comparison for the external reform is what people did after the internal reform. The effects of each reform are examined in isolation. In the future, it would be interesting to examine MPs who experienced both shocks and see how responses to the external shock are moderated by experience of the internal shock. The paper could be further refined by restricting analysis to only a few categories of topics, such as defense or health. Reducing the number of topics examined would allow researchers to focus more specifically on changes in the textual data. Survey experiments with politicians, although difficult to execute, could more definitively ascertain whether risk aversion is, in fact, the reason that women are less likely to modify their speech than men. Another avenue for future research requires restructuring the data so that
researchers can evaluate the impact of the order in which speeches are made. Once this task is accomplished, researchers can evaluate the impact that specific members of the opposition have on debates when they enter parliament. Additional information on the effect of opposition rhetoric can be attained by moving beyond Singapore. Studying other electoral authoritarian states would show how ruling parties respond to the elevation of parties that, unlike the Workers’ Party in Singapore, are not social-democratic.

Finally, while the paper controls for the different pressures facing politicians elected directly versus in groups, there are a few other controls of interest. One area of investigation is controlling for debate content that is spoken on the floor, as opposed to submitted in writing. Parliamentary speeches are very formulaic and politicians are generally known for their oratory skills. Nonetheless, written submissions to the Hansard probably require more deliberation than speeches given in the heat of the moment and may more strongly reflect the strategic choices made by politicians. Another future control is the language in which a speech was delivered, because politicians might be trying to communicate with different constituencies depending on their language of choice. Further exploring gendered speech in autocracies will enable policymakers to make more informed decisions and academics to better understand an understudied intersection of gender and politics.
Appendix A: SearchK diagnostics

Figure 14. SearchK diagnostics from women in periods 1 and 2.

Figure 15. SearchK diagnostics from men in periods 1 and 2.
Figure 16: SearchK diagnostics for the corpus of women in periods 2 and 3.

Figure 17. SearchK diagnostics from men in periods 2 and 3.
Appendix B: Additional stop words

Appendix C: Structural topic model summaries

Figure 18. Summary of the structural topic model of speeches made by men in periods 1 and 2.
Figure 19. Summary of the structural topic model of speeches made by men in periods 2 and 3.
Figure 20. Summary of the structural topic model of speeches made by women in periods 2 and 3.
Appendix D: Reform effects with 90% confidence

Figure 21. Effects of the internal reform on men’s speech with 90% confidence.

Figure 22. Effects of the internal reform on women’s speech with 90% confidence.
Figure 23. Effect of the external reform on men’s speech with 90% confidence.

Figure 24. Effect of the external reform on women’s speech with 90% confidence.
Appendix E: Reform effects, controlling for seat type

Figure 25. Effect of the internal reform on men’s speech, controlling for seat type.
Figure 26. Effect of the external reform on men’s speech, controlling for seat type.

Figure 27. Effect of the external reform on women’s speech, controlling for seat type.
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