In the Defense of Women: Gender, Office Holding, and National Security Policy in Established Democracies

Michael T. Koch Texas A&M University
Sarah A. Fulton Texas A&M University

Do women’s political gains in office translate into substantive differences in foreign policy outcomes? Previous research shows that men and women hold different national security policy preferences and that greater representation by women in the legislature reduces conflict behavior. But are these relationships an artifact of confounding variables? To answer this question, we analyze the defense spending and conflict behavior of 22 established democracies between 1970 and 2000. We argue that the ability of female officeholders to represent women’s interests is context dependent—varying with the level of party control over legislators and the gender stereotypes that officeholders confront. Consistent with the literature on stereotypes, we find that increases in women’s legislative representation decreases conflict behavior and defense spending, while the presence of women executives increases both. However, these effects are conditioned by the gendered balance of power in the legislature and the degree of party control in the political system.

On November 7th 1916, Jeannette Rankin (R-MT) became the first female elected to the House of Representatives. Four days into her term on April 6, 1917, the House voted on whether the United States should enter World War I. Rankin cast one of only 49 votes in opposition of the resolution. Twenty-four years later, Rankin was the sole vote in opposition to declaring war against Japan, the day after the attack on Pearl Harbor. She argued before the vote that, “As a woman, I can’t go to war and I refuse to send anyone else” (Rankin 1941). More recently, former Senator and now Secretary of State Hillary Rodham Clinton (D-NY) stated in a speech before the U.S. Senate, “If I had been President in October of 2002, I would have never asked for authority to divert our attention from Afghanistan to Iraq, and I certainly would never have started this war” (Clinton 2007).

Over the past several decades, women have made substantial gains in politics both in the United States and abroad: the percentage of women serving in the U.S. Congress has increased from less than 3% in 1965 to 15% 40 years later. In France, a similar pattern emerges with women increasing their representation from less than 2% to over 11%. In the United Kingdom, women’s representation went from roughly 4% to over 18% during the same time period. While in Sweden, women’s representation increased from about 14% to over 40% (Inter-Parliamentary Union 2008).

As women make greater inroads into politics, do these gains translate into substantive differences in foreign policy outcomes? Although a diverse literature considers whether women’s representation alters international relations (Breuning 2001; Caprioli 2000; Goldstein 2001), the theoretical and empirical relationship between women’s representation in politics and foreign policy outcomes remains confounded by a complex web of relations between gender, partisanship, and institutional structure. For instance, is the relationship between women’s representation and foreign policy behavior an artifact of partisan effects, as some studies have argued (Lovenduski and Norris 2003; Norris 1996)? Or do female politicians exert

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1 An online appendix for this article is available at http://journals.cambridge.org/JOI containing a list of the countries in our sample, a discussion of the control variables, and descriptive statistics. Data and supporting materials will be made available at http://people.tamu.edu/~mtkoch/index2.
genuine influence, as others contend (Caprioli 2000; Regan and Paskeviciute 2003)?

Our treatment distinguishes itself from much of the prior scholarship on gender and national security by acknowledging that confounding variables may account for the apparent relationships reported elsewhere. By incorporating variables for institutional variation, the partisanship of the government and changing norms of society, we test whether the relationship is robust after rival explanations are considered. At the same time, we recognize that much of the foreign policy decision making occurs at the executive level. By accounting for the gender of the executive, as well as the gender of key foreign policy cabinet members—such as foreign minister and minister of defense—we recognize the interdependent relationship between these two branches, resulting in a more nuanced understanding of national security decision making.

More broadly, because our analysis considers these questions from both a cross-national and longitudinal perspective, our research is unique from most prior work that examines a single country or a single time period (Beckwith 2007). In addition, unlike prior research that focuses on a single policy outcome in a single year, we examine multiple outcomes—defense spending and conflict behavior—over a 30-year time period, minimizing concerns that our results are an artifact of measurement error associated with using one outcome to measure a multidimensional policy space (see Kittilson 2008; Schwindt-Bayer and Mishler 2005). Beyond these empirical concerns, we argue that the ability of female politicians to represent women's interests is context dependent and varies with the level of party control over legislators and the gender stereotypes that officeholders confront. By accounting for these variations both theoretically and empirically, we shed more light on to the conditions under which descriptive representation leads to substantive outcomes (Mansbridge 1999; Pitkin 1967).

In order to gain a more complete picture of the relationship between women in office and national security, we analyze the defense spending and conflict behavior of 22 established democratic countries between 1970 and 2000 (see online Appendix A for a list of countries). Consistent with earlier research, we find that that women's presence in the legislature is inversely related to conflict behavior and defense spending, even after controlling for alternative explanations like partisanship and changing norms of society. However, with respect to defense spending, the institutional context alters the magnitude of the effect. Moreover, we demonstrate that national security policy is not only responsive to the gender composition of the legislature. Instead, as predicted by the literature on gender stereotypes, the presence of women executives increases both military expenditures and the use of force as a policy tool. However, our analysis reveals that these effects are conditioned by the gendered balance of power in the legislature—women in the legislature appear to temper the more hawkish tendencies of female executives. By providing a framework to better explain when descriptive representation leads to substantive representation, we offer strong evidence that gender is consequential to states' foreign policy—emphasizing the importance of bringing gender into models of national security decision making and international conflict.

### Previous Research on Gender and National Security

At the mass level, a large body of evidence shows that men and women view national security and interstate conflict differently. Women, for example, are less likely than men to support the use of force to solve international problems, a pattern that exists in the United States (Conover and Sapiro 1993; Eichenberg 2003; Shapiro and Mahajan 1986) as well as in other advanced western democracies (Jelen, Thomas, and Wilcox 1994; Wilcox, Hewitt, and Allsop 1996).2

At the elite level, research demonstrates a persistent gender gap on domestic policy issues (Diaz 2005; Swers 1998, 2002; Wobbrocht 2000), but on foreign policy issues, the research is less consonant (Holsti and Rosenau 1990). While some research reveals a gender gap, others find that women are no different from men. These discrepant results may be partially attributable to differences in research design—cross-national or single-country studies—each with their attendant costs and benefits.

Cross-national research examining the relationship between gender, representation, and conflict reports that as women make inroads in political office, states become less conflict prone, providing evidence that gender affects foreign policy (Caprioli 2000; Caprioli and Boyer 2001; Regan and Paskeviciute 2003). Caprioli finds that as the percentage of women

2Compared to 45% of male respondents, approximately 55% of female respondents indicated the United States should not use force to solve problems on the 1992, 1996, and 1998 ANES. Similarly, a 2002 German election study found that over 49% of women opposed engaging in a war in Iraq while only 37% of men responded in kind (http://www.gesis.org).
in the legislature increases, states become “less likely to rely on military force to settle international disputes” (2000, 65). Likewise, Regan and Paskeviciute (2003) find that a “gender” peace—similar to the democratic peace proposition—exists.

However, single-country studies provide conflicting evidence of whether and how gender matters. Initially, Norris and Lovenduski (1989) reported that compared to men, women candidates were more likely to favor defense cuts and oppose increases in spending, although the magnitude of this effect varied by party. However, subsequent analyses indicate that after controlling for partisanship, gender is not significant in predicting foreign policy priorities (Norris 1996). Moreover, in her examination U.S. Senators, Swers (2007) finds that gender affects the sponsorship of defense related bills as women seek to overcome credibility challenges on national security issues.

Beyond these mixed results, each approach gives rise to omitted variables problems. For instance, much of the cross-national research fails to account for state-level factors, like government partisanship, which may affect national security policy. Because women are more likely to be from the left-side of the political spectrum, higher proportions of women in the legislature may be a proxy for left-leaning governments, which recent research asserts are less conflict prone (Koch 2009; Palmer, London, and Regan 2004). On the other hand, although single-state studies can account for factors such as partisanship, by focusing on a single-country or a single-time period, this research may be biased by a failure to acknowledge that differences in electoral rules or other institutional features may affect both women’s representation and conflict behavior. In addition, single-year studies do not allow for variation of key moderating factors, such as changes in the national security environment or differences in societal norms over time.

Much of the literature pays more attention to women in legislatures, with female chief executives receiving less empirical scrutiny—perhaps due to the dearth of female executives.3 But, chief executives are important actors in determining a state’s national security posture—particularly in defense spending and deciding when to use force in the international system. In terms of decisions over the use of force, the chief executive is more influential than legislatures (Auerswald 1999; Koch and Gartner 2005). With respect to the budgetary process, executives exert influence in this domain as well (Stapenhurst et al. 2008), although the amount of influence varies by country (Barroclough and Dorotinsky 2008; Dodd 1998). Yet most of the previous research on the influence of women in foreign policy neglects this interdependent relationship. We improve on the previous research by incorporating these omitted factors not adequately controlled for in earlier works. By employing cross-sectional time-series data, we can account for variation both within and between countries, allowing us to untangle the complex relationship between gender, representation, and national security policy.

A Theoretical Model of Gender, Representation, and Foreign Policy

Although our immediate analytical interest concerns women’s representation in politics and national security policy, we are more generally concerned with how descriptive representation reveals itself substantively. The relationship between descriptive and substantive representation is contingent upon both the questions asked and the methods employed (Childs 2006). Some studies find a link between descriptive representation of women and substantive outcomes (Bratton and Ray 2002; Schwindt-Bayer and Mishler 2005; Thomas 1991). For instance, Kittlison (2008) reports that the presence of women in parliament affects family leave policy beyond the influence of party. However, other research suggests that increasing women’s representation and power may hinder policy responsiveness (Sanbonmatsu 2008). For example, Kathlene (1994) finds that increases in women’s representation can lead to legislative backlashes by male legislators, inhibiting women’s ability to pass legislation (see also Rosenthal 1998). One explanation for these inconclusive results is the composition of the institution. Crowley (2004) contends that adding a member to a small token group has a greater impact on the passage of legislation than adding a member to a group on the cusp of becoming a nontoken group. She argues that increases in women’s representation beyond some point can actually undermine the representation of women’s interests. Beyond these concerns, Weldon (2002) argues that substantive representation of women’s interests can be better articulated through social movements or even government organizations, rather than through descriptive representation in the legislature.

Indeed, given the electoral constraints that all politicians confront—whether from the electoral

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3There are eight female chief executives in our data. This is four more female executives than in the Caprioli and Boyer study (2001).
district or from the party—it is not entirely transparent whether an empirical link would occur between descriptive and substantive representation (Norris 1997). We argue that the ability of legislators to act on behalf of descriptive groups varies across political systems in terms of whether they are party-or candidate-centered. In addition, we posit that the level and prominence of office alters women’s response to gender stereotypes.

**Institutional Effects**

All female legislators experience the push and pull of descriptive groups, as well as electoral principals. Although these interests may be in alignment in some cases, in others, legislators may be torn in different directions. Moreover, electoral rules—whether they are a party-centered system, candidate-centered system or some combination of both (Norris 1997; Siavelis and Morgenstern 2008)—alter the electoral incentives that politicians confront. As a consequence, we view the ability of legislators to act on behalf of descriptive groups as dependent on the institutional context.

In strong party systems, parties can use screening mechanisms to ensure that delegates to the legislature have similar interests and preferences. Müller explains that in strong party systems, potential ministers have to work their way up through the party, which allows parties to “check their moral qualifications” (2000, 327). The party organization monitors the votes of the party members in government to ensure coherence—and in some cases, can remove the delegate in the next election if the delegate has not been faithful to the party. Therefore, we expect the ability of women to act as descriptive representatives to be constrained in party-centered systems.

In contrast, candidate-centered systems produce weaker parties with less control over their members. As a result, party-monitoring strategies—such as implicit contracts to uphold the party label, or party threats to remove the legislator from office—are not useful for controlling legislators (Kiewiet and McCubbins 1991). Incumbents cultivate personal votes based on patronage or delivering “pork” to the district and do not solely rely on the party for their positions (Mayhew 1974; Siavelis and Morgenstern 2008). Moreover, parties are typically not the determinant of who runs for office at the legislative level. In light of these features, we anticipate that female legislators ought to have greater latitude to represent descriptive groups in candidate-centered systems.

In sum, we expect that the ability of legislators to represent descriptive groups and move the policy status quo towards their descriptive group’s preferred policy—as opposed to their electoral principals’ preferences (if they are not in agreement)—to be conditioned upon electoral institutions (Ström, Müller, and Bergman 2003). The probability of women acting in concert to move policy towards their preferred position is mediated by the electoral structure—with women in candidate-centered systems being more effective in moving policy than women in party-centered systems.

**Gender Stereotypes**

Cross-national research on gender stereotypes reports that women are consistently perceived as possessing traits such as kindness, cooperation, compassion, warmth, and gentleness; whereas men are viewed to be more aggressive, firm, authoritative, and powerful (Williams and Best 1990). These stereotypes are so strong as to lead scholars to posit a theory of “gender issue ownership” (Herrnson, Lay, and Stokes 2003)—arguing that people use politicians’ gender to make performance evaluations and to infer policy preferences “in much the same way as they use party identification and other traditional voting cues” (Herrnson, Lay and Stokes 2003, 245; see also McDermott 1997, 1998). For instance, women are viewed as more politically liberal and are perceived as being more competent on compassion issues such as education, programs for the poor, healthcare, and the environment. In contrast, males are viewed as being more politically conservative and more capable on military and tax issues (Alexander and Anderson 1993; Koch 2000; Shapiro and Mahajan 1986).

Because male and female politicians are stereotyped as holding different character traits, ideologies, and issue competencies, women may confront credibility challenges in masculinized leadership positions, such as executive office. Eagly writes: “… highly male dominated or culturally masculine (leader roles) … present particular challenges to women because of their incompatibility with people’s expectations of women” (2007, 6). When it comes to masculinized leadership positions, like executive office, this challenge to gain credibility may lead women to present themselves as more masculine, in an attempt to combat the stereotype.

On the other hand, feminine qualities may be more socially acceptable for female politicians to
exhibit at lower or nonexecutive levels of office (Huddy and Terkildsen 1993). At the legislative level, women may be more inclined to embrace the stereotypes that are associated with their gender. For instance, Kahn (1994) reports that female sex stereotypes advantage women in state-level office, but disadvantage them at the national level. Thus, the magnitude of the credibility challenge for women varies as the leadership position becomes more masculine. At the executive level, women may feel compelled to stress their toughness and aggressiveness, but at the legislative level, may experience less pressure to “prove” themselves.

In light of recent research that demonstrates that voters are more supportive of male than female candidates when foreign policy concerns dominate the political agenda (Dolan 2004; Lawless 2004), female executives are wise to address the credibility challenges embodied by the feminine sex stereotype.4

**Gender, Defense Spending, and Conflict Behavior**

Our two dependent variables of interest are defense spending and conflict behavior. This contrasts with much of the prior research which concentrates on examining stated preferences for defense spending, or rare events like Militarized Interstate Disputes (MIDs). We focus on defense spending because it is one of the most significant determinants of a state’s overall foreign policy (Ihori 2004; Richardson 1960). Defense spending signals the preferences and perceptions of policymakers (Deger and Sen 1991). For example, after the Cold War—as the threat of global war receded—military expenditures declined globally by roughly 3% a year. However, as new conflicts emerged in the mid-1990s, military expenditures increased. By 2000, military spending increased globally by almost 4%.5 We measure defense spending as the proportion of a state’s military expenditures to the state’s national product.

Our second dependent variable is the conflict behavior of states. Although prior work reports that representation and conflict are correlated, this work largely focuses on MIDs and interstate crises (Caprioli 2000; Caprioli and Boyer, 2001). However, these are relatively rare events, and the estimation challenges associated with the study of rare events are well-documented (King and Zheng 2001). To overcome these estimation problems, we use events data and focus on the average conflict behavior of governments over time using the World Events Interaction Survey (WEIS) data.

We expect that women’s increased representation in the legislature should be inversely related to defense spending and conflict behavior, holding all else equal. However, we expect that female chief executives will push for increased defense spending and more hawkish foreign policies in order to combat gender stereotypes. We propose the following hypotheses:

**Hypothesis 1a:** As the proportion of women in the legislature increases, defense spending decreases.

**Hypothesis 1b:** As the proportion of women in the legislature increases, conflict behavior decreases.

**Hypothesis 2a:** If the chief executive is a woman, defense spending increases.

**Hypothesis 2b:** If the chief executive is a woman, conflict behavior increases.

We also expect conditional effects between the proportion of women in the legislature and the gender of the chief executive. As women gain greater access to politics, the need for female chief executives to prove themselves or overcome stereotypes against them may diminish. Therefore, we expect the proportion of women in the legislature to moderate the effect of a female chief executive.

**Hypothesis 3a:** As the proportion of women in the legislature increases, defense spending by female executives decreases.

**Hypothesis 3b:** As the proportion of women in the legislature increases, conflict behavior by female executives decreases.

We expect women in the legislature to decrease spending and conflict behavior, however we anticipate that this effect is conditioned by whether the system is party- or candidate-centered. Because legislators are more dependent on the party for their seats in party-centered systems, their freedom to represent descriptive groups may be more constrained than in candidate-centered systems. Therefore, we anticipate

4Women executives may also be more aggressive in their foreign policy preferences because opposing male heads of state may view women as either weak or less equal (Caprioli and Boyer 2001; McGlen and Sarkees 1993).

that the ability of women to act as descriptive representatives to be greater in candidate- rather than party-centered systems.

\textit{Hypothesis 4a:} On average, women in party-centered systems will spend more on defense compared to women in candidate-centered systems.

\textit{Hypothesis 4b:} On average, women in party-centered systems will increase conflict behavior compared to women in candidate-centered systems.

### Alternative Hypotheses

Alternative explanations may account for the relationship between gender, representation and foreign policy. For instance, partisanship may drive women’s lack of support for the use of violence. Prior research demonstrates there is a strong correlation between gender and partisanship (Norris and Lovenduski 1995; Welch 1985), with women being more left leaning in their political orientations than men. If left and right governments adopt different national security policies—with parties of the right emphasizing a strong or expanded military presence at home, while parties of the left favoring a diminished military presence (Klingemann, Hofferbert and Budge 1994; Koch 2009)—decreases in interstate conflict and military spending might be the result of a left-oriented government being in power, rather than a gender difference per say.

Alternatively, although women’s gains in representative government may be associated with declines in defense spending and conflict, changing norms within countries may underlie both of these outcomes. Prior research linking gender and violence focuses on the norms of gender equality, with equitable societies less likely to engage in violent conflicts (Caprillo 2000; Enloe 2000). According to this perspective, policy change is not because of women’s political representation, but rather, changing societal preferences. Increased representation is not the cause of reduced conflict; rather, both are a consequence of shifts in societal values.

A third explanation we address is reverse causality. Previous research argues that declining threats to security increases the proportion of women in the legislature. For instance, in her survey of preferred candidate traits, Lawless reveals that under heightened threats to national security, “citizens prefer ‘masculine’ traits and characteristics in their leaders and believe that men are more likely than women to possess these qualities” (2004, 487). To address this possibility, we test whether the level of defense spending, war involvement and the end of the Cold War affect the proportion of women in the legislature.

### Data and Methods

We analyze 22 established democratic countries between 1970 and 2000; with the unit of analysis the government year (see online Appendix A for a list of countries). Our measure of defense spending is a state’s military expenditures as a proportion of a state’s national product. We call this measure \textit{Defense Spending}. This measure allows for comparisons both across countries and over time, because they are unaffected by changes in currency exchange rates or inflation (Khanna and Sandler 1996). This measure is preferable to raw expenditures because as Goldsmith explains, raw military expenditures are:

\ldots sensitive to currency conversion rates\ldots the year at which to benchmark inflation\ldots (and) perhaps more important\ldots (are) less valid as a measure of defense effort because (they do) not control for the resources available to the state. (2003, 552)

To analyze the relationship between gender, representation and conflict we use the WEIS data which consists of the average conflict behavior of a government over time (McClelland 1971). The WEIS data quantifies interactions between states, with small numbers representing relatively benign interactions and large numbers representing increasingly hostile interactions. Our measure, \textit{Conflict Behavior}, is the average weighted conflict score with all other states in a given year using Goldstein’s (1992) weighting scheme.

Our first primary explanatory variable, \textit{Women in the Legislature}^6, is the percent of women in the lower house of the legislature.\textsuperscript{7} Our other primary explanatory variable, \textit{Woman Chief Executive}, is whether the chief executive of the government is a male or female. Although our hypotheses focus on

\textsuperscript{6}From the Inter-Parliamentary Union (http://www.ipu.org).

\textsuperscript{7}We focus on the lower house for many reasons. Eight states in the sample are unicameral, and have no upper house. In addition, the ability of upper houses to affect legislation varies considerably by country. Moreover, the means of gaining seats varies in the upper house—members can be either appointed, elected, or earn their seats through inheritance.

\textsuperscript{8}From the Worldwide Guide to Women in Leadership (www.guide2womenleaders.com), The Almanac of Women and Minorities in World Politics (Martin 1999), and Women Political Leaders (Jensen 2008).
the chief executive, we also consider the effects of women holding key ministerial cabinet posts in the executive branch, including: Minister of Defense and Minister of Foreign Affairs. We expect women in these offices to behave similarly to women chief executives.

To capture the ability of parties to control their legislators, we control for candidate- or party-centered systems. Party-centered systems emerge from proportional representation and whether the party determines who is on the ballot (Carey 2007; Lupia 2003). Our measure Party Control ranges from zero to two, with zero indicating majoritarian or preferential voting, and two indicating closed-list proportional representation voting (Gerring, Thacker, and Moreno 2005).

To address whether the political orientation of the government—rather than the presence of women—exerts an influence on the foreign policy of states, we include a measure of Partisanship (Budge et al. 2001). We use the weighted mean score of the government, with each party’s left-right score weighted by the percentage of seats it controls among all the parties in government. Positive numbers indicate more right-oriented governments, and negative numbers indicate more left-leaning governments.

We acknowledge that societal norms may be an omitted variable that causes increases in the proportion of women in government, as well as reduced conflict and defense spending. To account for these potential effects, we use Cingranelli and Richards’ (2009) data on women’s political and social rights. We call these measures Women’s Political Rights and Women’s Social Rights. Each measure ranges from zero to three with higher values indicating greater gender equality. The temporal range of data is 1981 to 2000.

We also include controls for a variety of factors that the research suggests affect either conflict behavior and/or defense spending, including: GDP per Capita, Parliamentary System, Major Power, Capabilities, War, Alliances, Post-Cold War, Opposing Conflict Behavior, and Proximate Democracies (for a detailed discussion of the variables, see online Appendix B).

To test the alternative hypothesis that declining threats to security affect the proportion of women in the legislature—rather than the proportion of women affecting the national security policies of states—we present a model that treats the gender balance of the legislature as a dependent variable. In this analysis, we examine whether defense spending levels—which proxy for security concerns—and interstate factors such as war involvement and the Cold War, influences the proportion of women in the legislature. We include our women’s rights measures to account for societal values towards women, because research indicates that more egalitarian countries have higher levels of female political representation (Inglehart and Norris 2003). We also include measures of whether the political system is a parliamentary regime and include our party control measure, given that these are likely to increase women’s representation (McAllister and Studlar 2002). Additionally, we include a measure of whether party-based gender quotas exist. This measure is from the Institute for Democracy and Electoral Assistance. We have 129 elections for our 22 countries.

Following Beck (2001), we use ordinary least-squares (OLS) regression with panel-corrected standard errors (PCSEs) to deal with potential correlation of error terms and heteroskedasticity in our time-series panel-data. We also tested for autocorrelation and stationarity using Wooldridge’s (2002, 282–83) suggestions for panel-data models. The results indicate that our models are stationary and do not suffer from autocorrelation.

**Results**

Table 1 presents the regression models of the influence of women in politics on Defense Spending. We lag all the independent variables in the model by one year because spending outcomes are unlikely to be contemporaneous.

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9 Minister of Foreign Affairs includes equivalent positions such as the U.S. Secretary of State.

10 We determined parties in government using Woldendrop, Keman, and Budge’s (2000) data, updated using the European Journal of Political Research reports. For details on the categories used to code a party’s position on a left-right scale, see Budge et al. (2001, 132–33).

11 These measures include both legal rights and whether they are enforced. The women’s political rights measure does not include any data regarding the number of women in office.

12 Even though recent work contends that lagged dependent variable specifications cause the coefficients for explanatory variables to be biased downward (see Beck 1985; Keele and Kelly 2006), we estimated the spending models with lagged dependent variables as a strict test of our hypotheses. Our women in government and women executive measures are still significant and in the expected direction. We also reran all of the analyses excluding potential outliers such as the United States and Israel. The results were unchanged.
Our first hypothesis is that as the proportion of women in the legislature increases, defense spending decreases. The results of Model 1 confirm this hypothesis. Partisanship is positive and significant, meaning right-oriented governments spend more on defense as a proportion of GDP. However, even after controlling for this alternative explanation, Women in the Legislature is significant and correctly signed, indicating that a one percentage increase in the proportion of women in the legislature leads to approximately a .1% decrease in defense spending. To put these effects into context, we compute predicted values of defense spending for two countries with dramatically different levels of defense spending and gender egalitarianism—the United States and Norway. Using year 2000 spending and GDP data, a 1% increase in women’s representation in the legislature produces a $314 million reduction in U.S. defense spending, or a $3.34 million decrease in Norwegian defense spending.13 Remarkably, these substantively and statistically significant results persist even in the face of alternative explanations—most notably, partisanship.

Confirming our other hypothesis, Woman Chief Executive is positive and statistically significant, indicating that female chief executives increase defense spending by over 3%. Again, using year 2000 spending and GDP data, the presence of a female executive would produce almost a $10.6 billion increase in U.S. defense spending, or an $11.4 million increase in Norwegian defense spending. Minister of Defense is positive and significant, confirming our expectation that female defense ministers are more hawkish than their male counterparts. While Minister of Foreign Affairs is positive, it does not reach conventional levels of statistical significance. The presence of a female defense minister increases defense spending an additional 2.5%. Put into more concrete terms, a Norwegian female defense minister would increase spending by almost $8.5 million, while a female Secretary of Defense in the U.S. is associated with approximately a $7.7 billion increase in defense spending, in year 2000 dollars. All of the control measures except the Post Cold War variable are consistent with both prior work and our expectations (see online Appendix B).14 Our Party Control measure

<table>
<thead>
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<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
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<td>Women in the Legislature</td>
<td>-.101*** (.018)</td>
<td>-.043** (.018)</td>
<td>-.041* (.019)</td>
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<td>Woman Chief Executive</td>
<td>3.44*** (.885)</td>
<td>5.20** (1.75)</td>
<td>1.43*** (.462)</td>
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<td>Women in Leg. X Woman Chief Exec.</td>
<td>2.53*** (.537)</td>
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<td>1.31*** (.144)</td>
<td>1.78*** (.192)</td>
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<td>.062*** (.013)</td>
<td>.056*** (.011)</td>
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<td>Partisanship</td>
<td>-.799* (.494)</td>
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<td>.011 (.009)</td>
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<td>.214 (.268)</td>
<td>.381 (.261)</td>
<td>.635* (.305)</td>
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<td>Minister of Foreign Affairs</td>
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<td>.733* (.390)</td>
<td>.931*** (.288)</td>
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<td>Capabilities</td>
<td>17.93*** (3.55)</td>
<td>18.20*** (3.68)</td>
<td>2.68 (4.72)</td>
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<td>War</td>
<td>2.19* (.791)</td>
<td>2.02** (.754)</td>
<td>.424 (2.81)</td>
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<td>-.0001*** (.000)</td>
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<td>.830** (.298)</td>
<td>.830** (.298)</td>
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<td>R2 (overall)</td>
<td>.28</td>
<td>.30</td>
<td>.25</td>
</tr>
</tbody>
</table>

Note: *p < 0.05, **p < 0.01, ***p < 0.001 one-tailed test. Panel Corrected Standard Errors in parentheses.

13In 2000, U.S. defense spending was approximately $311 billion and Norwegian defense spending was approximately $3.3 billion.

14The Post-Cold War measure is not significant, reflecting that the “peace dividend” was relatively short-lived. See footnote 5.
suggests that more party control increases defense spending.15

In addition to the main effects of women in office on defense spending, Hypothesis 3a posits a conditional effect between the proportion of women in the legislature and female executives. In Model 2 of Table 1 we address this concern. Consistent with the first model, increases in the proportion of women in the legislature decreases defense spending, while women executives increase expenditures. But, the negative and significant interaction term Woman Chief Executive* Women in Legislature demonstrates that the effect of female executives is mediated by the proportion of women in the legislature.

To better interpret this interaction, Figure 1 plots the predicted values of defense spending varying Women in the Legislature and Woman Chief Executive, holding all the other variables at the mean (for continuous variables) or median (for categorical variables). The graph shows that when women control 5% of legislative seats, and the executive is female, the state spends about 6% of GDP on defense, while male executives spend approximately 3%. But, as the proportion of women in the legislature increases, this difference shrinks. When women control more than 20% of the legislature, the difference in the spending behavior of male and female chief executives is statistically indistinguishable from zero as the confidence intervals overlap. These results confirm Hypothesis 3a.

Hypothesis 4a posits that women legislators in party-centered systems will exert less of an effect on defense spending than women legislators in candidate-centered systems. In Model 2, Women in the Legislature is the effect when Party Control and Women in the Legislature*Party Control is zero (that is, candidate-centered systems). This variable’s negative and statistically significant coefficient means that women in candidate-centered systems decrease defense spending. The combined sum of the negative coefficient for Women in the Legislature, the positive coefficient for Party Control, and the negative coefficient for Women in Legislature*Party Control is 1.72 and is significant at the .001 level—demonstrating that women in party-centered systems spend more on defense. But, do these relationships hold across all values of Women in the Legislature? To answer this question, in Figure 2, we plot the effect of Party Control across all values of the percentage of Women in the Legislature.

We generate predicted values of defense spending and graph the effect of women in the legislature on defense spending for both party-centered systems (those with closed-list proportional representation) and candidate-centered systems (those with majoritarian or mixed rules), holding all other variables in the model at their mean or median.16 Figure 2 supports Hypothesis 4a that women in party-centered systems spend more on defense than women in candidate-centered systems. For example, when women control 5% of the legislature in a party-centered system, they will spend roughly 5% of GDP on defense; in contrast, the same proportion of women in the legislature in candidate-centered systems will spend approximately 2%. However, as the proportion of women in the legislature increases, the gap between party-centered and candidate-centered systems closes—at the 30% level there is no significant difference as the confidence intervals overlap. At low levels of representation, candidate-centered systems appear to be more effective at representing women, but the difference between party- and candidate-centered systems diminishes as women gain greater representation in the legislature.

The steeper slope for party-centered systems depicts that the substantive representation of women is more sensitive to the percentage of women in the legislature in party-centered systems as opposed to candidate-centered ones. Women in candidate-centered systems may have a greater initial influence on defense spending, but as more women enter the legislature in party-centered systems, their ability to affect policy increases at a faster pace. Convergence appears to occur because women face greater barriers as their numbers increase in candidate-centered systems, but also because of the increasing influence of women in party-centered systems.

Do more equitable social attitudes towards women explain why an increase in women’s representation leads to substantive differences in defense policy? To address this concern, we incorporate our women’s rights measures into Model 3. The temporal domain of the equity measures is from 1981 to 2000, which reduces the number of observations by one-third. And while the size of some of the coefficients changes, importantly, none of them change signs. Consistent with the societal norms thesis, Women’s Social Rights is negative and significant; indicating that as women are treated more equally in society, defense spending declines. However, Women’s

15We estimated the models with Wehner’s (2006) measure of executive/legislative budget control as a robustness check and the results did not change.

16We use the same values employed in Figure 1, except that we set the Women Executive measure to the median (zero).
Political Rights is positive and significant; indicating women’s gains in politics do not necessarily limit defense spending. In addition, Minister of Foreign Affairs is now positive and significant, which is congruent with our expectations about women in the executive branch. Most importantly, Model 3 reveals that all of our measures of women in office remain significant and in the expected direction, even after controlling for social equity as an alternative explanation.

Table 2 presents the models of conflict behavior. Model 4 tests Hypotheses 1b and 2b. Both Women in the Legislature and Woman Chief Executive are in the hypothesized direction and are statistically significant. Additionally, Minister of Defense and Minister of Foreign Affairs are significant and positive, meaning that the presence of women in the executive branch influences the conflict behavior of states beyond the chief executive. With the exception of Parliamentary System and Major Power, all of the control measures are significant and signed as expected.

Model 5 of Table 2 examines Hypotheses 3b and 4b. The constituent terms for Women in the Legislature and Woman Chief Executive, as well as the women ministers’ measures are all still significant and in the expected direction, even after including the interaction terms. With respect to our expectation about the proportion of women in the legislature conditioning the hawkish behavior of female executives, the interaction term between Women in the Legislature* Woman Chief Executive is negative and statistically significant as expected. Figure 3 plots the predicted values and demonstrates that, as with defense spending, increases in the percentage of women in the legislature reduce the hawkish behavior of women executives as predicted by Hypothesis 3b. When women control 5% of the legislature, the average conflict score is more than twice as great for female executives versus male executives. However, this difference diminishes as women gain greater representation in the legislature. As further confirmation of Hypothesis 1b, Figure 3 depicts a downward slope for both male and female executives as the proportion of women in the legislature increases.

The positive and statistically significant coefficient for Party Control in both models reveals that party-centered systems are more conflict prone, which is similar to the defense spending model. The interactive term Party Control*Women in the Legislature implies that Party Control does not condition how Women in the Legislature affect conflict behavior. Nevertheless, the negative and significant coefficient for Women in the Legislature shows that increasing women’s representation reduces conflict behavior. As with the last model almost all the control variables are statistically significant and correctly signed.

17We exclude the rights measures from the conflict analysis because we have women’s rights data from 1981 to 2000, and conflict data running from 1970 to 1992. Therefore, including the rights measure would exclude the conflict data prior to 1981 and would reduce the N by half, making inferences more difficult.

18Similar to Figures 1 and 2, we set all the other variables in the model to their mean or median.
The results of our models convey that women face differing expectations and constraints at the executive and legislative level. Compared to their female counterparts in the legislature, female executives occupy more masculinized leadership positions, which may encourage them to be overly hawkish in their foreign policy behavior in an attempt to surmount gender stereotypes that depict women as weak and passive. However, across all of our models, the negative and statistically significant interaction term between Women Chief Executive*Women in the Legislature illustrates that as women gain greater representation in the legislature, gender differences between male and female executives declines.

But might there be an alternative explanation for our results? For instance, perhaps declining threats to security lead to an increase in the proportion of women in the legislature, rather than the other way around? Based on a survey of potential U.S. voters, Lawless (2004) argues that under heightened national security threats, women should have a more difficult time winning elections, as voters prefer candidates with

![Figure 2](image)

**Table 2** The Effects of Women in Politics on Conflict Behavior

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 4</th>
<th>Model 5 Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women in the Legislature</td>
<td>-.007*** (.001)</td>
<td>-.007*** (.001)</td>
</tr>
<tr>
<td>Woman Chief Executive</td>
<td>.279*** (.076)</td>
<td>.382*** (.116)</td>
</tr>
<tr>
<td>Women in Leg. X Woman Chief Exec.</td>
<td></td>
<td>-.008* (.003)</td>
</tr>
<tr>
<td>Party Control</td>
<td>.054*** (.010)</td>
<td>.050*** (.013)</td>
</tr>
<tr>
<td>Women in Leg X Party Control</td>
<td></td>
<td>.000 (.000)</td>
</tr>
<tr>
<td>Partisanship</td>
<td>.003*** (.001)</td>
<td>.003* (.000)</td>
</tr>
<tr>
<td>Parliamentary System</td>
<td>-.036 (.026)</td>
<td>-.048 (.029)</td>
</tr>
<tr>
<td>Minister of Defense</td>
<td>.132*** (.043)</td>
<td>.124*** (.038)</td>
</tr>
<tr>
<td>Minister of Foreign Affairs</td>
<td>.068* (.033)</td>
<td>.056* (.032)</td>
</tr>
<tr>
<td>Opposing Conflict Behavior</td>
<td>.457*** (.042)</td>
<td>.454*** (.042)</td>
</tr>
<tr>
<td>Alliances</td>
<td>-.003*** (.001)</td>
<td>-.003*** (.001)</td>
</tr>
<tr>
<td>Major Power</td>
<td>.216*** (.034)</td>
<td>.194** (.040)</td>
</tr>
<tr>
<td>Capabilities</td>
<td>.149 (.586)</td>
<td>-.121** (.588)</td>
</tr>
<tr>
<td>Proximate Democracies</td>
<td>-.016*** (.004)</td>
<td>-.016*** (.003)</td>
</tr>
<tr>
<td>Constant</td>
<td>.217*** (.027)</td>
<td>.220*** (.027)</td>
</tr>
<tr>
<td>No. of Observations</td>
<td>488</td>
<td>488</td>
</tr>
<tr>
<td>No. of Countries</td>
<td>(22)</td>
<td>(22)</td>
</tr>
<tr>
<td>Chi Squared</td>
<td>1442.21***</td>
<td>1475.51***</td>
</tr>
<tr>
<td>R² (overall)</td>
<td>.76</td>
<td>.76</td>
</tr>
</tbody>
</table>

*Note: *p < 0.05, **p < 0.01, ***p < 0.001 one-tailed test. Panel Corrected Standard Errors in parentheses.*
more masculine qualities. Although this concern is somewhat mitigated by our use of lagged measures in the previous models, we engage this interpretation more directly by examining whether factors tied to foreign policy—like defense spending, war, and the Cold War—affect the number of women in office. Because the data for this test are no longer a continuous time series, we use random-effects regression.

Model 6 in Table 3 presents the results modeling whether the international environment affects women's representation in office. In terms of the security climate, we find that Defense Spending and War do not affect women's representation in legislatures. And while Post-Cold War is positive and significant—indicating that women are more likely to gain legislative access when security threats decline—it is important to note that this period also coincides with greater awareness of women in politics and society, as embodied by the “Year of the Woman” in the United States, and the Fourth World Conference on Women in Beijing internationally. Specific security threats as measured by Defense Spending and War are insignificant in Model 6. As a robustness check, in Model 7, we include our Conflict Behavior measure for which there is data only through 1992. We exclude Post-Cold War because the time span of this model (1981–92) is almost entirely from the Cold War, providing little variation in this measure. And while this shortens the temporal period by 10 years, the results are consistent with Model 6.19 Defense Spending, Conflict Behavior and War are all insignificant in predicting women’s representation. On balance, it is not clear that the security climate within a state affects the ability of women to gain office.

Table 3 The Effects of the National Security Environment on Women's Representation in the Legislature

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 6</th>
<th>Model 7 Including Conflict measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defense Spending</td>
<td>−.172 (.209)</td>
<td>−.109 (.211)</td>
</tr>
<tr>
<td>Conflict Behavior</td>
<td>−1.16 (1.13)</td>
<td></td>
</tr>
<tr>
<td>War</td>
<td>−1.89 (1.15)</td>
<td>−.269 (1.07)</td>
</tr>
<tr>
<td>Political Rights</td>
<td>7.51*** (1.16)</td>
<td>5.62*** (1.19)</td>
</tr>
<tr>
<td>Social Rights</td>
<td>1.28 (.822)</td>
<td>2.44** (.914)</td>
</tr>
<tr>
<td>Gender Quota</td>
<td>1.49 (1.11)</td>
<td>1.19 (1.14)</td>
</tr>
<tr>
<td>Party Control</td>
<td>1.91* (.925)</td>
<td>2.35* (1.10)</td>
</tr>
<tr>
<td>Parliamentary</td>
<td>6.91** (2.60)</td>
<td>6.95* (2.02)</td>
</tr>
<tr>
<td>System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Cold War</td>
<td>3.67*** (.919)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>−11.62*** (3.79)</td>
<td>−10.33** (4.40)</td>
</tr>
<tr>
<td>No. of Observations</td>
<td>129</td>
<td>79</td>
</tr>
<tr>
<td>No. of Countries</td>
<td>(22)</td>
<td>(22)</td>
</tr>
<tr>
<td>Chi Squared</td>
<td>166.97***</td>
<td>57.64***</td>
</tr>
<tr>
<td>R² (overall)</td>
<td>.68</td>
<td>.62</td>
</tr>
</tbody>
</table>

Note: *p < 0.05, **p < 0.01, ***p < 0.001 one-tailed test. Random Effect Regression

Conclusion

Although unanswered questions regarding the linkage between descriptive representation and foreign policy remain, our research constitutes a significant

19In Model 7, the Social Rights variable is significant at the .05 level, whereas in the 20-year span between 1981 and 2000, it was only significant at the .1 level.
Our results reveal that women in government affect the national security policy of democratic states in substantive ways even after controlling for alternative explanations and confounding variables. In addition, by modeling both the gender composition of the legislature and the executive, we paint a more realistic and complete picture of the influence of gender on national security policy. And because we examine multiple dependent variables across multiple countries for multiple years we are confident that the relationships reported in the models are robust.

Our results demonstrate that even after controlling for government partisanship and the rights of women in society, increases in the proportion of women in the legislature decrease defense spending and conflict behavior. At the same time, women in the executive branch, as either the chief executive or related ministers, oversee greater defense spending and increases in conflict behavior than when men hold the same positions. This is consistent with the interpretation that women must still overcome stereotypes of being “weak” in foreign policy. Nevertheless, we find that greater representation of women in the legislature moderates female executives’ more hawkish behavior.20

By specifying how the institutional context and level of office mediate women’s policy behavior, one important contribution of our research is helping to untangle the causal relationship between descriptive and substantive representation. At the legislative level, our results emphasize that the degree of party control in political systems affects the ability of women to influence policy. In candidate-centered systems, the proportion of women in the legislature reduces defense spending more than the same percentage of women in party-centered systems. Legislators in candidate-centered systems have alternative means of securing their legislative seats and are less beholden to their party for office, therefore they have more latitude to substantively represent women. However, the difference between party- and candidate-centered systems declines as more women gain office.

Our results imply that at low levels of representation, candidate-centered systems might be more effective at representing women, which stands in contrast to Sawer (1998), who argues that more party-oriented systems should be better able to ensure women’s substantive representation. Finally, the results highlight the importance of the electoral context beyond whether the electoral rules facilitate women’s access to office.

Of course, this raises questions about how women in the legislature affect policy as their numbers increase. One possible answer is that as women gain office, they are more likely to act as veto players. While we cannot test this hypothesis in this paper, future research that uses roll-call voting cross-nationally may help answer when women vote together as a group, and how electoral rules affect their ability to coordinate. In any case, the difference in the substantive influence of women in party- and candidate-centered systems may help explain why there does not seem to be a magical “critical mass” percentage of women required to alter policy outcomes.21 By recognizing the variation that exists between parties’ and electorates’ control of representatives, we perhaps have identified one reason why a number does not exist.

One implication of our research for modeling the relationship between descriptive and substantive representation is for scholars to incorporate comparative work on legislative behavior (see Kittilson 2008). For example, understanding when legislators are likely to vote against their party or district (Carey 2007), or alter the policy status quo away from their principals (Ström, Müller and Bergman 2003), may help explain when legislators can act on behalf of electoral principals versus descriptive groups.

In terms of modeling international relations, because we find that the variables for women’s representation in the legislature and woman chief executive are significant in all the models—even after controlling for partisanship—the formal representation relationship so often assumed in the international relations scholarship might not be the only way that agents connect to principals to influence policy. A central premise of this work is that elected officials have an incentive to be faithful to the policy preferences of their constituencies through the reelection incentive (Bueno de Mesquita et al. 2003). This

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20The confidence interval around female executives is wider than that for males in Figures 1 and 3, reflecting the relative dearth of women executives in the data (eight). Despite this increased uncertainty, the confidence intervals do not overlap at lower levels of women’s representation in the legislature (which is what we would expect, given Hypotheses 3a and 3b), suggesting that female executives are significantly different from men. Even though there are relatively few women defense ministers (five) and foreign ministers (nine) in our data, the significance of these variables in several of our models highlights that future research should examine women in key cabinet posts.

21For detailed discussions of critical mass arguments, see Beckwith (2007).
framework leads to the expectation that descriptive characteristics—such as race and gender—should have minimal effects on the representation elected officials provide to their constituents. However, our results point out that legislators represent groups beyond their immediate principals. This implies that rather than just focusing on the incentives and constraints created by institutions for politicians, we need to also take a closer look at descriptive representation and foreign policy.

And while we have evidence about how gender influences national security, we need to more fully investigate a variety of related questions. For example, is the decline in defense spending the result of women’s aversion to defense spending, women legislators substituting other policies for defense, or do increases in women’s representation in legislatures signal a more general withdrawal from international politics? We hope our analysis inspires future research aimed at addressing some of these questions.

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References


Michael T. Koch is Assistant Professor of Political Science at Texas A&M University, College Station, TX, 77843.

Sarah A. Fulton is Assistant Professor of Political Science at Texas A&M University, College Station, TX, 77843.