

Politics as a Man's Game?
Women's Representation, Gender Stereotypes, and Cognitive Engagement in Politics

By

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To Nanda and Chico.

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CHAPTER 1

Introduction

The increase in women's participation in governments and the work force over the last twenty years is a worldwide phenomenon with potentially crucial implications for our understanding of politics. Yet even with this growth, women's underrepresentation in politics and society is a persistent fact. From the perspective of a scholar in comparative politics, these realities provide a new set of research questions and agendas. The increasing presence of women in positions of power around the world could make individuals and societies as a whole reconsider how they think about gender relations and the places of men and women in politics. At the same time, room for improvement in achieving gender equity raises questions about entrenched and often less visible barriers to parity.

Moreover, the rise of gender and women's representation as important topics in politics around the globe provides an opportunity for building an eminently multidisciplinary and comparative research program. Over the years, studies of public opinion and political psychology focused on the American case have provided several theoretical insights and empirical findings about the role of gender stereotypes in shaping how elites and citizens think and behave politically. Meanwhile, studies in comparative politics explore the impact of institutions on how individuals think and vote, and as a consequence, on how institutions and voters interact to affect the chances of different groups of getting elected to office. By looking at the impact of gender

stereotypes in political outcomes across different contexts, this dissertation lies at the intersection between political psychology, public opinion, and the field of comparative politics.

The dissertation starts with the premise that individuals' views on gender are crucial for the study of democracy, and that we must understand the structure, dynamics, and consequences of those beliefs and attitudes in order to grasp changes in the political process around the world. Individuals' beliefs and attitudes about gender are relevant not only in and of themselves, in the sense that they may or may not reflect egalitarian views that are at the core of democratic values, but also because they affect political preferences, cognitive engagement, and voting behavior.

What lies ahead is a collection of three research papers examining the effect of individuals' beliefs and attitudes about gender and politics on public opinion and voting behavior. These three separate chapters focus on different aspects of gender attitudes and how they matter for understanding politics more generally. They use different types of data, methods, and look at different countries in order to approach questions related to political preferences, cognitive engagement, and voting behavior. Nevertheless, the message they convey is the same: that in order to understand public opinion and elections in a world where women increasingly occupy positions of power one must theorize and investigate what people think about gender and how that affects the choices they make.

In the first chapter I investigate whether different beliefs about men and women in politics and society have different psychological bases and properties. I argue that gender attitudes stem from more fundamental beliefs about gender relations in society, namely hostile and benevolent sexism. Those foundational dimensions underlie the structure of specific attitudes about men and women in politics and society. I use original survey data from Brazil in order to

show how measures of hostile and benevolent sexism relate to different attitudes about gender groups in politics and society. Then I examine how those types of sexism affect attitudes about gender issues, such as abortion, gender quotas, and job discrimination. I show how those types of sexism affect presidential approval through different mechanisms. The findings suggest that not all gender attitudes in politics are the same, and that understanding the cognitive and attitudinal structure of those attitudes has crucial implications for the study of how those views affect public opinion.

What explains the pervasive gender gap in political knowledge found by surveys across different contexts? In the second chapter I argue that female political representation affects the levels of political knowledge expressed by men and women, and ultimately the gender gap. I argue that the underrepresentation of women in politics makes negative gender stereotypes salient, and these in turn affect how much cognitive effort individuals put into thinking about politics. Moreover, I argue that surveys themselves are often responsible for enhancing the effect of those considerations. I analyze cross-national survey data from 120 countries and show that the gap in knowledge decreases as the level of female representation increases across countries. Then, I manipulate the gender composition of feeling thermometer batteries in a survey experiment with American respondents in order to show that priming considerations about female representation impacts respondents' performance on knowledge questions. The findings point to an explanation for why surveys often reveal gender differences in political knowledge and a causal mechanism connecting women's representation and public opinion.

Last, the third chapter proposes a theory that accounts for how electoral rules moderate the effect of gender stereotypes on voting behavior. I argue that the effect of gender stereotypes

on vote choice follows a pattern known as aversive sexism, which denotes that voters will discriminate when the choice structure does not make it clear that they are engaging in discriminatory behavior. More specifically, voters will be less likely to vote for women when they can substitute ideologically close female candidates with similar male co-partisans. I first look at cross-national data to show that women's parliamentary representation tends to be lower in electoral systems where several similar co-partisans compete for the same seats. Then I focus on the Brazilian case in order to show why, contrary to conventional wisdom on the topic, Brazilian voters are more likely to elect females running in the first-past-the-post races for the Senate than in proportional races for the Chamber of Deputies. I use electoral survey data and a ballot experiment with Brazilian subjects to show how those behavioral patterns harm the electoral prospects of female candidates.

In the final chapter, I provide an overview of the theories, findings and implications from each of the empirical chapters. The chapter also discusses the overall contribution of the dissertation, as well as some future steps in this research agenda.

CHAPTER 2

The Structure of Gender Attitudes in Politics: The Role of Ambivalent Sexism

A growing body of research in the social sciences suggests that beliefs and attitudes about men and women in politics are not only widespread among ordinary citizens and elites, but also affect politically relevant outcomes, such as the dynamics of electoral campaigns and media coverage (Fridkin, 1996; Herrnson et al., 2003; Murray, 2010), as well as the evaluations and electoral chances of male and female candidates running for office (Huddy and Terkildsen, 1993b,a; Matland, 1994; Sanbonmatsu, 2002; Fox and Lawless, 2011).

The literature often refers to different types of beliefs and opinions about men and women in politics by the broad label “gender stereotypes” or “gender attitudes”. Norris and Inglehart (2001) and more recently Morgan and Buice (2013), for example, use cross-national data to examine levels of support for the view that men make better political leaders than women, and how that perspective might constitute a barrier for gender political equality. In a different vein, other studies investigate the existence of beliefs about how men and women would hold expertise or competency in different issues or policy areas (Alexander and Andersen, 1993; Huddy and Terkildsen, 1993b; Sanbonmatsu, 2002; Dolan, 2010). While the public tends to endorse the view that men are better suited to handle issues such as defense and budget, women are often seen as better suited for health and education, for instance. Another body of research focuses on the view according to which women are less corrupt politicians than men (Barnes and

Beaulieu, 2014; Watson and Moreland, 2014), and how that could affect citizens' perceptions about the political process.

Although those different sets of beliefs generally refer to the roles and styles of men and women in politics, they seem to carry different content and form in some crucial aspects. While some stereotypes express direct and clear opposition to females occupying higher political positions or even participating in the political process, others stereotypes express more nuanced views about gender complementarity that can foster support for women as leaders under some circumstances. These differences suggest that there might be distinct psychological bases for specific beliefs about men and women in politics and society. Even though part of the political science literature on the topic identifies conceptual distinctions within the set of beliefs that is often labeled as "gender attitudes" or "gender stereotypes" (Murray, 2010), little systematic effort has been made in order to conceptualize and explain the psychological structure of those gender attitudes among the public.

This chapter argues that different gender attitudes in politics and society stem from more fundamental beliefs about gender relations. I propose that hostile and benevolent sexism (Glick and Fiske, 1997, 2001), respectively, underlie the ambivalent structure of specific beliefs about men and women in politics. I argue that understanding the cognitive and attitudinal consequences of this conceptual structure has important implications for the study of how the widespread endorsement for those views might impact gender political equality and political preferences more generally. I use original public opinion data from Brazil to show how hostile and benevolent sexism underlie the endorsements for different beliefs about women and men in politics and society. I then show how those two types of sexist orientations relate to views about

gender issues. Finally, the chapter looks at presidential approval in Brazil in order to show the different mechanisms by which hostile and benevolent sexism affect the approval ratings of female incumbents.

Gender Attitudes in Politics

Attitudes towards gender roles, traits, relations, and equality in society are among the most deeply held types of individual beliefs. These attitudes are grounded on more basic ideas about the gender groups, also known as stereotypes. Stereotypes consist of more or less structured expectations about certain groups or categories of individuals (Fiske and Neuberg, 1990). The main cognitive function of stereotypes is to help individuals in processing information about social groups more efficiently (Fridkin, 1996). In face of the task of forming impressions about others, people may rely on such stereotypes instead of processing the new information available about those individuals. Also, people tend to be more likely to rely on stereotypes when information is scarce or harder to process (Rahn, 1993). Since gender and race are social and physical characteristics that can be more easily identifiable and labeled, people tend to hold more organized beliefs and attitudes about racial and gender groups. In this sense, because individuals tend to rely on minimum amounts of information when dealing with political events, while also taking into account the salience of gender as a social category, gender beliefs and attitudes become particularly relevant in the explanation of how individuals make up their minds in politics.

Most citizens internalize the cognitive structures of beliefs about men and women in society very early in life. Studies in social psychology show that family environments, mainly through parental expectations about male and female children, have substantial impact on children's self-perceptions and performance in math tests, for instance (Jacobs, 1991; Pomerleau et al., 1990). Also, similar expectations held by teachers have been shown to affect their students (Tiedemann, 2000). Television commercials and shows also depict men and women in different social roles, which affect how children learn how to stereotype gender relationships early in life. With regard to the ways in which adults learn to internalize and reproduce those stereotypes, media coverage of campaigns has been shown to cover female candidates with a focus on issues considered to be less masculine, even when such candidates tend to campaign on the exact same issues as their male opponents (Fridkin, 1996; Dolan, 2005).

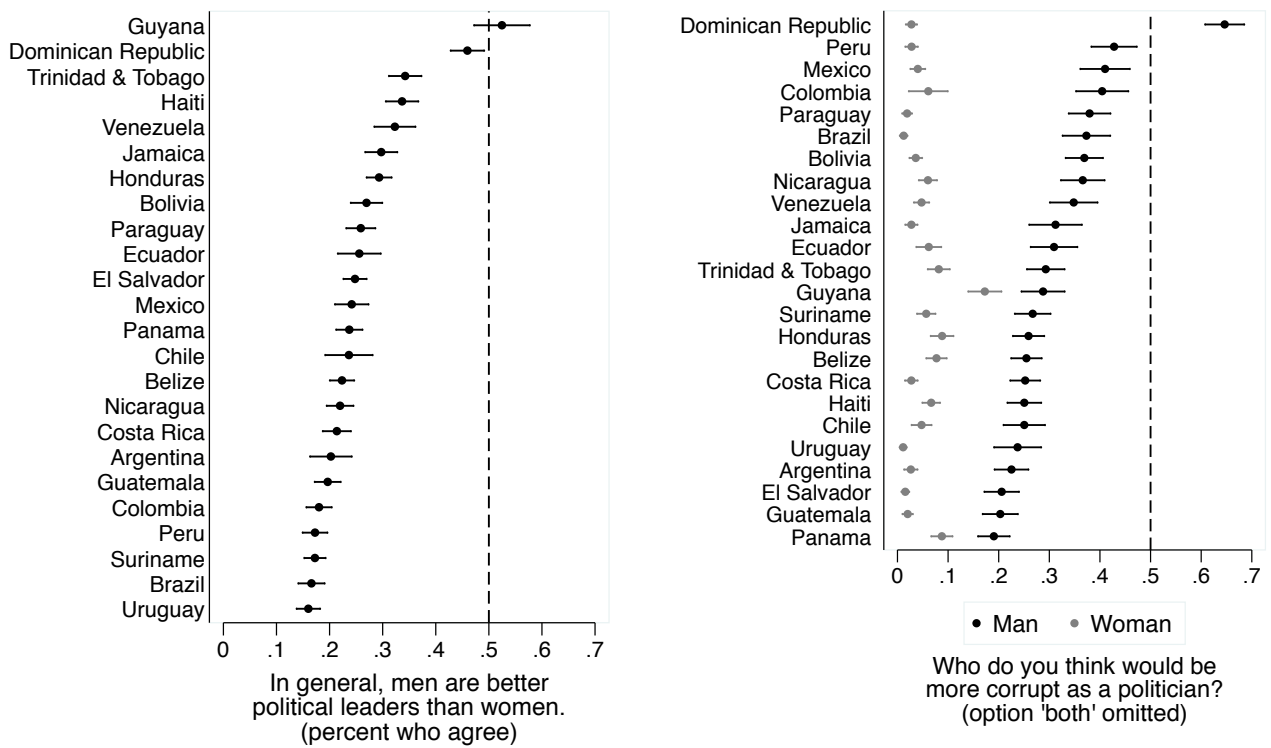
One of the most basic and (typically) derogatory views about women in politics has to do with their capacities to be political leaders. The World Values Survey asked respondents of the 2005 and 2006 waves whether they agreed that men make better political leaders than women. Among the 56 countries surveyed, the average percentage of respondents agreeing with the statement varied from 8% in Sweden and 10% in Afghanistan to 90% in Iraq and 92% in Egypt. The average level of endorsement for such statement across the 56 countries was approximately 42%. Other common stereotypes focus on specific issues and policy areas where each group would be more qualified. Studies focusing on the U.S. show that the public considers female politicians more competent on issues such as education and social security, while male politicians are seen as better in handling foreign affairs and crime (Sanbonmatsu, 2002; Dolan

and Sanbonmatsu, 2008). These studies also show that people tend to endorse the idea that men are better emotionally suited for politics.

As an illustration of the widespread support for different types of gender stereotypes in politics, and how much variation can be found cross-nationally with regard to those attitudes, Figure 1 plots the endorsement for some of those ideas using the 2012 of the AmericasBarometer surveys. The left-side graph shows the proportion of respondents who agree with the statement that “men are better political leaders than women.” The proportion ranges from about 15% of respondents in Uruguay to more than 50% of respondents in Guyana. The right-side graph shows the distribution of responses to the question on whether respondents thought a man or a woman would be more corrupt as a politician (the option “both” was not offered to respondents by the interviewers, but was accepted as an answer). In all countries, respondents were more likely to say a man would be more corrupt than a woman.¹

¹ The estimates in the graphs weight observations and standard errors taking into account the sample design of the AmericasBarometer surveys.

Figure 1. Gender Attitudes Across Latin America and the Caribbean, 2012



Data: AmericasBarometer Surveys, 2012.

While Figure 1 displays the distribution of survey questions on endorsement for two specific gender attitudes in politics, the literature on those views provides an extensive and detailed mapping of what people think about men and women in politics. Nevertheless, there are

still a variety of aspects that those studies have not yet fully explored. One of them has to do with the possible separation of those attitudes into different conceptual dimensions. While it is true that stereotypes generally consist on the reliance on simplified judgments about groups, the belief that women are less competent than men to perform leadership roles in politics has different psychological components than ideas about issue competency and leadership styles and traits. While the former involves an explicit derogatory account of women's competency and is negative in affect, the latter can involve positive feelings and do not explicitly suggest that women should not be political leaders.

In this sense, there seems to be at least two separate conceptual dimensions with regard to the attitudes about men and women in politics. Views about general competence, such as the one displayed on the left-side graph in Figure 1, are derogatory of women in politics and try to justify political inequality as a result of women's supposed deficiencies as political beings. Stereotypes about leadership roles, traits, and styles, such as the belief that men are more corrupt as politicians than women, constitute beliefs and prescriptions about how women and men have different modes of action and thinking in politics. The latter type of belief is not necessarily negative in affect, and usually takes the form of a belief on the complementarity of the groups in politics.

The main implication of the conceptual distinction proposed above is that while beliefs about general competency and denial of gender inequalities are directly related to citizens' biases against the idea of women participating and taking leadership positions in politics, beliefs about leadership roles and styles are not directly associated to such exclusionary orientations. The former are related to stronger and more hostile views about women in politics. They are the

underlying beliefs that structure more explicit forms of political discrimination against women. They also form the underlying considerations that individuals from discriminated groups take into account when they suffer the influence of stereotype threat (Steele et al., 2002; Davis and Silver, 2003; McGlone et al., 2006), which refers to the fact that individuals from discriminated groups under- perform in tasks by having to cope with beliefs that their group is worse at that task. Moreover, those derogatory views may not only affect how ordinary citizens think about politics, but also the extent to which candidates evaluate their own chances and capabilities for running for office. Fox and Lawless (2011) show strong evidence that female candidates tend to perceive themselves as less qualified to seek office than their male counterparts, even when they comparable political credentials, backgrounds, and experience than male counterparts.

Beliefs about leadership roles and styles are not necessarily exclusionary, but are not necessarily positive either. On the one hand, beliefs that female leaders are more communal and less corrupt may give female politicians advantages in elections and in voters' evaluations (Barnes and Beaulieu, 2014). However, those advantages may have a cost for female candidates and politicians, since they might experience stronger backlash when voters perceive them as deviating from that seemingly positive stereotype (Costrich et al., 1975; Rudman and Glick, 2001). Still with respect to leadership styles, Johnson et al. (2008) show that, in order for women to be perceived as effective leaders in organizations, they need to demonstrate both sensitivity and strength, while male leaders usually only have to demonstrate strength in order to reach the same levels of evaluation. Regarding issue competency, while women tend to be perceived as better in some issues and policy areas, higher levels of political office are usually viewed by voters as associated with issues and policy areas in which men are perceived are more

competent. (Huddy and Terkildsen, 1993b). All in all, the view of women and men as playing distinct and complementary roles in politics serves the goal of increasing system justification, while maintaining more basic structures of male dominance (Jost and Kay, 2005).

In essence, this proposition is analogous to Glick and Fiske's (1997; 2001) distinction between hostile and benevolent sexism. The authors argue that one of the defining aspects of gender relations is that they are marked simultaneously by prejudice and closeness (Glick and Fiske, 2001). Even though societies are historically characterized by patriarchal control of women, men often subscribe to benevolent views of women. According to Glick and Fiske, this is due to the intimate connections between men and women, which gives gender relations a specificity that is crucial for the understanding of sexism. By considering such specificity, Glick and Fiske propose that sexism - the sentiment of hostility towards women and the support for the maintenance of traditional gender roles in society - is fundamentally ambivalent (1997, 120). The authors then proceed to define two dimensions of sexism. The first, called hostile sexism, corresponds to earlier definitions of sexism, referring to the set of derogatory views of women and the justification of traditional gender roles. Benevolent sexism, on the other hand, refers to the recognition of men's dependence on women, subtle justifications for male dominance, and also to the idea that the groups are complementary.

According to the ambivalent sexism theory (Glick and Fiske, 1997, 2001), because gender relations are marked simultaneously by prejudice and closeness, individuals tend to hold views about gender that can either take on more hostile and negative forms (hostile sexism), or more subtle forms (benevolent sexism). Moreover, those beliefs and attitudes focus on the relationship between women and men in society more generally. The existence of this more

fundamental conceptual distinction in the psychology of gender relations suggests the possibility of a corresponding structure in the conceptualization of attitudes about men and women in politics and society. This chapter proposes that this conceptual distinction between hostile and benevolent types of sexism underlies the structure of those attitudes about men and women in politics and society. While exclusionary and derogatory beliefs about women in politics are manifestations of hostile sexism, more nuanced beliefs about issue competency, leaderships traits, and honesty originate in benevolent sexism. These connections suggest that gender attitudes in politics may be grounded in deeper psychological orientations about gender groups.

Data and Methods

In order to test the claim that different types of gender attitudes are affected by hostile and benevolent sexism, I included original survey questions about gender attitudes in the 2014 round of the AmericasBarometer survey in Brazil. The survey consists of face-to-face interviews with a nationally representative sample of adult respondents.² Brazil offers a particularly relevant case for the study of gender attitudes in politics. The country elected its first female president (Dilma Rousseff) in 2010, but at the same time is one of the countries with the lowest levels of female representation in parliament across Latin America and the Caribbean, with less 10% of females in its lower house.³

² Data and documentation from the surveys can be found at: <http://www.vanderbilt.edu/lapop/>.

³ Data from the Inter-Parliamentary Union Website (www.ipu.org).

The survey included several items on attitudes towards men and women in society and politics. The items touch different aspects of gender traits, competencies, and relations in society and politics. Three are related to what is called here as general competency, referring to beliefs that men make better politicians and automobile drivers. Two items refer to the idea of denial of gender inequality, and refer to beliefs that gender discrimination is not a problem and that women are too demanding in pushing for equal rights. Two items are related to competence on particular issues or policy areas, following some of the scholarship on the topic (Sanbonmatsu, 2002; Dolan and Sanbonmatsu, 2008). These items refer to ideas that men would be better at handling crime and women would be better at handling education as politicians. Finally, four remaining items can be group as related to “traits and paternalism.” They refer to beliefs that women are more “pure” (honest, compassionate), more emotional as political beings, and that they should be rescued first in case of a disaster. The measures of gender attitudes in Brazil are shown in Table 1.⁴

⁴ The questions on issue/policy competency and women as more honest are multiple-choice items with the options “men”, “women” or “both” (not read to respondents but accepted). The remaining items use 7 or 4-point agree-disagree scales.

Table 1. Descriptive Statistics for Gender Attitudes

Variable	Mean	Standard Deviation	Min.	Max.	n
<u>General competency</u>					
In general, men are better political leaders than women	2.08	0.79	1	4	1,469
Women are not as good automobile drivers as men	3.36	2.17	1	7	1,491
<u>Denial of inequality</u>					
Discrimination against women is no longer a problem in Brazil	3.72	2.11	1	7	1,489
Women are getting too demanding in their push for equal rights	4.45	2.21	1	7	1,492
<u>Issue competency</u>					
Men are better at handling crime as politicians	0.45	0.5	0	1	1,465
Women are better at handling education as politicians	0.73	0.44	0	1	1,485
<u>Traits and paternalism</u>					
Women tend to use more emotion than reason when discussing politics	4.28	1.9	1	7	1,486
Women, compared to men, tend to be sensitive and compassionate	5.7	1.61	1	7	1,497
Men are more corrupt as politicians	0.7	0.46	0	1	1,454
In a disaster, women ought to be rescued before men	5.08	1.95	1	7	1,493

Data: AmericasBarometer Surveys, 2014.

The main proposition of the chapter is that the two dimensions of ambivalent sexism, namely hostile and benevolent sexism, affect individuals' endorsement for different views about men and women in society and politics. Therefore, gender attitudes in politics have an ambivalent foundation. Hostile sexism relates to gender attitudes about general political competence, such as the belief that men make better political leaders than women, as well as to

the denial of the existence of gender inequality. On the other hand, benevolent sexism relates to views about women as more honest, passionate, and emotional. Also, the belief that women should be somehow protected by men is also a manifestation of benevolent sexism, since it involves positive affect. Beliefs about issue and policy competence carry ambiguous meanings. Hostile sexists are more likely to approach the question of women's competence as political actors in specific issues as a simple matter of general competence. In this case, hostile sexism makes individuals more likely to endorse the view that men are more competent than women, regardless of the issue or policy area. Benevolent sexism makes individuals more likely to see gender relations as a matter of complementarity, and therefore should promote endorsement for the view that women are better on certain issues and policies, while men are better in others.

The Structure and Correlates of Gender Attitudes

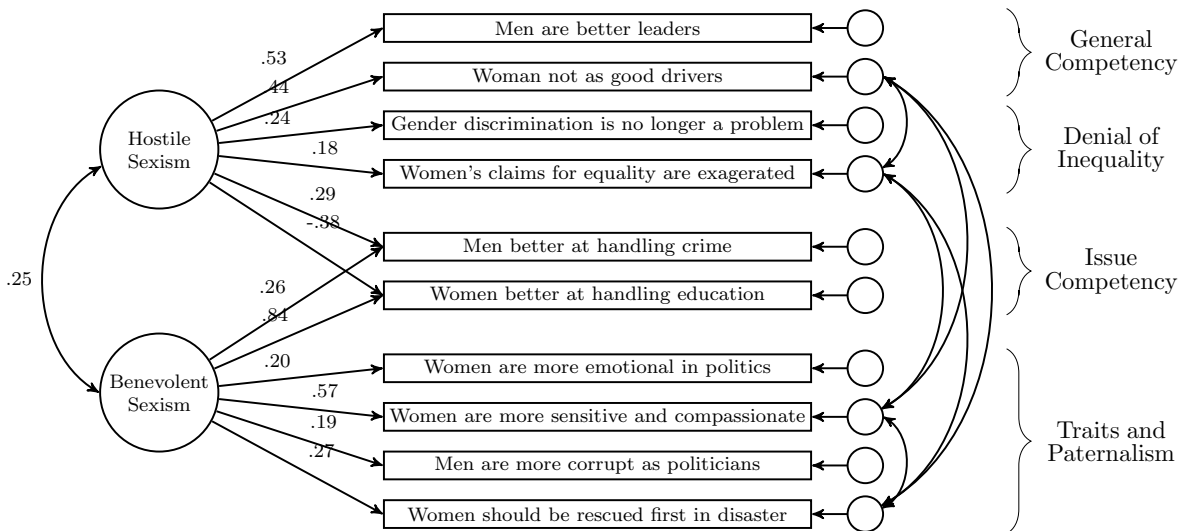
In order to investigate the hypothesized underlying structure of gender attitudes and assess the validity of hostile and benevolent sexism as conceptual dimensions, this section uses structural equation models (SEM) to look at relationships between the variables described in the previous section.⁵

In the hypothesized structure, beliefs about men as more competent leaders and citizens (general competence) are manifestations of hostile sexism, as well as views that deny the existence of gender inequality (denial of inequality). Beliefs about women as more honest,

⁵ All models presented take into account the complex sample design of the AmericasBarometer surveys in the two countries.

passionate, and emotional (traits and paternalism) are manifestations of benevolent sexism. Regarding issue competence, individuals with high levels of hostile sexism will likely see specific issues as simply reflecting general competence, and therefore will endorse the view that men are better across the board. For benevolent sexists, men and women are better at different issues due to the idea gender complementarity. Figure 2 below displays the results of the analyses that test whether hostile and benevolent sexism are the underlying dimensions of gender attitudes in politics and society. Figures 3 and 4 display the model results by gender.⁶

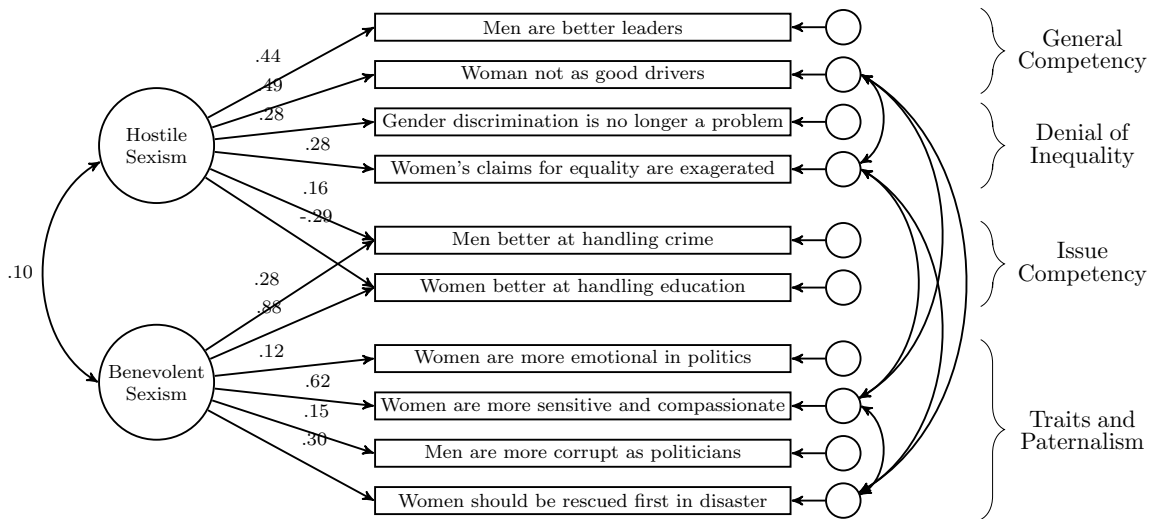
Figure 2. Confirmatory Factor Analysis of Gender Attitudes



Data: AmericasBarometer Surveys, 2014.

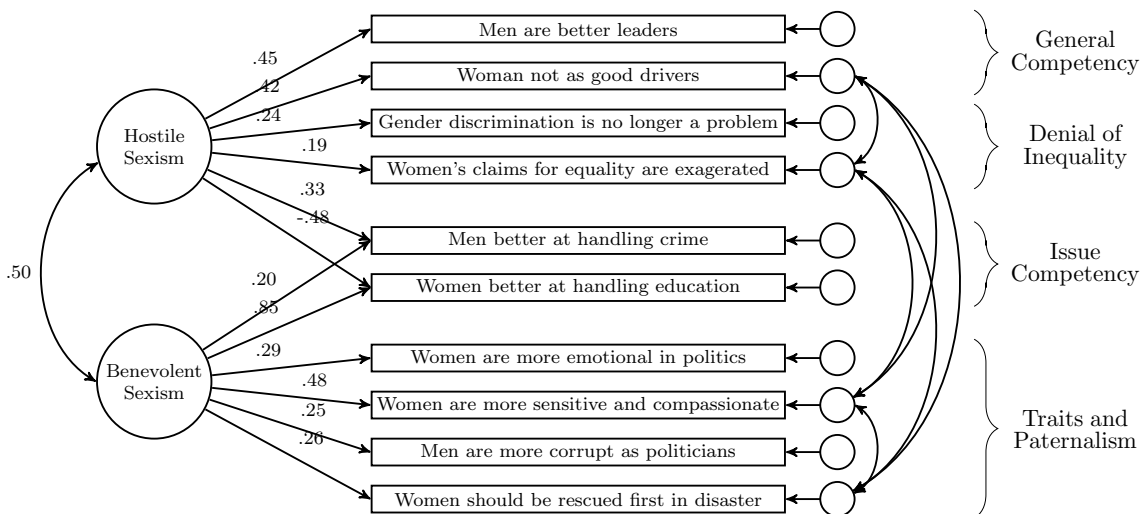
⁶ Figures 2, 3, and 4 display the standardized coefficients.

Figure 3. Confirmatory Factor Analysis of Gender Attitudes among Female Respondents



Data: AmericasBarometer Surveys, 2014.

Figure 4. Confirmatory Factor Analysis of Gender Attitudes among Male Respondents



Data: AmericasBarometer Surveys, 2014.

The factor loadings in Figure 2 corroborate the expectations about the structure of hostile and benevolent sexism. As expected, hostile sexism is based in views on general competence and denial of inequality, while attitudes about traits and paternalism are affected by benevolent sexism. Both dimensions reflect views on issue/policy competency, but in different ways. Hostile sexism increases endorsement for the idea that men are better at handling crime, while decreases endorsement for women being better at handling education. These results suggest that hostile sexists do in fact approach views on issue and policy competence as a matter of competence more generally, meaning that they will be likely to see men as more capable regardless of the issue or policy at hand. Benevolent sexists see men and women as specialized in different issues or policy areas. The factor loadings show that benevolent sexism increases endorsement for the idea of men as better at handling crime, while also increasing endorsement for the idea that women are better at handling education. Hostile and benevolent sexism are correlated at .25. The Figures 3 and 4 present very similar underlying structures for female and male respondents, although some differences can be observed between the two groups. The most important one is that hostile and benevolent sexism are more strongly correlated among male respondents (.50 against .10 among females).⁷

The next step is to assess the validity of the proposed underlying structure for the beliefs and attitudes about men and women in politics and society. One strategy to test validity of the two constructs is to evaluate how each measure correlates with variables that are expected to have theoretically meaningful connections to the concepts of hostile and benevolent sexism.

⁷ The root mean square error of approximation (RMSEA) for the measurement model is 0.06 (C.I. from .05 and .07) for the full sample, 0.05 (C.I. from .04 and .06) for females, and 0.07 (C.I. from .05 and .08). Those measurement models have better model fit than single-factor models using the same variables. Moreover, when a single-factor measurement models are tested, not all factor loadings are statistically significant.

Although the literature on the determinants of hostile and benevolent sexism is still limited, a few pieces suggest that there are factors systematically associated with the expression and endorsement for different beliefs about men and women in politics and society.

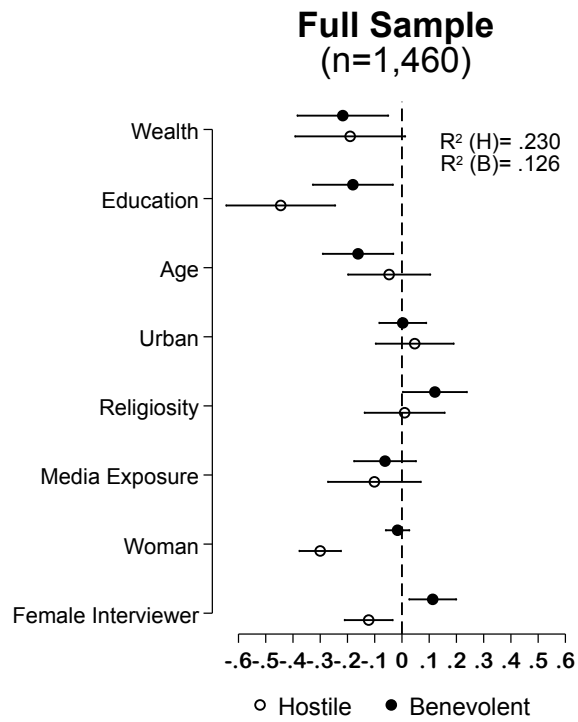
Studies arguing that intergroup dominance orientation would be at the basis of sexist attitudes (Sibley et al., 2007) suggest that men should score higher values on hostile sexism. The effect of gender on benevolent sexism would not be so clear, since those views do not explicitly encompass the idea of dominance. Likewise, studies on the effects of interviewers' sex on gender attitudes also suggest that respondents would become less likely to openly endorse sexist views when faced by a female interviewer (Kane and Macaulay, 1993; Huddy et al., 1997), and that effect would not differ between male and female respondents. Even though there are no clear expectations for benevolent sexism based on the literature, one could hypothesize that the presence of female interviewer increases endorsement for benevolent sexism, since those views often involve positive feelings that respondents might want to convey in the interaction. The study by Glick et al. (2002) and Meghan and Busso (2005) suggest that Christian religiosity is associated with benevolent sexism rather than hostile sexism. Religious texts prescribe traditional gender roles for men and women, and endorse paternalism and complementary gender differentiation. Although there are biblical passages that could produce a positive effect of Christian Religiosity on hostile sexism, religious institutions in modern societies do not overtly endorse those views. Finally, media exposure can also affect how people see men and women in politics and society. Studies show that, although modern media tends to reject derogatory stereotypes towards women, it also tends to portray men and women in ways that reinforce traditional gender roles (Natalie J. MacKay and Covell, 1997; O'Bryant and Corder-Bolz, 1978;

Browne, 1998). In this sense, media exposure in a country like Brazil should decrease support for hostile sexism and increase support for benevolent sexism.

Figures 5 below shows the results from structural equations regressing the factors for hostile and benevolent sexism presented above against variables related to socioeconomic status (wealth, education, and urban residency), age, religiosity, media exposure, respondent's gender, and interviewer's gender.⁸ Figure 6 displays the same model examined for female and male respondents separately.

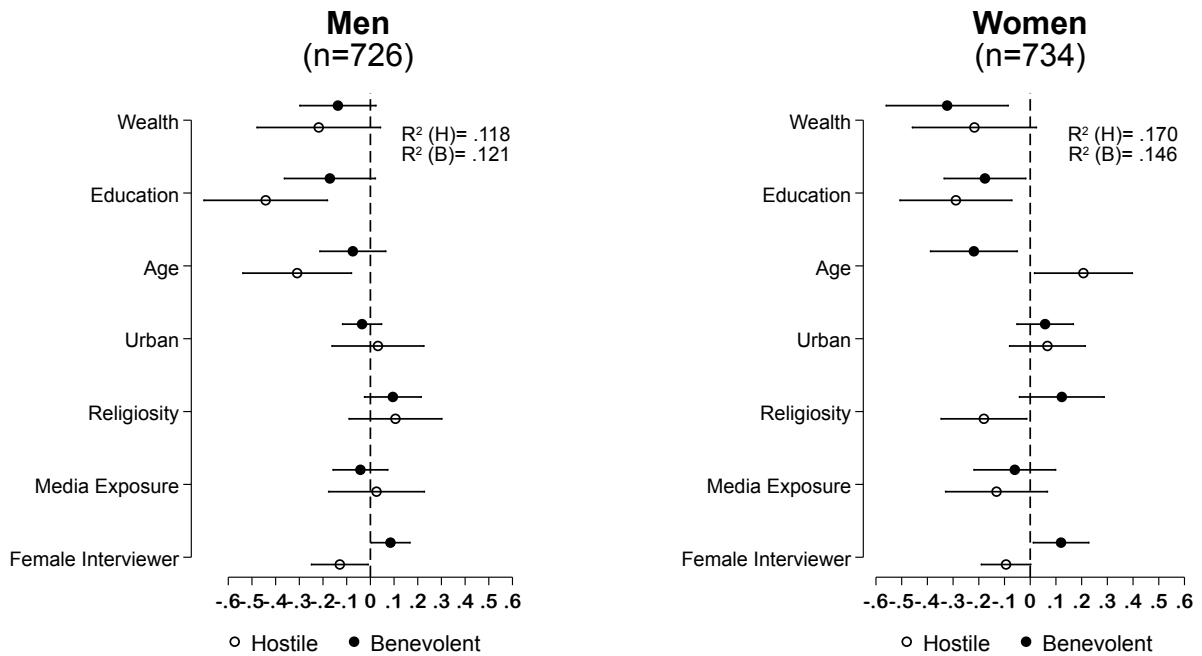
⁸ The wealth measure is based on factor loadings based on a battery of household assets in the questionnaire (Córdova, 2008). Education and age are measured in years. Binary indicators are used for urban residency, gender, and interviewer's gender. Media exposure is based on the question: "About how often do you pay attention to the news, whether on TV, the radio, newspapers or the internet? Daily, A few times a week, a few times a month, rarely, never." Religiosity comes from the question: "Could you please tell me how important is religion in your life? Very important, rather important, not very important, not at all important."

Figure 5. Correlates of Hostile and Benevolent Sexism (SEM Estimates)



Data: AmericasBarometer Surveys, 2014.

**Figure 6. Correlates of Hostile and Benevolent Sexism for Male and Female Respondents
(SEM Estimates)**



Data: AmericasBarometer Surveys, 2014.

The results show that socioeconomic variables such as wealth and education decrease the endorsement for both hostile and benevolent sexism. Even though the literature on the topic does not clearly hypothesize about the relationship between socioeconomic status and ambivalent sexism, the results from the model suggest that wealthier and more educated respondents are more socialized into more modern and egalitarian values. Those effects are consistent for male and female respondents. The relationship between age and ambivalent sexism seems to be nuanced. Overall, older respondents tend to have lower levels of benevolent sexism, and no

association is observed for hostile sexism. However, substantial differences appear when one looks at men and women separately. First, the negative effect of age on benevolent sexism is primarily driven by females. Second, while age tends to increase hostile sexism among women, it tends to do the opposite among men. Moreover, female respondents tend to score lower values in hostile sexism than male ones, and no difference is observed with regard to benevolent sexism. As expected, religiosity has no effect on hostile sexism and a positive overall effect on benevolent sexism. Among female respondents, religiosity has a negative effect on hostile sexism. Media exposure is not associated to either hostile or benevolent sexism in Brazil. Finally, the gender of the interviewer has both expected relationships with hostile (negative) and benevolent (negative) sexism, and these results are gender invariant.

All in all, the models display clear consistencies with regard to the factors associated with hostile and benevolent sexism, not only for the full sample, but also between male and female respondents. The effects of socioeconomic, gender, interviewer's gender, and religiosity corroborate the expectations from the literature. A few gender differences are observed, such as the effects of age and religiosity, but they do not deviate dramatically from the expectations. Those regularities speak to the validity of the measurement structure proposed here for the sample in Brazil.

Ambivalent Sexism and Women's Issues

The distinction between hostile and benevolent sexism as underlying dimensions of gender attitudes suggest more than just a conceptual mapping of different beliefs and attitudes about men and women. Sexism, as expressed either in hostile or benevolent versions, reflects types of psychological orientations that drive one of the most fundamental intergroup relations among human beings. However, the specific nature of gender relations, marked simultaneously by prejudice and closeness, makes the relationship between sexism and opinions a more nuanced one. With regard to opinions about policies that have gendered implications, or women's issues, not all sexist beliefs will have the same effects on how individuals make up their minds about those issues.

The relationship between sexism and opinions on gendered issues does not follow the same patterns as other types of in-group versus out-group views. For instance, Kinder and Kam (2009) show that ethnocentrism - a propensity to conceive society as divided between in-groups and out-groups - does not have clear relationships with Americans' opinions on abortion, employment discrimination, affirmative action, among others. The authors attribute the findings precisely to the intimate relationships between the in-group and out-group in the realm of gender. In this sense, the distinction between benevolent and hostile sexism helps to parse out the ambivalent nature of gender relations.

At the core of that distinction between hostile and benevolent sexism lies the derogatory, competitive, and negative components of the former relative to the latter. Questions about women's issues, especially the ones related to the place of women in politics and society, touch

those specific components and do not speak directly to the more subtle nature of benevolent sexism. Therefore, endorsement for policies that advance women's positions in society and politics and tackle gender discrimination should be negatively affected by hostile rather than benevolent sexism. Distinguishing between those two types of orientations in gender relations helps us better understand the effect of sexism on opinions about gender-relevant policies.

In order to test the proposition outlined above, this section looks at the effects of hostile and benevolent sexism on two opinions on women's issues: support for gender quotas and for employment discrimination when there are not enough jobs. Hostile sexism is expected to have a negative effect on support for gender quotas and a positive effect on employment discrimination. The expectations for benevolent sexism are less clear. Although benevolent sexism could have no relationship with opinions of gender quotas and employment discrimination, it could also foster support for quotas and employment equality without more information about the particular roles men and women should play in politics and society. Table 2 displays the results of two OLS models testing the effects of hostile and benevolent sexism on support for gender quotas and employment discrimination.⁹

⁹ The models include different control variables for each dependent variable. See Table A2.1 for full results.

Table 2. Marginal Effects of Hostile and Benevolent Sexism on Attitudes towards Women’s Issues (SEM Estimates)

	The state ought to require that political parties reserve some space on their lists of candidates for women, even if they have to exclude some men	When there is not enough work, men should have a greater right to jobs than women
Hostile Sexism	-0.10* (0.04)	0.53* (0.09)
Benevolent Sexism	0.52* (0.20)	0.08 (0.08)

*p<.05 (two-tailed). Standard errors in parentheses.

Note: Ordinary least squares (OLS) estimates. Control variables included but not shown here.

Data: AmericasBarometer Surveys, 2014.

The results presented in Table 2 corroborate the idea that hostile sexism is the main component of opinions on women’s issues. Hostile sexism has a negative effect on support for gender quotas and a positive effect on employment discrimination. Benevolent sexism has a positive effect on support for gender quotas and no relationship with opinions about employment discrimination. Overall, the results indicate that the conceptual dimensions of hostile and benevolent sexism have different consequences psychological bases and might have different effects on political attitudes, especially with regard to women’s issues. While gender attitudes reflecting hostile sexism are derogatory and negative in nature, benevolent sexism carries more subtle implications for the study of public opinion.

Ambivalent Sexism and Approval Ratings for Female Incumbents

The results from the previous section indicate that hostile and benevolent sexism have different roles in the formation of attitudes towards women's issues in Brazil. The analyses show that hostile sexism decreases support for the implementation of gender quotas in the Brazilian parliament and increases support for employment discrimination when there is not enough work. The analyses also show that benevolent sexism tends to increase support for gender quotas, and has no effect on views about employment discrimination. In this sense, the results paint a positive picture of benevolent sexism, since it does not seem to produce exclusionary views on those issues.

However, examining the effect of benevolent sexism on policies that directly deal with issues of gender discrimination does not properly address the role of this type of sexism on public opinion, since benevolent sexism does not include explicitly negative and derogatory views. The concept of benevolent sexism is a central one in the study of gender attitudes because it introduces the ambivalent component to the more classic version of sexism. Although benevolent sexism introduces the element of chivalry that can potentially involve positive affect towards women, it also entails prescriptions about behaviors that fit the supposed complementary roles of men and women. The insidious effects of benevolent sexism, the apparently harmless version of sexism, are observed when men and women are perceived to deviate from traditional stereotypes and prescriptions about how they should behave. Therefore, benevolent sexism constitutes a more subtle strategy for system justification (Jost and Kay, 2005).

Take, for instance, the widespread and deeply held belief that women make less corrupt politicians than men. As a manifestation of benevolent sexism, this belief can have presumed positive direct effects on how individuals evaluate female politicians. As long as a female leader conforms to certain expectations and stereotypes held by voters, especially when it comes to avoiding involvement with corruption, they can potentially benefit from voters' willingness to reward conformity. However, this initially positive view can elicit stronger backlash towards female leaders when they are perceived to be deviating from that stereotype (Costrich et al., 1975; Rudman and Glick, 2001).

Therefore, a crucial question in the study of how individuals think about women in politics, and more specifically, how they think about women as political leaders, is whether female politicians perceived as corrupt are more likely to experience backlash from voters relative to male incumbents perceived as corrupt. Given the growing presence of females holding top positions in executive offices around the world and also at the sub-national level, the answer to this question could shed light on our understanding of how incumbents' approval ratings vary across contexts and over time.

In order to examine whether benevolent sexism moderates the impact of perceptions of corruption on the approval ratings of female incumbents, Table 3 shows results a structural equation model on the approval rating of Brazil's president Dilma Rousseff. The main independent variables in the model are the measurement factors of hostile and benevolent sexism, a measure of perception of corruption, and a multiplicative term between perception of

corruption and benevolent sexism.¹⁰ This specification tests whether benevolent sexism moderates the negative effect of perception of corruption on presidential approval. Control variables in the model include the perception of the extent to which government promotes security, evaluation of health care services, evaluation of the educational system, ideological self-placement, incumbent partisanship, sociotropic and pocketbook economic evaluations, wealth, education, age, urban residency, gender, a dummy for *Bolsa Família* recipients, whether respondent is unemployed, dummies for race (white and black), and media exposure.¹¹

Table 3. Effects of Hostile/Benevolent Sexism and Perception of Corruption on Presidential Approval

	Presidential Approval
Hostile Sexism	-0.32** (0.18)
Benevolent Sexism	1.25* (0.61)
Perception of Corruption	-1.18* (0.24)
Perception of Corruption*Benevolent Sexism	-1.27** (0.75)

*p<.05. **p<.10 (two-tailed). Standard errors in parentheses.

Note: Model is ordered probit. Control variables included but not shown here.

Data: AmericasBarometer Surveys, 2014.

The results from the model affirm the theoretical expectations about the role of benevolent sexism in evaluations of female politicians. Perception of corruption has a negative

¹⁰ No direct question on general perception of corruption in the country was available in the 2014 round of the AmericasBarometer in Brazil. The measure used here is a proxy, based on the question: “To what extent would you say the current administration combats (fights) government corruption?” (7-point scale from “not at all” to “a lot”). The measure of incumbent approval comes from the question: “Speaking in general of the current administration, how would you rate the job performance of President Dilma Rousseff? Very good, good, neither good nor bad, bad, or very bad?”

¹¹ All variables in the model are recoded from 0 to 1. See Table A2.2 for full results.

baseline effect on presidential approval. The magnitude of the effect increases as benevolent sexism increases (the effect of the multiplicative term is significant at .10), showing that perception of corruption tends to become more salient in the evaluation of female incumbents for individuals who more strongly endorse benevolent sexism. The baseline effect of benevolent sexism on presidential approval is positive, indicating that for individuals who do not perceive government corruption, benevolent sexism increases support for the female president. Moreover, hostile sexism has the expected negative effect on approval of the female president's job, since derogatory views about women in general are likely to be used against the female leader of the country.¹²

Conclusion

Different beliefs about men and women in politics and society that are usually lumped together under the label of gender attitudes have distinct psychological bases and properties. This chapter contributes to the study of gender attitudes by showing that specific beliefs and attitudes about men and women in politics and society stem from more fundamental orientations about gender relations. More specifically, two different types of more overarching gender beliefs, namely hostile and benevolent sexism, underlie the structure of specific attitudes and beliefs about men and women in politics. While hostile sexism is at the core of notions that women are

¹² A parallel model tested the moderating effect of hostile sexism on the relationship between perception of corruption and presidential approval and found no significant effect.

not fit for political leadership, benevolent sexism underlies stereotypes about women being more honest, more emotional, and better at certainly issue and policy areas, especially those more related to care.

Using original survey data from Brazil, the chapter uses confirmatory factor analyses in order to tests whether hostile and benevolent sexism constitute the underlying structure of gender attitudes. Across the border, the results provide support for the idea that not all beliefs and attitudes about men and women in politics and society are created equal. Moreover, the chapter uses structural equations models to show that hostile and benevolent sexism tend to be associated to different characteristics of respondent, such as gender, socioeconomic status, and religiosity. The results also show different effects of gender of the interviewer on hostile and benevolent sexism.

The chapter also explores the effects of hostile and benevolent sexism on opinions about women's issues, such as support for gender quotas and support for employment discrimination. The models in the chapter indicate that opinions on those issues are primarily affected by hostile rather than benevolent sexism. This is due to the fact that those issues are related to women's place in politics and society more generally, and are therefore more directly associated to fundamental components of hostile sexism.

Finally, the chapter investigates the insidious side of benevolent sexism. Due to the fact that beliefs associated with benevolent sexism are prescriptive with regards to gender roles and leadership styles, the effects of benevolent sexism on opinions about women in politics tend to be more nuanced. For example, while the belief that women are more honest or better at handling certain issues and policy areas than men seems at the surface to be beneficial to female

candidates and politicians, it is likely that perceived transgressions performed by women in those areas might suffer are stronger backlash effects than when performed by men. Based on these insights, the chapter tests the moderating effect of benevolent sexism in the relationship between perception of corruption and the approval of the job performance of the female president of Brazil. All in all, while these benevolent gender stereotypes do not clearly signal gender discrimination and lead to discriminatory behavior, their have prescriptive nature constrains the realm of possible attitudes and behaviors that men and women are allowed perform and display as political beings.

Even though the survey data used in the chapter dates back to 2014, the results from the analyses shed light on controversial events that unfolded in Brazil during the first half of 2016, when president Dilma Rousseff faced was impeached by the country's legislative houses. Amid several corruption scandals and an accusation of budgetary mismanagement, the president's popularity dropped the very low levels, leading several parties to leave the coalition and allowing Congress to start the impeachment process. The controversial aspect of the process was that her male predecessors also performed similar budgetary maneuvers (to the ones that ultimately led to Rousseff's impeachment) without facing the same backlash from politicians and public opinion. Moreover, although several members of her party (Worker's Party) were formally charged in corruption investigations, the president had not been formally accused of corruption by the time of the impeachment.

In conclusion, the chapter brings evidence that the conceptual distinction between hostile and benevolent types of beliefs about women and men in politics and society is consequential for the study of gender relations in politics. The distinction helps us understand to only the structure

of a set of politically relevant opinion in and of themselves, about also cast further light on the process through which individuals make up their minds about women's issues and about how they evaluate female politicians.

CHAPTER 3

Gendered Political Contexts: The Gender Gap in Political Knowledge

One of the recurring questions in the study of political behavior is why there is a pervasive gap in political knowledge between men and women. Over time and across contexts, different studies find that even after controlling for the main determinants of political knowledge (e.g., education and political interest), men tend to score higher on survey knowledge batteries than women (Delli Carpini and Keeter, 1996; McGlone et al., 2006; Dow, 2009). The main conclusion is that women tend to be less politically knowledgeable than men not because they display lower levels of education and political interest, but due to something else. So, what explains the gap if it is not entirely accounted by conventional factors (such as education and interest) from the mainstream explanatory model of political knowledge?

In this chapter I argue that the level of women's political representation affects the extent to which individuals are able to express the knowledge that they have, and ultimately impacts the gender gap. Building upon the contribution of comparative studies on women's representation and findings from political psychology, I propose that the under-representation of women in politics makes negative stereotypes about women in politics salient, and these in turn affect how much cognitive effort individuals put in thinking about politics and, more specifically, in answering political knowledge questions. Moreover, the survey in and of itself might be responsible for making those considerations more salient for respondents. Surveys of public opinion not only bring up topics that might remind respondents of the extent to which their

political institutions are unequal with regard to gender, but also ask questions that unintentionally prime respondents to see politics in gendered terms.

I use cross-national survey data from 120 countries and a survey experiment with American respondents in order to test whether the underrepresentation of women primes such considerations and impacts the gender gap in political knowledge. The results from the cross-national analyses show that increasing the level of female representation across countries decreases the gender gap in political knowledge, even after controlling for individual-level variables such as education and political interest. Also, by manipulating the gender composition of batteries of feeling thermometers towards prominent politicians in the survey experiment, I show that the gender gap decreases substantially when respondents are primed to think of higher levels of female representation. The findings shed light on how female representation affects the ways men and women engage in thinking about politics more broadly, and how the survey context can also have a role in that process.

Unpacking the Gender Gap in Political Knowledge

The literature on political knowledge points to three broad sets of factors that can explain why some individuals are more knowledgeable than others: opportunity, motivation, and ability (Neuman, 1986; Luskin, 1990; Delli Carpini and Keeter, 1996). These studies are grounded in the assumption that knowledge tests measure how much people have learned and stored political information. From this perspective, once the required information is acquired, it is necessarily

going to be used to the same extent by survey respondents. Nevertheless, some of those same studies also show that even after taking factors related to learning into account, one still observes a gender gap in performance in political knowledge questions. There seems to be something else about answering such questions that makes men more likely to get the correct answer than women.

In this chapter I argue that part of this unexplained gender gap in performance in knowledge questions is affected by the extent to which individuals' political contexts are gendered and how that affects the way they engage in the task of thinking about politics. The core hypothesis of this chapter is that gendered contexts, especially where the underrepresentation of women in politics is a salient problem, constitute sources of stereotype threat that affect the way women and men think about politics, and consequently how they answer political knowledge questions. Moreover, the survey context might often mimic the broader political environment in priming those considerations. When surveys ask respondents several questions about public affairs and political actors, they bring up a topic that in some contexts might convey negative stereotypes about women in politics. Those types of considerations in turn affect how much cognitive effort male and female respondents are willing to put into thinking about the topics and, more specifically, answering knowledge questions. Hence, according to the theory proposed here, the explanation for a substantive part of the gender gap in political knowledge is not related to gender differences in learning, but lies instead in the fact that being reminded of gender stereotypes in politics affects respondents' propensity to use and display the knowledge that they actually have.

In most societies, there are a number of individuals who hold negative stereotypes about women in politics. Norris and Inglehart (2001) show the presence of substantial cross-national variation in attitudes towards female leadership, and also how that variation is associated with broader cultural values held cross-nationally. A recent wave of the World Values Survey (between 2005 and 2009) asked respondents from 56 different countries whether they agreed or disagreed with a statement saying that men make better political leaders than women. The average percentage of respondents agreeing with this statement varied from 8% in Sweden and 10% in Afghanistan to 90% in Iraq and 92% in Egypt. The same question was asked in the 2012 round of the AmericasBarometer survey and the percentages ranged from 16% in Uruguay to 53% in Guyana. Also, since some survey respondents are aware that those views are widely seen as uncivil and as going against the basic principles of equality and democracy that most countries value nowadays, they might publicly falsify their views about women in politics in order to avoid the attribution of sexist behavior. In the American case, for instance, it is estimated that at least something between 10 and 20% of survey respondents hide their views on these matters when asked using direct conventional survey questions (Streb et al., 2008). Individuals might also hold those attitudes at an unconscious level (Greenwald and Banaji, 1995). Despite openly endorsing egalitarian views, some people are prone to the influence of negative predispositions towards female authority that do not reach a conscious level (Rudman and Kilianski, 2000; Monin and Miller, 2001).

Another aspect of this pervasive phenomenon is the fact that, even though not all citizens endorse negative stereotypes about female leadership, most seem to be aware of them. The literature on stereotype threat provides extensive evidence that reminding individuals of

stereotypes affects their behaviors and, more specifically, their test performance. Stereotype threat is defined as a situation-specific type of stigma that is based on negative stereotypes about a group's ability to perform on a task (Steele et al., 2002, p. 380). According to this perspective, environmental cues prime individuals of specific groups by suggesting that they would be less capable of succeeding in the task than another group. Steele et al. (2002) argue that, in the case of math tests, women's underperformance relative to men can be explained by the fact that women feel the pressure of being in a stigmatized group with regard to that specific task. They find that women's performance tends to decrease when they receive a prior statement saying that female test-takers tend to perform worse than males. These findings suggest that the test not only measures the underlying ability that it is supposed to tap, but also the effect of those situational pressures on some test-takers.¹³ More importantly, those situational pressures triggered by the exposure to stereotypes affect male and female respondents in different ways. While the exposure to stereotypes is found to harm the test performance of females, other studies also find what is called stereotype lift, that is, when negative stereotypes about females with respect to test performance boost the performance of male respondents (Walton and Cohen, 2003).¹⁴

Studies in public opinion also show that stereotype threat may help us unpack the gender gap in political knowledge. McGlone et al. (2006) use a similar preface statement from the social psychological studies of stereotype threat in math tests and find very similar results for political

¹³ Stereotype threat effects are also observed among African-American test-takers (Steele and Aronson, 1995; Steele et al., 2002). Moreover, given that stereotypes are triggered by specific situations, Aronson et al. (1999) find that even white male students can underperform in math-tests if threatened with a reminder of the comparison with Asians, a group stereotyped as performing above average in math tests.

¹⁴ There is little consensus in social psychology about the mechanism through which stereotype threat affects test performance. The literature points to several possible mediators such as blood pressure (Blascovich et al., 2001), working memory capacity (Schmader and Johns, 2003), amount of effort, self-handicapping, anxiety, evaluation apprehension, test confidence, self-doubt, etc. (Smith, 2004).

knowledge questions.¹⁵ In the same line, Davis and Silver (2003) also manipulate the preface to political knowledge questions in order to observe the effect of stereotype threat among African-American respondents in a survey.¹⁶

However, it is unclear in the literature what are the sources of stereotype threat in contexts where the threat is not explicitly presented to individuals. In other words, priming respondents with stereotype threat in the way the studies above do for political knowledge tends to produce a gender gap that is already found in the first place. Conventional surveys do not explicitly give respondents the diagnostic information about gender differences in performance, and also tend to use neutral prefaces to introduce batteries of knowledge questions. Yet many of those surveys still display the gender gap even after controlling for factors related to learning. This suggests that, in order for stereotype threat to play a role in the explanation of the gender gap in political knowledge, respondents to public opinion surveys might either be primed by gender stereotypes prior to beginning the survey, or the survey might unintentionally prime those considerations.¹⁷ The question then is what is the source of that stereotype threat that respondents might already have in mind when asked about what they know about politics. It is also crucial for empirical research on the topic to seek the factors that make the threat both relevant and

¹⁵ McGlone et al.'s piece uses a diagnostic preface to the knowledge battery administered to the treatment group as a way to create the relevant variation of interest in the study. Respondents in the treatment group are told the following: "the survey you are participating in this evening has been shown to produce gender differences in previous research" (McGlone et al., 2006, 395). The control group receives no diagnostic information about the test whatsoever.

¹⁶ In one experimental condition, Davis and Silver tell respondents that their answers are likely to be judged. They do so by simply including a statement that "these questions are a kind of test" (p. 36). In the other experimental condition respondents receive a neutral statement about the knowledge questions. They observe a decrease in the performance of African American respondents in the first condition relatively to the second, and also that such effect is more likely to occur when the survey interviewer is white. According to the authors, the explanation for the effect of the preface is that it increases respondents' pressure to disconfirm the existing stereotypes.

¹⁷ The work of Mendez and Osborn (2010) shows that people tend to attribute higher levels of political knowledge to males than females, even when their objective knowledge levels are the same, which indicates that gender stereotypes in politics extend as well to how politically knowledgeable men and women are considered to be.

irrelevant for gender differences. Identifying and manipulating those environmental cues in experimental research is therefore an important step in the study of stereotype threat and the gender gap in political knowledge. But what makes stereotypes salient in surveys in the first place?

Gendered Political Contexts, Stereotypes, and Political Knowledge

The discussion above points to the possibility that stereotype threat might be a relevant situational factor causing the gender gap in political knowledge found in survey research. While a substantial part of the gender gap in knowledge is explained by individual differences in characteristics related to opportunities and motivation for learning about politics, such as education and interest, the stereotype threat perspective suggests that contextual factors can affect the extent to which individuals express the knowledge they have already acquired. However, a puzzling aspect of the theory and findings discussed above is that, given that conventional public opinion surveys do not explicitly give respondents the diagnostic information about gender differences in performance on knowledge question (as McGlone et al. and Davis and Silver do), how could stereotype threat be the underlying mechanism explaining the pervasive gender gap observed by survey research across countries and over time?

Findings from research on women's representation provide valuable insights on the question above. Overall, they suggest that the political behavior of ordinary citizens is affected by the degree to which women take on leadership roles in politics at the elite level. The first

studies to explore this relationship show evidence that the presence of female candidates running for the state-level positions increases women's levels of political knowledge, interest, and self-efficacy (Koch, 1997; Burns et al., 2001; Atkeson, 2003). With respect to comparative studies, the recent study by Fraile and Gomez (2015) shows evidence that the level of female representation in parliaments decreases the gender gap in political knowledge in Latin America. In a similar vein, Kittilson and Schwindt-Bayer (2012) use both cross-national and country-specific analyses to show how female representation affects the gender gap on different indicators of political engagement, while Desposato and Norrander (2009)'s article also shows that the larger the number of women office holders across countries, the smaller the gender gap in political participation. Campbell and Wolbrecht (2006) show evidence that female role models affect young girls' interest in political activism in the U.S. In another work (Wolbrecht and Campbell, 2007), the authors look at Europe and find that the cross-country gender gaps in engagement in political discussions and self-perceptions as politically active decrease as the percentage of women in the country's legislature increases. Finally, Barnes and Burchard (2012) find very similar results for African countries in a more recent study. The relationships observed by those studies are also plausible given the findings that women appear to be as knowledgeable as men in questions about women in politics (Dolan, 2011), suggesting that women are at least as aware as men about the extent to which women are represented in their country.¹⁸

¹⁸ Dolan (2011) asks a sample of American respondents to say the percentage of women in Congress and the Supreme Court, to identify a female Senator and a female Member of Congress, and to say the name of the Speaker of the House (formerly Nancy Pelosi). The author finds that female respondents tend to perform as well as their male counterparts on this set of questions, and even outperform them in a few ones, contrary to the tendency of females to score less than men on conventional knowledge questions (such as saying which party has most seats in the House).

These findings are relevant since underrepresentation of women in politics is still widespread across political systems. According to data from the Inter-Parliamentary Union, as of January 2015, only Rwanda, Bolivia, and Andorra had more than 50% of their parliaments comprised by women. A group of about 40 countries had more than 30% of women in parliament. This means that at least 120 countries currently have less than a third of the seats in their parliaments held by women.¹⁹ The numbers reveal even more underrepresentation when one considers the proportion of women as heads of state.

By combining the studies on stereotype threat with studies on the effects of women's representation on civic engagement, the theory developed here presents a new argument about the mechanism that produces the gender gap in political knowledge. On the one hand, while the studies on stereotype threat show how it can affect the gender gap in knowledge, they do not theorize what are the actual sources of stereotype threat that affect individuals in politics. On the other hand, the studies on the effects of women's representation on public opinion focus mostly on the extent to which female representation affects women's motivations to engage in politics and actively seek political information, which refer to factors that are usually already controlled for in individual-level models of political knowledge.²⁰ The theory developed here proposes that, while female representation might affect women's motivations and opportunities to learn about politics, it also has a direct effect on people's (both women and men) cognitive engagement, precisely via stereotype threat and lift. Individuals' cognitive engagement in the task of answering knowledge questions and thinking about politics more broadly is affected by the

¹⁹ Data from the Inter-Parliamentary Union Website (www.ipu.org).

²⁰ Fraile and Gomez (2015, 4) refer to "gender-bias signaling" as the mechanism through which women's representation affect knowledge, but it is unclear in their study whether that signaling has a direct effect on knowledge or an effect that is mediated by motivational factors.

extent to which they have to cope with gender stereotyping reproduced on a regular basis by the unequal representation of women in their political system.

Actually, the survey instruments used to assess levels of political knowledge in the mass public might constitute gendered political contexts. Research on survey methodology shows evidence that prior items asked in a survey can prime beliefs that in turn affect the response to later items (Tourangeau and Rasinski, 1988; Tourangeau et al., 2000). As stated above, surveys of political opinions and behaviors do not explicitly prime gender stereotypes in politics (unless that is the research goal), but by revolving around a sphere of activity that in most contexts is largely seen as male-dominated, are likely increase the accessibility of considerations about gender in politics in respondents' memories.²¹ As a consequence, those beliefs become particularly likely to come to mind when respondents believe they are being evaluated, that is, when it is possible that they act in ways that confirm or not those stereotypes. Hence, the survey, as a simulated conversation about politics, operates as a "self-fulfilling prophecy" with regard to political knowledge questions. Moreover, it is not just the context of the survey, but most importantly the broader political context of which the survey is part. Surveys will prime gender stereotypes as long as those stereotypes are salient in the broader political context in which the surveys are embedded.

All in all, the argument developed above presents a mechanism capable of explaining the pervasive gender gap in political knowledge found by previous scholarship. Even though the studies mentioned above focus primarily on the effect of female representation on factors related to learning, it might also be the case that the presence of women in leadership positions affects

²¹ This proposition builds on the idea of attitude accessibility (Fazio and Williams, 1986; Fazio et al., 1989) for the case of gender beliefs.

how ordinary citizens use political information they have already learned. In other words, the different levels of female political representation across contexts might or might not remind individuals of the negative stereotypes about women in politics when they think and talk about the subject. Moreover, the survey instrument in and of itself might remind respondents that they are dealing with a domain that is largely dominated by men in most contexts. In contexts where women are underrepresented in politics, the negative gender stereotypes might be primed when respondents answer questions about political affairs. On the other hand, in contexts where women have more prominence in political leadership roles, the survey, as a simulated conversation about politics, might not convey those negative stereotypes. Hence, the gender gap in political knowledge should be lower as female political representation increases across contexts.

The next two sections examine the gender gap in performance in political knowledge items and test whether priming considerations about women in politics impacts how respondents answer those questions. The section below looks at surveys from 120 countries in order to test whether gendered political contexts, either manifested in the countries' levels of women's representation or the knowledge questions themselves portraying men or women as the protagonists of politics, affect the gender gap in knowledge, after taking into account factors related to gender differences in propensity to learn about politics. Then, I present a survey-experiment with American respondents that manipulates the gender composition of feeling-thermometer batteries in order to prime respondents about levels of women's leadership in politics, and then tests whether that affects the gender gap in performance.

Gendered Political Contexts and Knowledge Cross-Nationally

According to the argument developed in the previous section, we should observe a decrease in the gender gap in political knowledge as the descriptive political representation of women increases across contexts. This decrease in the gender gap should be explained not only by the fact that female representation can potentially increase women's motivations and opportunities to learn about politics, but also because it directly affects respondents' engagement in answering political knowledge questions.

In this section I analyze the relationship between female political representation and the gender gap in political knowledge in 120 countries using public opinion surveys that asked political knowledge questions between 2001 and 2011.²² The data for all countries comes from 8 different comparative survey projects and represents approximately 88% of the world population as of 2012.²³ The majority of these surveys are nationally representative samples of each country and are conducted based on face-to-face interviews.²⁴ Given the availability of surveys from several different countries and the world wide variation in women's descriptive representation, examining such a broad range of countries maximizes the variations in the main quantities of interest in the analysis.

²² The data comes from the following comparative survey projects: the 2008 and 2010 rounds of the AmericasBarometer, the 2005 and 2008 rounds of the Afrobarometer, the 2006-2007 round of the Arab Barometer, the 2008 round of the Asian Barometer, the Chicago Council Survey of 2006, the second and third waves of the Comparative Study of Electoral Systems, the European Election Study of 2009, and the Voice of the People survey of 2011. For a list of all countries, see appendix table A3.1.

²³ Data on populations comes from the World Bank Website (www.data.worldbank.org).

²⁴ About 5% out of 248 country-years analyzed here were either non-probabilistic or urban samples. Another 18.5% were conducted either by telephone, mailback, or online modes.

In order to assess the effect of women's representation the analysis below uses a two-step model with an appropriate weighting scheme in order to better account for the structure of the data (Borjas and Sueyoshi, 1994; Lewis and Linzer, 2005; Jusko and Shively, 2005; Huber et al., 2005).²⁵ Running separated hierarchical models for each survey project in which individual-level data is most comparable would harm the estimation at the country-level due to the small number of observations (with an average of about 25 countries per survey).²⁶ Moreover, as Steenbergen and Jones (2002, 234) point out, conventional multilevel models tend to “increase the number of assumptions about data”, such as assuming that the effects of certain individual-level variables in the model are fixed across groups. On the other hand, using a pooled data set for all countries would likely yield biased estimates of the gender gap (not related to learning skills) at the individual-level, since only education and age are available for all countries (but still often measured using different scales). For those reasons, the best strategy is one that combines the best of both worlds, by maximizing variation and degrees of freedom at both levels of analysis, while preserving the comparability of the data.

Moreover, because surveys often ask different questions (with different content and format) in different countries, and given that even the same question can potentially have problems of comparability across countries (Elff, 2009), the best strategy to overcome this problem is to focus the analysis at the item-level and take into account features of items that are

²⁵ Borjas and Sueyoshi (1994) propose a weighting scheme that allows one to weight the coefficients used as the dependent variable in the second-level model based on their precision. However, the precision of the first-level coefficient is also composed by second-level error. Hence, one has to take into account the second-stage error in the weighting scheme. Borjas and Sueyoshi propose a weighting scheme that parses out the individual-level component of the error at the second-stage model (since it is redundant with the first-level error), and then combines the “pure” second-level error with the precision from the first-level estimates.

²⁶ Balderjahn et al. (1997) and Maas and Hox (2005) show that estimates from multilevel models with less than 50 groups at the second-level tend to be biased.

expected to affect the gender gap in performance across countries. In this sense, we can rely on the literature about the gender gap in political knowledge in order to identify features of items that might affect the performances of men and women differently (Dolan, 2011; Barabas et al., 2014), and include information about those items in the estimation. The equation below displays the estimation of the gender gap for each item h at the individual-level (i) in each country-year j available. The subscripts indicate that an individual-level model on the probability of answering the question correctly is run for each item h in each country-year j . In each of these models, the main causal variable of interest is the gender of respondents ($GENDER_i$), and a set of potentially relevant individual-level covariates ($CONTROLS_i$) is also included, such as education, age, political interest, among others, depending on their availability in each survey. Those covariates try to account for gender differences in propensity to learn about politics, and therefore the effect of ($GENDER_i$) represents differences unrelated to learning, which might reflect gender differences in the extent to which respondents use the knowledge they actually have.

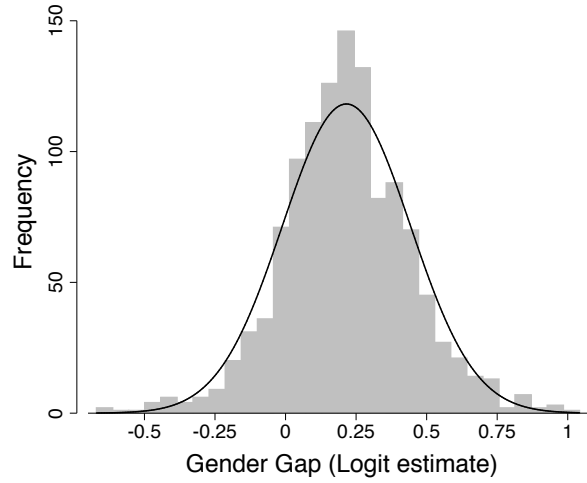
$$KNOWLEDGE = \beta_{0hj} + \beta_{1hj}GENDER_i + \beta_{2hj}CONTROLS_i + \varepsilon_{hij} \quad (1)$$

Using the public opinion surveys from the survey projects mentioned above results in the analysis of 1,171 political knowledge items, asked across 120 countries between 2001 and 2011 (comprising a total of 234 country-years). The 1,171 first-level models (Equation 1) consist of binary logit models in which the dependent variable was coded as 0 for incorrect and “don’t know” answers, and 1 for correct answers. “Don’t know” answers could not be coded separately because of the lack of standardization in coding practices across different comparative surveys.

These models include varying numbers of theoretically relevant independent variables according to their availability in each country, ranging from 6 to 12, with an average of 9.69. Since the goal of the analysis at that level is to properly estimate the gender effect while taking into account as many potential confounders as possible, the second-step of the analysis also takes into account the variation in the number of control variables included in each first-level model. The estimates of the predicted gender gap or gender effect (β_i) and their standard errors are then used in a country-year data matrix with the independent variables for that level of analysis. The average value for the estimate of the gender gap in first-level model without control variables is 0.31 (0.29, 0.32), while the average for the gender gap with control variables is 0.22 (0.21, 0.23), indicating that the individual-level covariates across countries account for an average of less than a third of the gender gap in political knowledge questions.²⁷ Moreover, while 67% of the items have statistically significant (at 0.05) baseline gender differences, 47% of those differences remain statistically significant after controlling for individual-level covariates, indicating that there is a statistically significant gender gap in at least one item in 107 out of 120 countries (and 95 out of 120 for at least 2 items).

²⁷ Using the “divide by 4 rule” for logit coefficients (Gelman and Hill, 2007, 82), one can say that the average gender gap in the probability of answering a knowledge question correctly drops from about 0.08 to 0.06 when individual-level covariates (which include factors associated with the acquisition of knowledge) are taken into account by the models.

Figure 7. Distribution of the Gender Gap (Logit estimates) Across Knowledge Items



Equation 2 below shows the structure of the second-step model. This model has the first-step estimate of the gender gap (the logit coefficient β_{1hj}) for each item as the dependent variable, and includes characteristics of the country-year and the items as independent variables:

$$\beta_{1hj} = \gamma_{10} + \gamma_{11}WOMENSREP_j + \gamma_{12}GENDERED_h + \gamma_{13}CONTROLS_j + \gamma_{14}CONTROLS_h + v_{hj} \quad (2)$$

The first block of independent variables, $WOMENSREP_j$, refers to features of the country in each year that indicate the level of female representation in that specific context. It includes three indicators of the level of female representation in the country for the corresponding year: the proportion of women in the parliament, the proportion of women in cabinets, and an indicator

of whether or not the country had a women as head of government over the period of 50 years prior to the survey.²⁸

Next, the block *GENDERED_h* indicates whether the item itself presents politics as gendered, and is composed by two variables indicating whether the item makes reference to male or female politicians (no personal reference as baseline).²⁹ These two blocks of variables provide the estimates of interest in the model, since they represent the influence of gendered political contexts (in either institutions or the survey itself) on the gender gap in political knowledge. In order to take into account potential confounders, the blocks

CONTROLS_j and *CONTROLS_h* refer to other features of the countries and the items that should be controlled for in the estimates of the main effects of the model. The block *CONTROLS_j* includes relevant country-level control variables that help isolate the effect of women's representation on the gender gap. The block includes the GDP Per Capita, the Inverted Freedom House Index of Civil Liberties and Political Rights (Level of Democracy), one binary variable for proportional systems (having non-classified and majoritarian cases as baseline), an indicator of whether the country had gender quotas in the corresponding year, and a variable measuring the number of years up to the survey since the country instituted the right of women to vote.³⁰ The block *CONTROLS_h* includes a series of variables that measure different features of the items that might affect the gender gap. The first type of those comprise the content of the

²⁸ Data for these variables comes from Hausmann et al. (2006, 2007, 2008, 2009, 2010, 2011). For survey-years not covered by that data, information from different available sources (such as the country's government website) were used.

²⁹ No item in the sample approached issue or policy questions directly related to gender issues.

³⁰ Data on GDP Per Capita comes from the World Bank Databank. Data on electoral systems comes from the 2012 update of the data by Beck et al. (2001). Information on the presence of gender quotas comes from the Global Database of Quotas for Women (<http://www.quotaproject.org/aboutquotas.cfm>). Finally, the information about women's suffrage adoption comes from Pippa Norris' Democracy Cross-National Data (<http://www.hks.harvard.edu/fs/pnorris/Data/Data.htm>).

question, such as whether it refers to foreign affairs or international organizations, and whether it refers to a task involving numbers (quantitative). The second type refers to item format, with variables indicating whether the item is multiple-choice, true-or-false, or opinionation (whether an answer was given on a hard opinion question), having open-ended item as baseline category. Finally, the last variable in that block is a model quality index.³¹ This index measures the extent to which the individual-level model was able to explain the variation in the item. Even though the second-level model corrects the errors based on the amount of error in the coefficients that constitute the dependent variable, a quantity that is associated to the quality of the first-level model, it might also be the case that the magnitude of those estimates depends on the extent to which those models omit or mismeasure relevant control variables. The model at the second-level also includes country and survey fixed effects, clustered standard errors at the country-year level, and uses a weighting scheme proposed by Borjas and Sueyoshi (1994) in order to properly account for the fact that the dependent variable is measured with error.³² Table 4 shows the main estimates of the effect of country and item-level variables on the predicted gender effect captured by the individual-level models:³³

³¹ The model quality index is based on scores from a factor analysis model of three indicators of how well each individual-level model was able to explain the response to the knowledge question. It comprises the model pseudo- R^2 , the proportion of independent variables in the model that had statistically significant effects (at 0.05), and the inverted p-value of the effect of education.

³² I use the “`edvreg`” command (Lewis and Linzer, 2005) in Stata in order to run the analysis. See appendix tables for results from alternative estimation methods (OLS with clustered standard errors, Robust OLS, and Weighted Least Square with the standard error of the coefficient as weighing variable) for both the predicted or “purged” and the baseline gender effect. See appendix table A3.3 for full comparison of results.

³³ All variables in the model except the proportion of women in parliaments and cabinets are re-scaled from 0 to 1. Also, the model has a smaller number of observations (1,050 against 1,171 in the full dataset). That is due to the impossibility of coding whether a few items from the Afrobarometer referred to male or female politicians, since they refer to local politicians. Nonetheless, removing that variable from the model does not change the other estimates. For descriptive statistics, see appendix table A3.2.

Table 4. Two-Step Estimation Results for Gender Gap in Correctly Answering Knowledge

Item	
Independent Variable	Effect
<i>WOMENSREP_j</i>	
Proportion of Women in Parliament	-0.29* (0.13)
Proportion of Women in Cabinets	0.03 (0.11)
Female Head of State Last 50 years (yes=1)	0.02 (0.02)
<i>GENDERED_h</i>	
Item about Female Politician	-0.13* (0.04)
Item about Male Politician	0.06* (0.02)
<i>CONTROLS_j</i>	
GDP Per Capita	0.34* (0.13)
Level of Democracy	-0.04 (0.06)
Proportional System	0.00 (0.02)
Gender Quota	0.07* (0.02)
Years with Women's Suffrage	0.04 (0.07)
<i>CONTROLS_h</i>	
Content: Foreign Affairs	0.16* (0.02)
Content: International Organizations	0.09* (0.03)
Content: Quantitative	0.04* (0.02)
Format: Multiple-Choice	-0.06 (0.04)
Format: True-or-False	-0.02 (0.05)
Format: Opinionation	-0.11

		(0.06)
	Model Quality Index	0.29*
		(0.05)
Constant		0.23*
		(0.11)
<hr/>		
	R ²	0.30
	n	1,050
	Clusters (country-year)	237
<hr/>		

*p<.05 (two-tailed). Standard errors in parentheses.

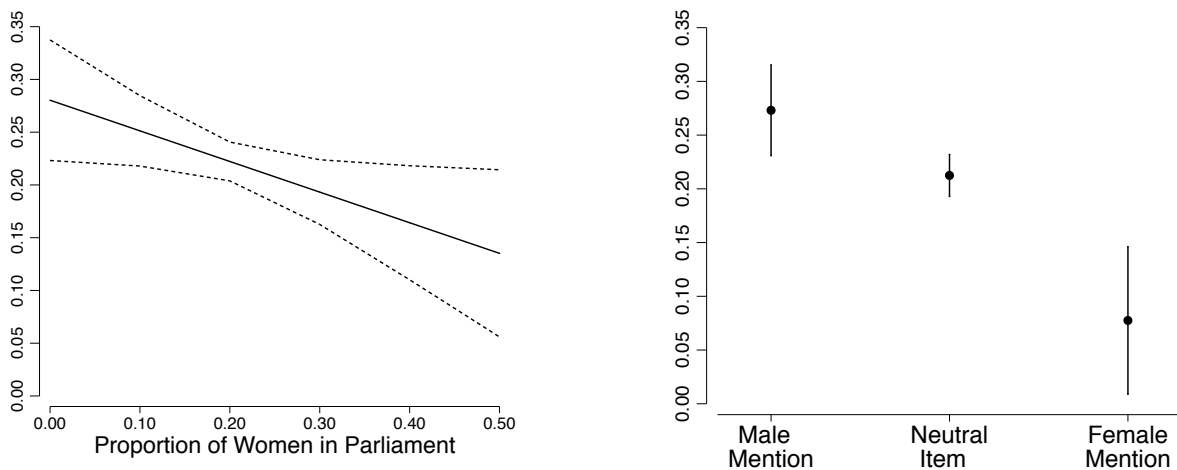
Country and year fixed effects are included but not shown in the table.

Table 4 shows support for the hypothesis that gendered political contexts, either manifested as the unequal participation of women in elected bodies or by the depiction of men and women as protagonists of politics in the survey itself, has a substantial impact on the gender gap in political knowledge, even after individual, country, and item-level characteristics are taken into account. In other words, some of the female representation and gendered items impact the gender gap in knowledge that is due to differences in the extent to which male and female respondents are able or willing to use the knowledge that they have.³⁴ The proportion of women in parliament has a substantial effect, while the other two measures of female representation (women in cabinets or as head of government) do not have any impact on the gender gap. Items with gendered references, by mentioning male or female politicians, also convey messages about who are the relevant players in politics, and in turn help to reinforce or break stereotypes about women in politics. The model in Table 4 shows that items with mentions of male politicians tend to have a larger gender gap in displayed knowledge, while items with female mentions tend to

³⁴ When using the simple baseline gap as dependent variable in the same model, that is, the gender gap without any control variables (similarly to a model with complete pooling), this effect is smaller and not statistically significant. For the full results see appendix table A3.4.

have a much smaller gap relatively to non-gendered items. The figures below summarize how these contextual features (both of the political system and the survey itself) signal how empowered women are in a certain country, and therefore impact the gender gap in political knowledge questions:

Figure 8. Predicted Gender Effect on the Gender Gap in Likelihood of Correct Answer by Women’s Representation and Type of Item



The graph on the left side shows that the coefficient for gender at the individual-level models, that is, the gender gap in political knowledge not explained by differences in learning, drops from about 0.28 to 0.13 when comparing countries with no women in the legislature to countries with half of the lower house composed by females. A similar average gap of about 0.27 is observed for items with mentions of male politicians, while items with no mentions of individual show a gap of about 0.22 points. Finally, items that bring up female politicians show a gender gap of 0.08 that is marginally statistically significant. All in all, the results show that the survey operates as a microcosm of political life, by either referencing a topic that is highly

gendered in the country, or by directly bringing up a different set of protagonists that will prime respondents to think about politics in gendered terms. These considerations are unlikely to make the set of information respondents have already stored in their memories through their lives simply disappear, but instead affect how male and female respondents engage in using the information they already have when they are asked to think more effortfully about politics during the survey. The next section will present results from an experiment that provides evidence that this is in fact the case.

Among the country-level substantive controls, the GDP Per Capita has a surprisingly positive effect on the gender gap. Another interesting result is that countries with gender quotas tend to have higher gender gaps in the extent to which respondents display political knowledge. This result suggests that quotas might be seen by ordinary citizens as signaling the existence of the stereotypes in the first place, which might in turn produce the effect of stereotype threat when they respond questions of political knowledge and think about politics more generally.³⁵ Consistent results also emerge regarding the features of the items. Items about foreign affairs, international organizations, and items involving quantitative tasks tend to have higher gender gaps. These results suggest that gender stereotypes of competence are also area- and task-specific. The model quality index also has the expected positive effect on the gap, since items that are generally better at measuring knowledge should be better at capturing larger and more precise effects of independent variables.

³⁵ Consistent with that interpretation, comparing countries with and without gender quotas produces different results depending on whether the item asks about male or female politicians. The results in Table 4 reflect the relationships found among country-years without gender quotas (about 70% to the total). However, for country-years with gender quotas, items asking about female politicians tend to have a larger gender gap than neutral ones, which suggests that it might be harder for female politicians to break stereotypes in those contexts.

However, one main limitation of this kind of analysis is that it does not tell us the direction of the causal relationship between female representation and the gender gap in knowledge. Is it women's representation that affects the gender gap in the questions, or is it a change in the gender gap that affects future levels of women's political representation? Moreover, the analysis does not address properly the possibility that other unmeasured confounding factors could be driving the observed results. In the following section I turn to an experimental design that overcomes the problems in the cross-national observational analysis. I use data from a survey experiment with American subjects in order to show that priming respondents to think about different levels of female representation impacts how they perform in political knowledge questions. The U.S. case suits the purposes of the present study well for two main reasons. The first is that, while political knowledge questions have been asked in wide range of countries around the world, most of the theories and findings about the gender gap in political knowledge come from studies that focus on American respondents. Therefore, the findings from the survey-experiment in the next section also speak to that body literature. Second, the U.S. is to a certain degree an average case with respect to women's representation and gender stereotyping, which also contributes to the extent to which the findings generalize to other countries.³⁶

Finally, the experiment not only helps us build upon the observational data, but also provides insights about the psychological mechanism underlying the effect of female representation on the gender gap in political knowledge.

³⁶ While the U.S. has a low percentage of women in parliament relative to other developed countries, it has a relatively high number of prominent female politicians at the national level. Moreover, according to the World Values Survey wave of 2006, less than a quarter of American respondents agree with a statement saying that men make better leaders than women, which represents a lower value than the average cross-national rate of agreement with the statement.

Priming Gender in the Survey Context

The experimental data presented in this section were collected through Time-Sharing Experiments for the Social Sciences (TESS, funded by the National Science Foundation). In this study, a total of 1,038 American citizens over 18 years old (498 men and 540 women) were recruited during March of 2014. Respondents were randomly assigned to three experimental conditions.³⁷ One treatment condition consisted of a battery of feeling thermometers towards eight prominent American male politicians (Barack Obama, Dick Cheney, George W. Bush, John Kerry, Mitt Romney, Bill Clinton, Al Gore, Colin Powell). Another condition gave respondents a similar battery of feeling thermometers that differed in that four of the politicians were male (Barack Obama, George W. Bush, Mitt Romney, Al Gore), while the other four were female (Sarah Palin, Nancy Pelosi, Hillary Clinton, and Condoleezza Rice).³⁸ A third group was sent directly to the knowledge battery at the beginning of the survey, and therefore did not receive any feeling thermometers and is used here for baseline comparisons.³⁹

³⁷ A total of 60 respondents completed the survey in either less than a minute or more than an hour. They are excluded from the analyses below. This exclusion does not affect randomization or produce additional sample imbalances.

³⁸ The politicians in each experimental condition were selected and paired according to their reputation and likability, based on data from a pretest study.

³⁹ The preface to the battery of feeling thermometers was the following: “We’d like to get some of your feelings toward some of our political leaders. Below you’ll see the names of eight prominent politicians and will be asked to rate each one of them using the feeling thermometer scale.”

Table 5. Treatment Conditions

Control	"All-Male" Thermometers	"Mixed" Thermometers
No Feeling Thermometers	1. Barack Obama	1. Barack Obama
	2. <u>Dick Cheney</u>	2. <u>Sarah Palin</u>
	3. George W. Bush	3. George W. Bush
	4. <u>John Kerry</u>	4. <u>Nancy Pelosi</u>
	5. Mitt Romney	5. Mitt Romney
	6. <u>Bill Clinton</u>	6. <u>Hillary Clinton</u>
	7. Al Gore	7. Al Gore
	8. <u>Colin Powell</u>	8. <u>Condoleezza Rice</u>

The goal of the two main conditions is to prime respondents in different ways about the extent to which women perform important leadership roles in politics. The first one intends to prime respondents to see politics as a man’s game, while the second tries to present a more balanced idea of politics in which the game is played both by male and female prominent figures. Using feeling thermometers rather than more explicit manipulations for priming considerations about female representation is crucial in order to understand why survey research around the world shows a consistent gender gap in political knowledge. Since those surveys do not include explicit statements telling respondents about the existence of the gender gap, and given that feeling thermometers about prominent politicians are widely used in survey research, I propose they can be useful for priming respondents to think about who are the main players of the political game.⁴⁰

⁴⁰ As a manipulation check, one of the questions of the knowledge battery asked subjects how many of the nine members currently serving on the U.S. Supreme Court are women. The average proportion of respondents that said a number higher than 3 (correct answer) rises from about 7% in the baseline and “all-male” thermometers to about 12% in the “mixed” thermometers. Using a multinomial model (having underestimate, correct, overestimate, and

After the manipulations, all respondents answered six open-ended political knowledge questions. The questions asked about the length of the senatorial term, the name of the first ten amendments to the U.S. Constitution, the political office held by John Boehner, the name of the President of Russia, the political party with most seats in the House, and whose responsibility it is to determine if a law is constitutional or not.⁴¹ These items are standard knowledge questions in surveys of U.S. respondents, with well-known reliability, and moderate levels of difficulty. Therefore, the results from the manipulation apply to questions that are of standard use in the literature that focuses on the American case, and not attributable to a particular choice of items. Moreover, in order to minimize the extent to which subjects could look the answers up on the internet during the survey, they were given 40 seconds answer each question. The responses were re-coded as 1 for correct and 0 for incorrect or “don’t know” answers. I added the number of correct answers and re-scaled the scores to range from 0 to 1, in order to show how the manipulations affect the standard measures from more conventional studies of the gender gap in political knowledge.⁴² The Cronbach’s Alpha of the battery equals 0.77 and indicates a moderate level of reliability.

Three OLS models assess the magnitude of the gender gap in political knowledge across the three experimental conditions. The models regress the scale of political knowledge against the gender of respondents (1 corresponding to male respondent), controlling for education, income, race (white=1), religiosity, marital status (single=1), duration of the interview in

“don’t know” as categories) with control variables, the predicted proportion of subjects overestimating the number of woman in the Supreme Court rises from 7% to 14% ($p < .05$). See appendix table A3.7 for results.

⁴¹ See appendix table A3.5 for question wording and distribution of responses.

⁴² The last model presented in this section looks at items separately, and also distinguishes “don’t knows” from incorrect responses.

minutes, and the squared duration of the interview.⁴³ Table 6 shows the main results from the three models:⁴⁴

Table 6. OLS Models of Predictors of Political Knowledge in Experiment

Predictor	Baseline	"All-Male"	"Mixed"
Male	0.14* (0.03)	0.10* (0.04)	0.05 (0.04)
Education	0.49* (0.11)	0.50* (0.12)	0.53* (0.14)
Income	0.22* (0.07)	0.24* (0.08)	0.33* (0.10)
White	0.14* (0.04)	0.13* (0.04)	0.07 (0.04)
Religious Activity	0.00 (0.05)	-0.11 (0.06)	-0.05 (0.06)
Single	-0.04 (0.04)	-0.03 (0.05)	0.05 (0.04)
Duration	-0.12 (0.64)	0.09 (0.48)	0.72 (0.47)
Duration Squared	0.37 (1.22)	-0.74 (0.77)	-1.09 (0.56)
Constant	-0.08 (0.08)	-0.06 (0.10)	-0.11 (0.12)
R ²	0.29	0.27	0.23
n	329	324	318

*p<.05 (two-tailed). Standard errors in parentheses.

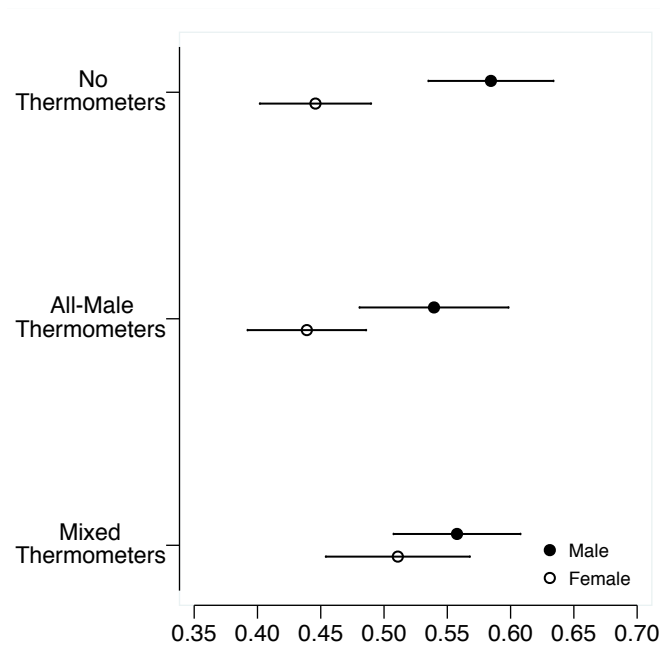
⁴³ Based on balance checks both across experimental conditions and between gender categories within each experimental condition, the models used here include variables that presented imbalances in order to reduce the amount of error in the estimation of the average treatment effect, following Gerber and Green (2012). Variables such as age, partisanship, and ideology, despite having an effect on knowledge, are not included in the models because they did not present imbalances. This omission does not change the results. For descriptive statistics of the variables used, see appendix table A3.6.

⁴⁴ All the analyses with data from the experiment use the post-stratification weights provided by TESS. The weights adjust the sample for non-response and for non-coverage and under- or over-sampling resulted from the sample design implemented.

The results confirm the expectation that priming considerations about the levels of female representation in politics affects the gender gap in political knowledge. The gender gap for respondents on the control group (that did not receive any feeling thermometers) equals approximately 0.14 points. For respondents who receive the feeling thermometers with only male politicians, the gap is 0.10 points. Both these differences are statistically significant at the 0.05 level. For respondents who receive feeling thermometers about 4 male and 4 female politicians prior to answering the knowledge questions, the gender gap decreases to approximately 0.05 points, which is not a statistically significant difference. One surprising result from Table 6 is the decrease in the gap between the first two conditions. In order to unpack that result, Figure 9 shows the predicted values for male and female respondents across the three experimental conditions, based on the estimates from Table 6.⁴⁵

⁴⁵ A similar study was conducted in September 2013 with respondents recruited using Amazon's Mechanical Turk (with an average of 200 subjects by condition). The design was essentially the same, and the results also showed a non-statistically significant gap of 0.09 points for the "mixed" thermometers condition. The main difference in the findings is that with the MTurk sample, the baseline gap was lower than the "all-male" thermometers gap (0.12 against 0.18).

Figure 9. Predicted Knowledge Scores by Treatment Condition in Experiment



While women’s performance remains the same between the first and the second conditions, showing politicians of either sex to male respondents makes them more likely to disengage from the task of answering the knowledge questions, since their performance shows a slight decrease. Women’s performance increases when they receive the mixed feeling thermometers, which provides evidence that stereotype threat might be the underlying cause of underperformance in the other two conditions. Among male respondents, the average score is higher for the baseline condition and very similar in the two remaining conditions. However, these differences for men and women are not strong enough in order to allow one to attribute the variation in gender gap across conditions to either stereotype threat or stereotype lift. Instead, it

seems to be the combined reaction of females to threat and males to lift that produces the change in the gender gap in performance.⁴⁶

One relevant question at this point is how the treatments affect the specific responses given to the questions. Since the recoded knowledge items in the final additive scores combine incorrect and “don’t know” answers, another way to examine the results would be to check for possible differences in respondents’ likelihood of using these two categories. Different studies argue that part of the explanation for the gender gap in knowledge lies in the fact that women would be more likely to give “don’t know” responses, even when they know the correct answer (Mondak and Anderson, 2004; Mondak and Canache, 2004; Lizotte and Sidman, 2009).⁴⁷ According to part of this literature, “don’t know” responses would reflect not just lack of knowledge, but traits such as shyness and risk aversion instead of simple lack of knowledge. Also, women would be more likely to use the “don’t know” option as a way out of knowledge questions. Another possibility is that this differential propensity to guess could be explained by situational factors, as suggested by the above findings. It is possible that the mechanism through which priming considerations about gender stereotypes in politics affects the knowledge gap is related to cognitive effort. The exposure to those stereotypes might impact negatively the performance of female respondents because they become less willing to engage in searching for the answer in their memories while coping with the stereotypes. As a consequence, female

⁴⁶ In the study using the MTurk sample, I also included an experimental condition with 8 female politicians in the feeling thermometers (adding Elizabeth Dole, Madeleine Albright, Barbara Boxer, and Michelle Bachman to the list presented above) The resulting gender gap for this condition was 0.17 points. This result seems to indicate the manipulation primed gender stereotypes instead of counteracting them. It is possible that respondents saw that representation as not realistic and as a type of tokenism.

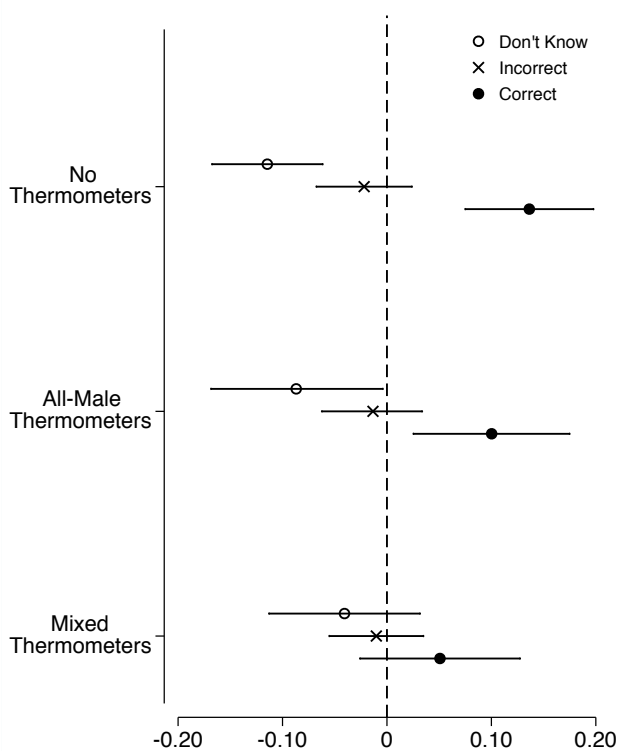
⁴⁷ On the other side of the debate, Luskin and Bullock (2011) argue that “don’t know” responses would in fact indicate lack of knowledge, which implies that the differential propensity to guess would not be a factor driving the gender gap in performance.

respondents become less likely to display knowledge they actually have stored in their memories. On the other hand, male respondents might feel a boost in confidence that not only motivates them to engage in the task and successfully retrieve the required information, but also to become more likely to guess, which results in a better performance relatively to if they had not been exposed to the stereotypes.

It is possible to use the same experimental data described above to test if stereotype threat, made salient by considerations about female representation, is the underlying mechanism that explains the gender gap in propensity to pick the “don’t know” option. In order to test this claim, I stacked the data to create a dataset of 6,228 respondent- items, with each respondent appearing six times. I then generated one single indicator of whether the respondent gave a correct, incorrect, or “don’t answer” to each of the knowledge questions. In this way, each of the six times the same respondent appears in this new dataset, the new variable takes on the value of the type of response he or she gave in each of the six knowledge questions. Then I ran a multinomial logit model to explain the overall likelihood of selection of each of the three possible responses: correct, incorrect, and “don’t know” (DK). The model controls for the same variables used in the models from Figure 2.3, and also includes item fixed effects and clustered standard errors for respondents:⁴⁸

⁴⁸ See appendix table A3.8 for full results.

Figure 10. Predicted Gender Gap for Each Response Option by Treatment Condition in Experiment



The patterns that emerge from Figure 10 show that the manipulations affect mostly the way respondents move between saying “don’t know” and giving a correct answer. First, the likelihood of incorrect response for men and women is equal, irrespective of the experiment condition. In the baseline and in the condition with only male thermometers, women are more likely than men to give “don’t know” responses. The opposite holds for correct answers in the right side graph. In the “mixed” thermometers condition, men and women are virtually identical in their propensities to say “don’t know” and to answer correctly. Therefore, the findings point to at least two important conclusions about the meaning of “don’t know” answers and the nature of

the effect of stereotype threat. First, the findings corroborate the hypothesis that respondents' propensity to guess or give "don't know" answers explains a substantial part of the gender gap in political knowledge (Mondak and Anderson, 2004; Mondak and Canache, 2004). Second, and most relevant for the present study, the extent to which respondents are primed by the idea that politics is a man's game seems to be a major explanatory factor for why female respondents are more likely than their male counterparts to disengage from trying to answer knowledge questions, even when they have what it takes to get the correct answer.⁴⁹

Conclusion

In this chapter I show that gendered political contexts, through both the underrepresentation of women in political institutions and cues provided by surveys' questions affect respondents' performance in questions of political knowledge. Using comparative cross-national surveys, I show that increasing the level of female representation across countries decreases the gender gap in political knowledge, even after controlling for individual-level variables such as education and political interest, among others. Moreover, I show that the gender gap in performance is higher when questions mention male politicians, and lower for questions about female politicians. I then use a survey experiment in order to examine the causal effect of female representation on performance in knowledge questions. By manipulating the

⁴⁹ I conducted other similar versions of this experiment using MTurk respondents in which I added questions on possible mediators of the effect of priming stereotype threat on the gender gap. Neither political interest, internal efficacy, or open endorsement of sexist views about women in politics were affected by the manipulation, suggesting that the psychological mechanism is indeed more subtle than what can be captured by direct questions (Smith, 2004).

gender composition of batteries of feeling thermometers, I show that the gender gap decreases substantially when respondents are primed to think of higher levels of female representation.

The results suggest that the level of women's political representation may help explain the variation in the gender gap in political knowledge found across different contexts. The underrepresentation of women in the political domain reminds respondents of negative gender stereotypes when they are invited to think about political affairs in their country. As a consequence, female respondents might feel pressured not to confirm those stereotypes, and by coping with such load of considerations, withdraw from engaging in political tasks, especially the ones that require high cognitive processing such as the political knowledge quiz. Hence, one of the main implications of the research discussed here is that women may often have the underlying ability that is required for answering a knowledge question and thinking about politics more broadly, but situational factors can make them withdraw or fail to use and display such ability. Male respondents, on the other hand, might experience a boost in confidence and propensity to guess when exposed to the stereotypes, which in turn increases their performance in the knowledge test.

In this sense, another implication of the findings refers to the understanding of what political knowledge questions convey to survey analysts. The first and more common of those understandings is that knowledge questions constitute a quiz that scholars use to find out what exactly people know about politics. The second is that those questions also tap a latent trait or ability that is important in explaining people's opinions and behaviors. The findings presented here suggest a third way to see knowledge questions. The recall questions of political knowledge can also indicate how people use information they have in the face of different environmental

stimuli. They indicate how much cognitive effort respondents put in when they try to retrieve and use information they have stored in memory, and how environmental factors can affect that process. For these reasons, political knowledge questions in surveys are inherently biased because they reflect not just the knowledge respondents have, but also the situational pressures that some respondents have to cope with when answering the survey. At the same time, this weakness of measures of knowledge also shed light on the more fundamental cognitive processes that might affect political engagement more broadly.

Moreover, this chapter shows a way through which the survey instrument can affect what it is trying to measure. In countries where women are underrepresented in politics, the survey questions about politics and government remind respondents that they are talking about a domain of life that is dominated by men. Moreover, surveys might also include questions that signal politics as this gendered domain in their environments. As the results of this chapter show, priming such considerations is consequential for how individuals engage in the task of answering knowledge questions. However, these conclusions do not undermine the value of surveys in the study of public opinion. Instead, the results show that awareness of such process can help analysts better understand how surveys work, and therefore take advantage of that knowledge in studying how people think about politics.

Finally, the findings have implications for democracy and political inclusion. Across different contexts, women and other minority groups are increasingly more engaged in politics, both at elite and mass levels. This process of political inclusion might have not only direct effects on policies and political outcomes, but also affects on how ordinary citizens conceive political life. The results presented in this chapter suggest that increasing the political

representation of minority groups might impact the way ordinary members of those groups think about and see themselves in politics.

CHAPTER 4

Electoral Rules and Aversive Sexism: When Does Voter Bias Affect Female Candidates?

Do voters' attitudes and beliefs about women in politics affect their vote choice? If so, under what conditions does gender bias harm the electoral chances of female candidates? Although part of the scholarship on the topic shows that some individuals hold negative stereotypes about women in politics across countries (Norris and Inglehart, 2001; Morgan and Buice, 2013), the evidence for the effects of those stereotypes on voting behavior and electoral outcomes is mixed (Darcy and Schramm, 1977; Darcy et al., 1994; Seltzer et al., 1997; Sanbonmatsu, 2002).

In this chapter I propose a theory that accounts for the conditional effect of gender stereotypes in politics on voting behavior and the electoral chances of women. By focusing on how voters interact with different electoral rules, I argue that the effect of gender stereotypes on vote choice follows a pattern known as aversive sexism (an adaptation of Dovidio & Gaertner's (2004) "aversive racism"). Aversive sexism denotes that individuals will not discriminate when the normative structure of the choice makes their biases evident to others and to themselves. More specifically, when voters are asked to choose from different individual candidates, the structure of the race will affect the likelihood that a voter will choose based on gender bias. In a race with a small number of candidates competing for the same seat, the ideological differentiation among the choices signals that, when voters do not choose females that are ideologically close to them, they are making a choice based on their bias against female

candidates. In a race with large number of candidates, and consequently with more candidates that are ideologically similar to each other, it is harder to attribute gender bias to vote choices, since for every female candidate there is likely an ideologically similar male that voters can choose without clearly signaling discriminatory behavior. Therefore, in highly personalized electoral systems, that is, in voting systems where the vote is cast for individuals (rather than for party lists), voters will be less likely to vote for women as the number of male co-partisans competing for the same seats increases.

In order to test this claim, I first examine cross-national data on women's representation. I show that, consistent with the aversive sexism perspective, in highly personalized systems, where voters choose among individual candidates and ultimately control their order on the party list, increasing the number of co-partisans (the size of the list) running against each other decreases female representation. Next, I turn to the Brazilian Chamber of Deputies - a legislative body elected through a highly personalized system where several co-partisans compete for the same seats - in order to show more direct evidence of how aversive sexism affects the election of women. I look at post-electoral survey data from the 2010 Brazilian elections and show that, in accordance with the aversive sexism perspective, respondents who do not openly endorse sexist views are largely the ones who vote for women for the first-past-the-post system for the Senate but do not do the same for the open-list proportional system for the Chamber (while openly sexist voters do not usually vote for women in either race). I then use a ballot experiment with Brazilian subjects in order to show that allowing voters to substitute female candidates for male co-partisans without signaling discriminatory behavior harms the electoral success of women running for those legislative seats.

Electoral Rules and Aversive Sexism

Negative views about women running for or occupying elected offices vary substantially across countries, but are usually openly endorsed by only a small proportion of individuals in most places (Norris and Inglehart, 2001; Morgan and Buice, 2013). In most countries, openly negative opinions about women in politics tend to be widely seen as uncivil and as going against the basic principles of equality and democracy. However, as Dovidio and Gaertner (2004, 4) point out, “because of a range of normal cognitive, motivational, and socio-cultural processes that promote intergroup biases,” many individuals tend to hold negative feelings or beliefs towards out-groups at an unconscious level (Greenwald and Banaji, 1995). Despite openly endorsing egalitarian views and rejecting sexist opinions, those individuals are often prone to the influence of negative predispositions towards female authority that do not reach their awareness (Rudman and Kilianski, 2000; Monin and Miller, 2001; Mo, 2015).

Voters will act based upon those hidden or unconscious gender biases depending on the choice structure they face. This pattern of behavior constitutes what is known as aversive sexism, a term I adapt from Dovidio and Gaertner’s “aversive racism” (2004). Individuals who engage in aversive sexism consciously endorse egalitarian views with respect to gender, and do discriminate against women in situations where social norms and the choice structure are strong enough to make discrimination evident to others and even to the subjects themselves. Instead, they discriminate only when the bases for social judgment are weak or ambiguous, so that the gender bias underlying their behavior is unclear to others and/or themselves. The key element in the theory developed here is that, while voters hold ideological predispositions that they are

likely to consider when evaluating issues and candidates (Zaller, 1992), they also have baseline gender preferences that might have some weight in their decisions (Sanbonmatsu, 2002). However, while casting a vote based on ideology is seen as a legitimate expression of political preferences, choosing candidates based on their gender is not. Therefore, the extent to which voters' biases against female candidates will affect their voting behavior will depend on whether ideological and gender predispositions overlap in the context of the electoral choice.

In an election in which voters have to choose from a small number of candidates, each from a different party, there is some probability that one of the parties enters a female candidate in the race. In that case, voters from that party will likely find the female candidate to be the ideologically closest to their political preferences. For a voter that has a bias against female candidates, this situation presents a conflict between his/her ideological positions and gender bias. Voting against the female candidate who is ideologically closer in this case not only sacrifices ideological proximity, but may also be taken by others and by the voter herself/himself as a clear expression of gender bias, which many people want to avoid. In elections in which there are several seats available within the same district, parties have incentives to enter as many candidates as there are seats available, which increases not only the overall number of candidates in the race, but also the number of co-partisan candidates competing with each other. In that situation, there is a higher chance that voters will be able to find a male candidate that is as ideologically close or nearly as close to his/her preferences as the closest female candidate. As a

consequence, biased voters can avoid casting a vote for a female that they would otherwise be forced to pick if the structure of the race were different.⁵⁰

The decrease in voters' likelihood of choosing a female in a race in which several male co-partisan candidates (substitutes) compete for the same seat constitutes a defecting behavior. Some voters see themselves with no ideologically viable alternative other than voting for a woman in a single-member district (SMD) race, but can get away with avoiding that same female candidate in an open-list proportional (PR) race where male co-partisans offer justifiable choices. More importantly, given that this pattern of behavior is driven by a covert motivation to avoid the attribution of discriminatory intent, defection will be more likely among individuals who do not openly endorse negative stereotypes about women in politics. From the standpoint of the aversive sexism theory, overtly sexist voters will have no problem refusing to vote for ideologically close female candidates in SMD races, as long as their attitudes towards women in politics are as strong as or stronger than other political predispositions.

- Substitution Hypothesis: Voters will be less likely to choose female candidates when there are male co-partisans (substitutes) running for the same seat.
- Aversive Sexism Hypothesis: Substitution is more likely to be performed by voters who do not openly endorse sexist views about women in politics (covert sexists), since overt sexists will avoid voting for female candidates independent of whether male substitutes are available.

⁵⁰ The argument takes ideology and co-partisanship in this case as two out of several possible candidates' characteristics that voters tend to rely on when selecting candidates. Replacing those terms by any other characteristic that voters perceive to vary across candidates - such as experience, charisma, or region of origin - does not change the logic of the argument developed here.

The main assumption of the Aversive Sexism Hypothesis is that the open expression of negative views about women in politics reveals not only people's underlying levels of sexism, but also individuals' propensity to openly express those views. This implies that individuals who openly display support for those negative views are less likely to be hiding their underlying biases than the ones who openly reject those views in favor of more egalitarian beliefs. Due to the covert nature of this behavior, aversive sexism is more likely to be performed by individuals who do not openly endorse sexist views. If direct survey questions of sexist views about women in politics measure exclusively individuals' levels of sexism, the results of using this measure in any analyses should reveal the exact opposite patterns from the Aversive Sexism Hypothesis. In that case, instead of aversive sexism, we should observe the defection to occur among individuals who score high on the direct measure of sexism. It is possible that openly sexist voters realize that casting a vote against an ideologically close woman in a SMD can directly result in electing an ideologically distant male. However, when casting a vote in the open-list proportional race with several co-partisan candidates, the overt sexist does not face that predicament, and hence casts a vote for an ideologically close male candidate without the cost of potentially benefiting an opponent. If this overtly sexist behavior prevails, the Substitution Hypothesis still holds in the aggregate. However, the prediction is the opposite from the Aversive Sexism Hypothesis when it comes to who defects, since this time openly sexist voters are the ones performing the defection:

- Sincere Sexism Hypothesis: Substitution is more likely to be performed by voters who openly endorse sexist views about women in politics, since non-sexist voters will choose female candidates independent of whether male substitutes are available.

Another perspective argues instead that gender bias would become more likely to affect voting behavior under complex electoral environments and ballots (Aguilar et al., 2015). A large number of ideologically overlapping candidates produces a very complex choice set in which learning about candidates is hard. As a consequence, voters become more likely to rely on candidates' individual characteristics, such as gender. However, using a ballot experiment with Brazilian subjects, Aguilar et al. (2015) do not find that voters become less likely to vote for women when they are presented with ballots with higher numbers of candidates. Alternatively, the aversive sexism perspective suggests that it is not simply the higher number of options that makes voters less likely to vote for females. Instead, it is the number of substitute male candidates, that is, the availability of male candidates with similar characteristics to the female ones, which is an expected consequence of a system where more co-partisans compete for the same seat.

A Cross-National Test of Aversive Sexism and Personalized Politics

According to the theory developed here, women are less likely to win seats when electoral rules allow parties to enter multiple candidates for the same seat. In that case, the presence of co-partisan competition allows voters to substitute ideologically close female candidates with male ones, without clearly signaling discriminatory behavior. In this sense, electoral rules constitute the normative structures that determine when covert gender bias will be more likely to affect behavior. Electoral systems that allow voters to engage in substituting

ideologically close female candidates with male co-partisans provide the weak and ambiguous normative structures that make it harder for individuals to tell when others and themselves are engaging in discriminatory behavior. How does this theory help us understand cross-national levels of female representation?

Curiously, the comparative literature on women's representation provides evidence that PR systems display higher levels of female representation than SMD systems due to factors related to higher level of co-partisan competition. According to several studies, voting systems with higher district magnitude tend to elect more women for parliament (Darcy et al., 1994; Kenworthy and Malami, 1999; Matland, 1993; Reynolds, 1999; Rule, 1987). When parties run in larger districts, that is, in districts with more than a seat available, they have incentives to enter more than one candidate in the race (party list) (Carey and Shugart, 1995, 431). A larger number of seats available, as well as the need to maximize the vote share in order to win more seats, give parties incentives to make their lists of candidates more balanced with the inclusion female candidates. At first sight, this pattern of higher female representation among PR systems with higher district magnitude contradicts the expectations of the aversive sexism perspective outlined above, since higher district magnitude is associated with higher co-partisan competition. However, there is also evidence that district magnitude is not the main explanatory factor of female representative in legislative bodies. Instead, some studies find that women's representation is tied more directly to the extent to which electoral systems create incentives for candidates to cultivate personal votes (Thames and Williams, 2010; Valdini, 2013). According to this explanation, when parties have more control over access and position of candidates in their

lists and ballots they become better able to balance the party list, which in turn increase the chances of female candidates being elected.

The latter argument provides an important qualification that helps to explain when higher district magnitude, that is, higher co-partisan competition, will harm the representation of women in parliaments. While increasing co-partisan competition has on average a positive effect on the election of women, it might only do so as long as parties, rather than voters, control the access and position of candidates in the ballots. In other words, increasing co-partisan competition elects more women only in systems that are not personalized (where voters cast votes for lists rather than candidates, and where parties control the position and access of candidates to the ballot). Hence, the main implication of the theory proposed here for understanding cross-national levels of women's parliamentary representation is that increasing co-partisan competition (through high district magnitude) harms the electoral chances of female candidates in electoral systems where voters rather than parties control the position of candidates in the party list (highly personalized systems).

In order to verify this claim, I examine whether the effect of district magnitude on a country's proportion of women in the lower house is conditional on how much control voters have over the list. Based on data on the proportion of women in a country's lower house from 2012, and data on district magnitude and the index of incentives for personal vote from Johnson and Wallack (2006), Figure 11 plots the hypothesized relationships between the three variables for 92 countries around the world for which data is available on the three variables of interest

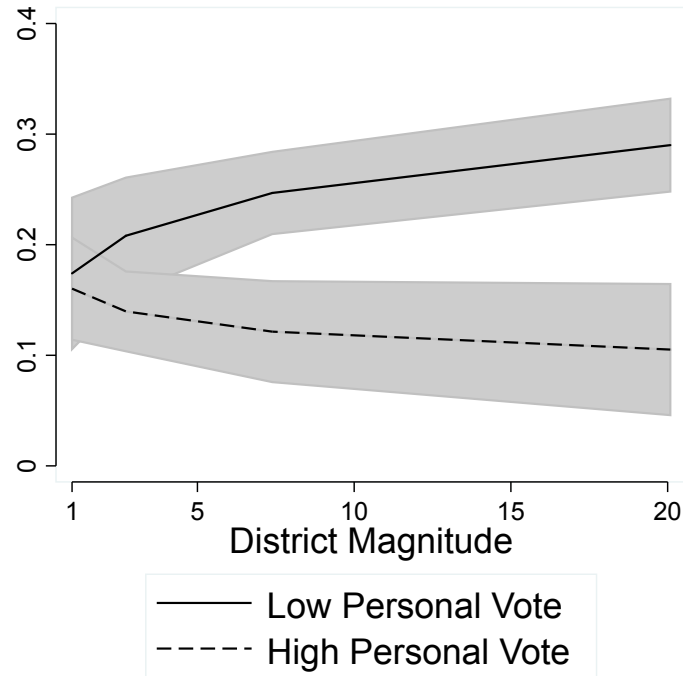
here.⁵¹ The predicted values in the graph come from a generalized linear model with a logit link and robust standard errors.⁵² The model controls for the presence of gender quotas in the country, whether the country had a female head of state in the previous 50 years, length of women's suffrage in the country, the country's per capita GDP, the Polity II index of democracy, the Human Development Index (HDI), and dummy variables for the main religion in the country:⁵³

⁵¹ The statistical model uses the natural log of the average district magnitude due to the presence of outliers in the data. For the sake of interpretation, the figure uses values from a transformation of that variable back to the original values for district magnitude. For full results, see appendix Table A4.1.

⁵² This model tries to account for the fact that the dependent variable reflects the distribution of proportions (bounded between 0 and 1).

⁵³ Data about gender quotas was obtained from the Global Database of Quotas for Women at <http://www.quotaproject.org/aboutquotas.cfm>. Data about female leaders comes from the World-wide Guide to Women in Leadership (<http://www.guide2womenleaders.com>). Data about the length of women's suffrage was collected from Pippa Norris' webpage for the Democracy Cross-National Data (<http://www.hks.harvard.edu/fs/pnorris/Data/Data.htm>). The HDI comes from the UNDP web-site (<http://hdr.undp.org/en/statistics/hdi>), and religious majorities were collected from the World Factbook, by the CIA (<https://www.cia.gov/library/publications/the-world-factbook>).

Figure 11. Predicted Proportion of Women in the Lower House by District Magnitude and Incentives for Personal Vote



The results from Figure 11 show that the effect of increasing co-partisan competition via district magnitude is conditional on the level of personalization of the electoral system. In electoral systems where parties have high control over access to the ballot and positions on the list, such as in closed-list systems, larger district magnitude is associated with higher proportions of women holding seats in the lower house.⁵⁴ The effect is statistically significant at .01 (one-tailed test). This pattern is consistent with the overall hypotheses from the literature. However, consistent with the expectations from the aversive sexism perspective, in electoral systems where voters have control over which candidates are at the top of the party list (high personalization),

⁵⁴ This result holds for the subset of proportional systems, but is not observed among the subset of countries with plurality/majoritarian systems, since there is little variation in both district magnitude and personalization among those systems.

increasing the number of co-partisan alternatives decreases the proportion of women elected for the lower house. This effect is statistically significant at .10 (one-tailed test). Hence, giving voters more co-partisan options in highly personalized systems harms the electoral success of women.

The evidence presented in this section shows that, in countries with electoral systems that allow voters to determine which specific candidates get elected (rather than which party list is preferable), increasing the number of co-partisans running for the same seats (in large electoral districts) decreases the proportion of women elected for the lower house. According to the theory developed here, this is due to the fact that high co-partisan competition increases the opportunities for voters to substitute ideologically close female candidates with male co-partisans. Therefore, certain electoral systems provide the ambiguous normative structure that makes aversive sexism more likely to occur. The next three sections look at the Brazilian case in order to test the hypotheses developed above. The analyses overcome some shortcomings in the cross-national analysis by taking into account the proportions of female candidates running, as well as holding constant country characteristics that might produce noise in cross-national comparisons.

The Case of the Brazilian Legislative Elections

Despite the fact that Brazilians re-elected their female president Dilma Rousseff in the 2014 general elections, the results were not as positive for female candidates running for the

Brazilian Chamber of Deputies (lower house). In the race for the Chamber, only 51 out of 513 (9.9%) elected members were female, placing the country at the 113th position in the worldwide ranking of women in parliaments, according to the Inter-Parliamentary Union. The Brazilian Chamber falls short not only in comparison to other lower houses around the world, but also in comparison to the Brazilian Senate, which elected 19% of females in the 2014 elections. All in all, the legislative body with proportional rule and gender quotas in Brazil presents lower female representation and lower electoral success of female candidates than its quota-less first-past-the-post counterpart. Why does Brazil defy the logic when it comes to the roles that electoral rules can otherwise play in increasing the number of female legislatures?

Two specific features of the Brazilian case pose a challenge to the literature on electoral rules and women's representation. The first is that, running counter to what one would expect from world wide patterns identified by empirical research (Darcy et al., 1985, 1994; Lijphart, 1999; Norris, 2006), women are less successful in the proportional races for the Chamber of Deputies than in the single-member district races for the Senate. The comparison of the electoral outcomes between the two houses of the Brazilian Congress provides an interesting case, since each house is elected through a different voting system. The Chamber of Deputies (lower house) uses an open-list d'Hondt proportional representation system, while the Senate (upper house) uses an SMD system. The races for both legislatures take place within the same electoral districts, which correspond to the 27 Brazilian states. In this way, votes are cast for individual candidates for each of the legislative positions, but under very different rules.⁵⁵ While the Senate

⁵⁵ In the proportional races, voters can cast votes for party labels rather than individual candidates, but this practice is rather uncommon. In 2014, about less than 10% of valid votes for the Chamber were for party labels (www.tse.jus.br/eleicoes/estatisticas).

uses first-past-the-post races in which a few candidates (one from each party) run for the seat, like congressional races in the U.S., the elections for the Chamber are open-list PR races in which voters have to pick one out of potentially hundreds of candidates from all parties.⁵⁶ Therefore, differences in electoral outcomes observed between the two houses cannot be attributed to differences in the composition of the electorate, but instead reflect the features of the races and their impacts on parties, candidates, and voters.

The second feature of the Brazilian case is the failure of the gender quota rule for the Chamber approved by the country's parliament in 1997. This failure also contradicts observed trends in comparative research (Dahlerup and Freidenvall, 2005; Schwindt-Bayer, 2009; Hughes, 2011). In 1997, the Brazilian parliament approved Law 9.504 (Article 10 (3)), which stated that parties should "reserve" a minimum of 30% of the candidacies in their list to each sex. However, parties often took advantage of the ambiguity in the term "reserve" in order to justify failures to meet the quota, by arguing that an insufficient number of females claimed the "reserved" spots. In face of the failure of the quota law, the Brazilian parliament approved an amendment in 2009, changing the text to state that parties should "fill" (and not just reserve) 30% of their lists with candidates of each sex. Additionally, in case parties failed to fill the requirement, they would not be allowed to transfer unclaimed female spots to male candidates.⁵⁷ Despite this change in the quota rule in 2009, the proportion of seats won by female candidates for the Chamber did not increase in the following elections (2010 and 2014). This deviant (from what theory would

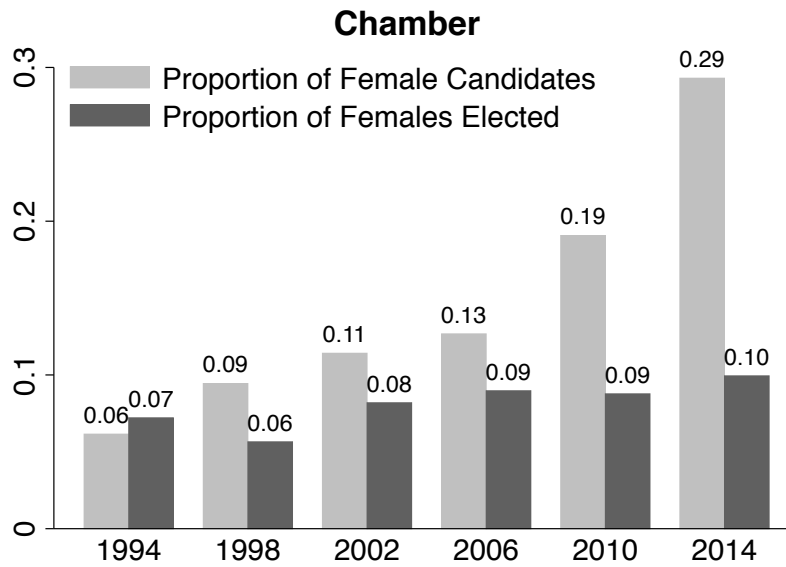
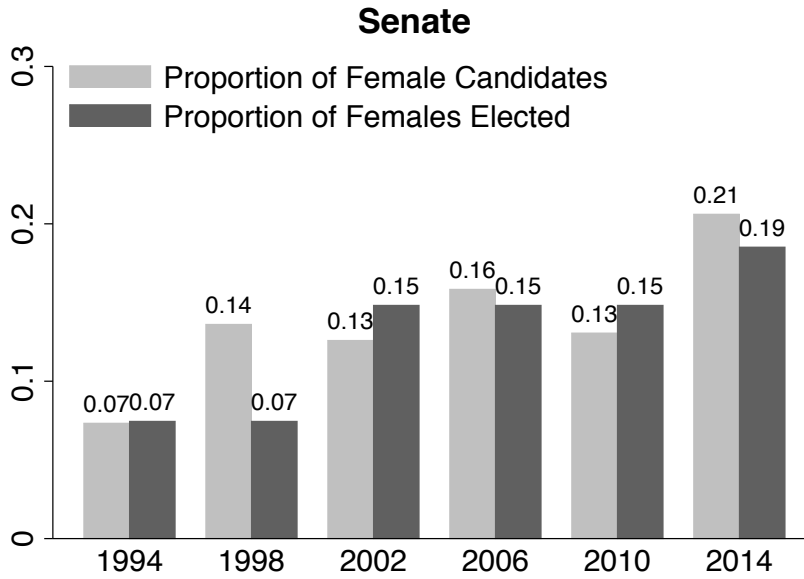
⁵⁶ For the Senate, every other election (1994, 2002, 2010) elects 2 senators (while 1998, 2006, and 2014 elected only 1), since there are 3 senators per state.

⁵⁷ However, the electoral law was also changed in order to allow parties to submit longer lists, raising the maximum size from 100% to 150% of the number of seats in the district (state). Therefore, parties were able to enter the same number of male candidates they were entering before, since the lists became larger to accommodate the quota provision.

predict) outcome is exceptional, but not entirely unique. In other cases of highly personalized open-list PR systems around the world, such as Indonesia (Hoodfar and Tajali, 2011), Peru (Schmidt and Saunders, 2004), and Poland (Górecki and Kukolowicz, 2014), the adoption of legislated candidate quotas did not increase the electoral success of female candidates.

Figure 12 below illustrates the double puzzle of the Brazilian case. The graphs show the proportions of female candidates and elected females both for the Senate and for the Chamber of Deputies in the last six congressional elections in Brazil:

Figure 12. Proportions of Female Candidates and Elected Females in Brazilian Congressional Elections, 1994-2014)



Both the Chamber and the Senate had similar proportions of female candidates and elected females in 1994, but display different paths of growth after that. The Senate shows an increase in the proportion of female candidates over time that is followed closely by the proportion of women elected. In 2014, 21% of candidates and 19% of the winners were female, indicating that female candidates tend to be on average as successful as their male counterparts in getting elected for the Senate. The Chamber also displays a growth in the proportion of candidates until 2006. After the 2009 electoral reform, that growth accelerates, with the proportion of candidates increasing from about 13% to 19% in 2010, and then to 29% in the 2014 elections. However, the proportion of females elected in 2010 remained exactly the same as it was in 2006, at 9%, and showed a very small increase to 10% in 2014.

Why are female candidates more successful when they run for the Senate than when they run for the Chamber in Brazil? What is the mechanism by which the SMD system for the Senate produces better results for women's representation than the proportional system for the Chamber, and why does the latter fare poorly in comparison to other proportional systems around the world? And finally, why has the quota provision for the Chamber failed so dramatically?

The scholarship on elections and gender in Brazil proposes answers for the puzzle above that focus on the supply-side of the electoral process. According to this literature, features of the party and candidate dynamics related to the different electoral rules for the Chamber and for the Senate explain the electoral performance in both houses. The literature on congressional elections in Brazil shows that, due to its high level of personalization, the electoral success of candidates running for the Chamber is largely affected by the amount of resources they use during campaigns (Samuels, 2001). Under these circumstances, the extent to which female

candidates are under-financed relative to their male counterparts plays a major role in explaining the gender gap in electoral success (Speck and Mancuso, 2014). For historical reasons, women tend to have more limited access than men to social and political networks and would have on average lower amounts of personal funds to spend in their campaigns. Moreover, these female disadvantages would not be observed among candidates for the Senate, because in first-past-the-post systems under-financed candidates (mostly females) tend to be excluded by the party nomination process prior to even running in the election.⁵⁸ Since those selection mechanisms are not in place for the highly personalized open-list proportional races for the Brazilian Chamber, the gender gap in campaign resources would explain why female candidates are less likely to be elected for office only in that case. Using candidate-level data, this scholarship provides evidence that female candidates are in fact under-financed compared to male candidates for the Chamber (Sacchet, 2011; Sacchet and Speck, 2012).

Another explanation draws attention to the fact that, given that races for the Chamber involve a high number of candidates with less visibility than the average candidate for the Senate, the visibility provided by incumbency would have larger effects on the chances of election for the former than for the latter. Given that the Chamber is overwhelmingly composed of men, male candidates would have an overall advantage due to the benefits of incumbency (Perissinotto and Miriade, 2009).

However, this same scholarship also shows that one still observes a gender gap in electoral success for the Chamber when comparing male and female candidates with the same amount of campaign resources, candidate quality (education, age, occupation), and after taking

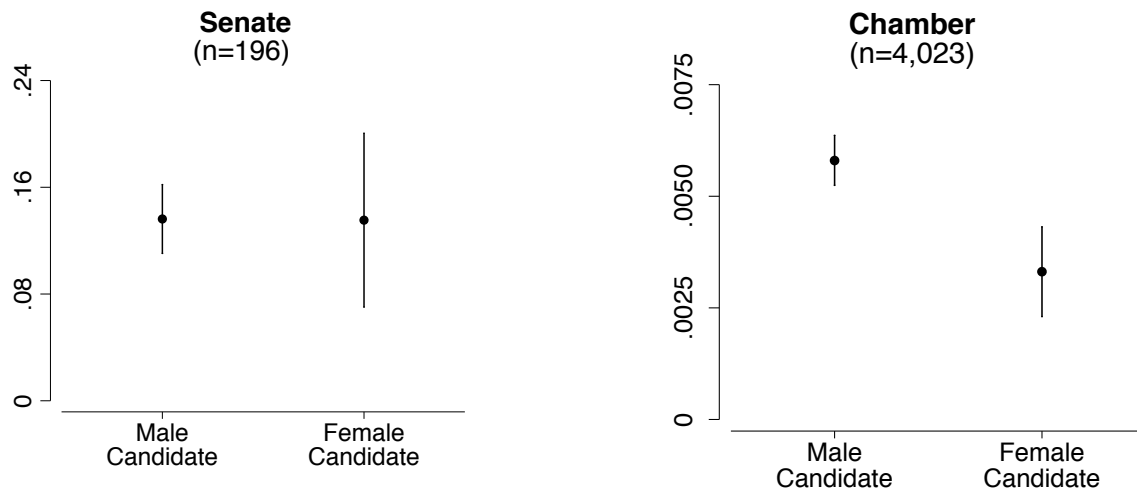
⁵⁸ This is the main argument for why such gender differences in campaign financing are usually not observed in the American case (Uhlener and Schlozman, 1986; Hogan, 2007).

into account their incumbency status. Based on data from the 2010 national elections,⁵⁹ Figure 12 compares the predicted vote shares of male and female candidates for the Senate and the Chamber of Deputies in the 2010 election, after controlling for the conventional factors that explain the gender gap in electoral success.⁶⁰

⁵⁹ The dataset used here comes from the Center for Research in Brazilian Political Sociology (Núcleo de Pesquisa em Sociologia Política Brasileira), at the Federal University of Paraná (UFPR), based on data from the Brazilian Superior Electoral Tribunal.

⁶⁰ The robust OLS models have the natural logarithm of the vote share as dependent variable (re-scaled to actual values in Figure 12). Since the number of candidates competing for the Chamber is higher than for the Senate, the average vote share of those candidates is much smaller, as shown by the y-axes of the graphs. The models control for age (standardized by district), education (standardized by district), the natural logarithm of the total campaign budget (standardized by district), dummy variables for incumbency and marital status, as well as party and state (district) fixed effects. For results, see appendix Table A4.2.

Figure 13. Predicted Vote Share of Male and Female Candidates in Brazil, 2010



As Figure 13 shows, there is still a sizable gender gap in the vote shares of candidates for the Chamber of Deputies even after controlling for factors that are known to be unevenly distributed between male and female candidates for the Chamber in Brazil.⁶¹ Also according to expectations, the gap is not observed among the candidates for the Senate. All in all, the supply-side explanations for the gap do not fully explain why the Brazilian Chamber of Deputies elects so few women. This might still be due to unobservable factors at the candidate-level, but those are not yet accounted for by extant theories at that level of analysis. Therefore, one alternative strategy is to pursue the answer for this puzzle at the other end of the process, with voters.

⁶¹ The statistical decomposition (Jann, 2008) of the gender gap shows that the candidate-level variables in the model account for approximately two thirds of the gender gap in the vote share of candidates.

Aversive Sexism in Brazilian Elections

The difference in performance of female candidates between the Chamber and the Senate fits the theoretical expectations from the aversive sexism perspective. The first-past-the-post (FPTP) race for the Senate, in which each party enters a single candidate for the only seat available, constitutes a choice structure that prevents aversive sexists from engaging in discriminatory behavior. The ideological differentiation among the options makes it less likely that covert sexists will vote against ideologically close female candidates, given that not doing so would signal sexist intent to the voter him/herself and potentially to others.⁶² On the other hand, in the race for the Chamber, where a large number of candidates from the same party compete against each other and against candidates from different parties for the same seats, it is less clear whether voters are discriminating against female candidates when they choose to vote for a man. This ambiguity implies that for every female running there is likely an ideologically similar male opponent that voters can pick. Moreover, these dynamic suggests that, given the large number of male co-partisans for each female candidate running for the Chamber, simply adding more women to the ballot based on the quota rule might not be sufficient to prevent voters from substituting female with similar male candidates.

In the analyses that follow, I use the 2010 wave of the Brazilian Election Study, a post-electoral survey conducted after the second round of the presidential elections.⁶³ The study includes face-to-face interviews with a nationally representative sample of 2,000 Brazilians

⁶² Even though the vote is secret in Brazil, the psychological mechanism of aversive sexism refers to the operation of an unconscious bias that individuals deny having and want to hide from others and from themselves.

⁶³ The study is part of The Comparative Study of Electoral Systems (CSES) project. Data, documentation, and other technical information about the survey can be obtained through the project website (www.cses.org) or by contacting the scholars responsible for the study in each country.

eligible to vote, and includes questions about the main topics related to the elections. The 2010 round of the study is particularly useful for the purposes of this chapter because it not only includes questions about the vote choice for all races (Presidency, Senate, Chamber of Deputies, State Government, State Chamber), but also has a battery of questions on attitudes towards women in politics.

The survey asked three questions on endorsement for negative stereotypes about women in politics. The battery presented three statements on the topic, followed by 5-point agree/disagree scales. The statements asked the extent to which respondents agreed that “men are better suited for a political career than women” (17% agree), that “men tend to govern better when in office than women” (15% agree), and that “women still don’t have the experience needed in order to govern well” (18% agree). The analyses below use factor scores based on the three items as a measure of open endorsement for sexism in politics.

The survey also asked close-ended questions about the vote choice for all majoritarian races (Senate, State Government, and Presidency) and open-ended questions about the vote choice for the proportional races (Chamber of Deputies and State Chamber). I recoded answers as equal to one for votes for female candidates and zero for votes for male candidates.^{64 65} The biggest concern about using these questions is non-response, since many voters forget who they voted for shortly after the election. A total of 39% of respondents said that they had forgotten or did not give valid answers to the question on the vote for the Senate, while 53% was the non-response for the Chamber vote. However, non-response was random with respect to respondents’

⁶⁴ In the open-ended question about the Chamber of Deputies, mentions of inexistent or non-applicable candidates were coded as missing values.

⁶⁵ Since in the 2010 elections two senatorial candidates were elected in Brazil, but only 4 out of 2,000 respondents reported having voted for two female candidates, I recoded any vote for a female candidate as equal to one. This decision does not affect the results of the analyses presented below.

levels of sexism, and therefore the results observed here cannot be attributed to a relevant type of selection bias.⁶⁶

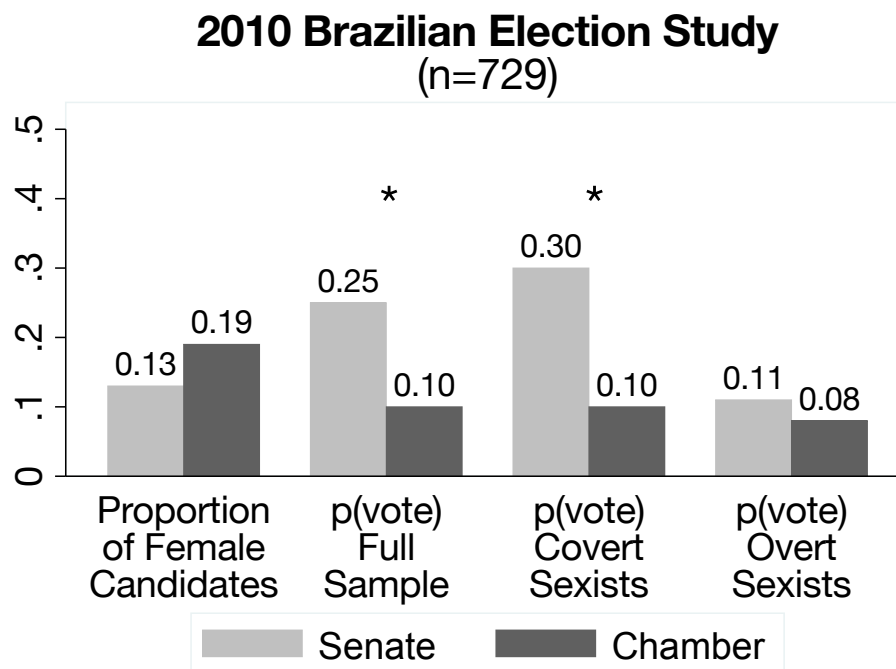
The goal of the following analyses is to test the hypotheses from the aversive sexism perspective by comparing how respondents who openly endorse or reject sexist views about women in politics in the survey voted in the 2010 Chamber and Senate elections in Brazil. For that purpose, I ran probit models for whether respondents voted for a female candidate for the Senate and the Chamber. The main independent variable in the models is the extent to which respondents openly endorse sexist views about women in politics. If the Aversive Sexism Hypothesis is correct, the difference in the proportion of votes for female candidates between the Senate and the Chamber should be larger among respondents who do not openly endorse those views, which are called here covert sexists. If the Sincere Sexism Hypothesis is correct, the difference in the likelihood of voting for female candidates between the Senate and the Chamber should be larger among respondents who score high values on the sexism measure, which are called here overt sexists. It might well be the case that both hypotheses hold, which would result in finding that the difference in proportion of votes for females between the Senate and the Chamber is the same across different levels of open endorsement for sexist views about women in politics. Figure 14 displays the predicted probabilities of a given respondent voting for a female for the Senate and for the Chamber in 2010.⁶⁷ On the left, the bars show the national proportions of female candidates running for each position. These bars are included for purpose of comparison and do not report model estimates. The next pair of bars shows the probabilities of

⁶⁶ I used Heckman selection models in order to verify whether missing data in the vote reports was associated to specific levels of sexism and found no relationship, which in turn did not affect the main relationships explored in the analyses of this section.

⁶⁷ The models consider only respondents who gave valid answers to both questions (vote for Senate and vote for Chamber). For results see appendix Table A4.2.

a respondent reporting having voted for a female candidate considering the full sample. If there is no gender bias in the election, these estimates should approximate the reference bars on the left. Lower bars indicate bias against female candidates. The next bars show the probabilities for respondents at the lowest value in the measure of open sexism (covert sexists), and the right side bars show the probabilities for respondents at the highest value in the measure of open sexism (overt sexists).⁶⁸

Figure 14. Predicted Probability of Voting for a Woman by Level of Sexism and Type of Election



⁶⁸ The models include the following control variables: party identification (dummies for major Brazilian parties), ideology, campaign attention (as reported frequency), newspaper reading frequency, level of information (additive scale of several items), sociotropic and pocketbook economic evaluations, religion (indicators for Catholics and evangelicals), education, urban residency, age, gender, race, and whether the respondent received *Bolsa Família*, and also state fixed effects. The models also use post-stratification weights provided along with the survey data.

Respondents have a 0.25 probability of voting for a female for the Senate, a number that is higher than the proportion of females running (0.13). While there were 19% of females running for those seats for the Chamber in 2010, the estimated probability of a respondent casting a vote for a female is 0.10.⁶⁹ These patterns suggest support for the Substitution Hypothesis. Moreover, the results in Figure 13 provide support for the Aversive Sexism Hypothesis and against the Sincere Sexism Hypothesis. The predicted probabilities for respondents who score low and high values in open endorsement for sexism show that the defection occurs among the former (covert sexists). While these voters have an average probability of about 0.30 of voting for a female for the Senate, this probability drops to about 0.11 for the Chamber. On the other hand, the type of election does not affect overt sexists. They have an average probability ranging between 0.11 (Senate) and 0.08 (Chamber). In other words, while overtly sexist voters avoid voting for women under both electoral rules, covert sexists are the ones affected by the structure of the choice set.⁷⁰

Even though the analysis above provides support for the Substitution and Aversive Sexism Hypotheses, it presents limitations inherent to observational designs. First, the survey data is less reliable, since there might be biases with respondents' recall of their votes. Second, the analysis does not capture the specific elements of the causal mechanism that the theory of

⁶⁹ Because of the aggregation of all states (districts) and the use of the d'Hondt formula to define the parties' seat shares for the Chamber, the values on Figure 4 cannot be translated directly to the percentages of females elected as displayed on Figure 12.

⁷⁰ A very similar pattern of results is found when comparing the vote choices for State Governor (SMD) and State Legislator (open-list PR) at the state level. While the probability of voting for a female for State Governor are much closer to the proportion of female candidates running for that position, the probability of voting for a female for the State Chamber are lower. That gap is larger for covert sexists, consistently with the Aversive Sexism Hypothesis. For results, see Figure A4.1.

aversive sexism suggests are the ones influencing the observed patterns of behavior. In other words, while the comparison between the Chamber and the Senate seems to allow one to attribute the observed differences to the design of the electoral rules for each house, there is still uncertainty about whether it is in fact the introduction of male co-partisans (substitutes) in the proportional race that allows covert sexists to get away with discriminatory behavior when they cast votes for the Chamber. For these reasons, the next section discusses results from a ballot experiment with Brazilian subjects that attempts to address these issues present in the observational design.

Evidence from a Ballot Experiment

This section presents results from a ballot experiment conducted with Brazilian subjects during May of 2015. The experiment manipulates the hypothesized choice set features that are expected to allow voters to substitute ideologically close female candidates with male co-partisans, as in the race for the Chamber of Deputies in Brazil. Therefore, the main goal of the experiment is to isolate the causal effect from the relationship observed in the previous section.

Subjects were recruited using Facebook advertisements displayed to Brazilian users of the network. The ads invited users to participate in a public opinion study in exchange for entering a raffle for a tablet.⁷¹ Subjects who clicked on the ad were sent to a Qualtrics survey

⁷¹ The ads were displayed to approximately 4 million Brazilian Facebook users. The response rate (response per click) was 2.5%, a much lower figure than the one reported by Samuels and Zucco (2014). However, while they paid

page in which they read the survey information and were asked to provide consent for participating in the study. A total of 391 individuals provided complete responses.⁷² The sample includes subjects from 25 out of the 27 Brazilian states. About 66% of respondents were female and the average age was 42. The sample over represents the southern and southeastern regions of the Brazil.⁷³

After agreeing to participate in the study, subjects answered standard background questions (on gender, age, education, race, religious activity), and proceeded to the main section of the study containing the ballot experiment. The ballot experiment consisted of two stages. The task as a whole tried not only to manipulate the availability of male substitutes for each female candidate, but also to set the ideological domain of choice in which candidates would be similar or distinct. In order to do so, before subjects were asked to cast their votes in the ballot, the survey asked questions on whether they favored or opposed salient policy stances in Brazilian politics. The two items used in the ballot were on whether subjects favored or opposed the right of homosexuals to get married, and the use of racial quotas by universities. The combinations of the answers to these two questions produced four ideological profiles (favor/favor; favor/oppose, oppose/favor; oppose/oppose), which were then used as ballot information in order to generate the differences and similarities among candidates. After responding to those questions, subjects

on average 22 cents per click, the average cost per click was 5 cents in the experiment presented here, which results in an overall similar cost per respondent.

⁷² A total of 520 subjects started the experiment, but a portion are excluded from the analyses either due to providing incomplete responses, or due to having taken the survey too quickly or too slowly. The average response completion was approximately 13 minutes (including the time for subjects to enter their information for the raffle of the tablet). Subjects who took less than 5 and more than 30 minutes to complete the survey are excluded from the analyses.

⁷³ In order to maximize the comparability to the electoral survey data from the previous section, and because the sample over represents groups such as females and the more developed regions of the country, the estimates presented in this section are adjusted using post-stratification weights based on gender, age, and region of the country (using data from the latest Brazilian census). For a comparison between the sample and the census, see appendix Table A4.4.

received instructions and proceeded to cast their votes in the hypothetical race. The ballots showed information about the candidates and also their opinions in the two policy stances.

The ballot experiment included two experimental conditions. Subjects were told they would be voting in a race among hypothetical candidates for a political position. They were asked to read carefully about the candidates and to take their time in order to make the best choice. In the first experimental condition, the ballot included names and last names of four candidates, alongside their ages, occupations, and opinions on the two policy areas mentioned above. Each of the four candidates corresponded to a unique ideological profile (favor/favor; favor/oppose; oppose/favor; oppose/oppose), and one of the four was female (based on a female first name).⁷⁴ This ballot represents the choice structure of a SMD race, in which a few candidates with different ideological characteristics (or from different parties) compete for the same seat. The candidates' ages and occupations were randomly assigned, as well as the ballot position of each ideological profile and corresponding candidate.⁷⁵

The second condition had a ballot with 12 candidates, 3 of which were female (same proportion as the first condition). In that experimental condition, the four ideological profiles were the same as in the first, and a total of 3 candidates were necessarily assigned to each ideological profile.⁷⁶ Additionally, the ballot was set so that female candidates never shared the

⁷⁴ The first and last names of candidates, as well as their occupations and ages, came from a list of the most common names, occupations, and ages of the candidates to the Chamber of Deputies in 2010. First and last names presented were randomly sampled without replacement, while age and occupation were randomly sampled with replacement. See appendix Figure A4.2 for an example of the ballot.

⁷⁵ The Brazilian voting system uses electronic ballots in which voters type in the number corresponding to their candidate or party of choice (similarly to using a phone booth), without actually seeing all the options available. Although the ballot used in the experiments does not resemble that aspect of the voting system of Brazil, it has the main goal of simulating the broader cognitive task of evaluating information about competing candidates and deciding which one is preferred.

⁷⁶ See appendix Figure A4.3 for an example of a 12-candidate ballot.

same ideological profile. Therefore, each of the three women in the ballot competed not only against 9 other candidates from different profiles, but also against 2 male candidates that were ideologically identical to them. This ballot approximates the multi-member district race from personalized proportional systems. In this way, subjects could identify the 3 ideologically closest candidates based on their own positions, and then make a choice based on either the candidates' name, age, occupation, or gender.

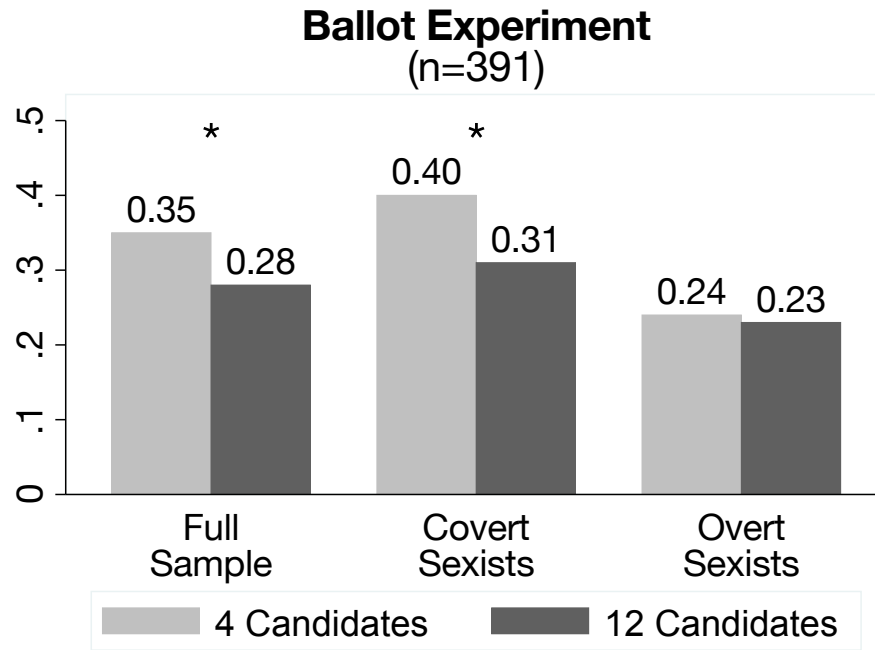
The measurement of endorsement for negative stereotypes about women in politics was conducted after the experimental manipulation. The problem with asking those types of questions prior to the manipulation is the risk of making subjects react to any gendered references in the stimuli, which might potentially harm the expected effects. In order to evaluate this problem, I ran a similar experiment during December 2014 in which half of the sample received the sexism questions before and the other half received those questions after the manipulation. The results for respondents who received the questions after the manipulation are similar to the ones presented here. However, for the sample receiving the sexism questions prior to the manipulation, diagnostic analyses revealed that subjects indeed reacted to the placement of the items before the treatment.⁷⁷ The measure of sexism used in the analysis of both experiments is a 7-point agree-disagree question stating that “women still don’t have the experience needed in order to govern well.” Even though other questions on sexism were asked in the experiments, this item is the only one that was not affected by the manipulation.

⁷⁷ In fact, respondents in that condition behaved exactly according to the expectations from the aversive sexism perspective. Making gender considerations salient made covert sexists more likely to vote for women in the 12-candidate ballot, in order to conform to egalitarian norms. See Figure A4.4 for results.

The analyses presented here are based on probit models of the probability of voting for a female candidate. The main variation of interest is whether the likelihood of a subject casting a vote for a female candidate is higher under the 4-candidate condition than under the 12-candidate condition. Figure 15 presents the results in a similar fashion to the observational design from the previous section.⁷⁸ The bars with the proportion of candidates are omitted since they are fixed at 0.25. The expectation is that subjects who do not openly endorse sexist views about women in politics (covert sexists) will be more likely to vote for females in the 4-candidate condition than under the 12-candidate condition. Overt sexists (with the highest values on sexism) are expected to have a lower probability than covert sexists of voting for a female under both conditions:

⁷⁸ For estimates, see appendix Table A4.5.

Figure 15. Predicted Probability of Voting for a Woman by Level of Sexism and Experimental Condition



The results in Figure 15 show support for the Substitution Hypothesis, according to which the probability of one casting a vote for a female will be higher when there are not male co-partisans running for the same position. The predicted probability of voting for a female candidate is higher in the 4-candidate condition (0.35 against 0.28 in the 12-candidate ballot). The difference is statistically significant at .10 (one-tailed test). The experiment shows high proportions of votes for female candidates across all conditions and levels of sexism, even though that did not preclude the manipulation from working in the expected direction. One possible interpretation for the high vote share of females is that the policy questions used to inform the ideological profiles of candidates, namely whether they favored or opposed gay

marriage and racial quotas in universities, are related to social issues in which women tend to be seen as more competent politicians (Huddy and Terkildsen, 1993; Sanbonmatsu, 2002).⁷⁹ Nevertheless, the results from the manipulation resemble the findings in Figure 13 using observational electoral survey data. In combination, those results provide evidence that when ideologically similar male candidates run against females, voters become less likely to choose the latter.

With regard to the comparison across different levels of open endorsement for negative stereotypes about women in politics, the results corroborate the Aversive Sexism Hypothesis and fail to support the Sincere Sexism Hypothesis. Among covert sexists, the predicted probability of voting for a female candidate drops from 0.40 to 0.31. This effect is statistically significant at 0.10 (one-tailed test). Overtly sexist subjects (with high scores in sexism) do not display the same pattern of behavior, since the decrease from 0.24 to 0.23 is not statistically significant at conventional levels. The results fail to support the idea that the overall decrease in the vote share of female candidates across experimental conditions is driven by openly sexist individuals engaging in sincere sexist behavior.⁸⁰

The experiment also did not provide clear evidence in favor of the cognitive overload hypothesis. According to this perspective, in order to cope with the informational overload imposed by complex environments, voters would become more likely to rely on gender stereotypes as cues for the vote choice. That would be the case in the ballot with the larger

⁷⁹ An experiment conducted in May had lower overall proportions of votes for female candidates. The study used questions about death penalty and privatization of the Brazilian Oil Company (Petrobras), which are topics on which men tend to be seen as more competent than women. See Figure A4.4 for results.

⁸⁰ Another possible explanation that does not find support in the results of either experiment is that more general out-group orientations rather than gender bias would be moderating the effect of the treatment. Using questions about other discriminated groups, such as blacks, welfare recipients, and atheists in both experiments does not produce the moderating effect found when using the measure of sexism.

number of candidates. As a way to investigate this possibility, one of the post-manipulation questions asked subjects the extent to which they felt they understood the information about the candidates (on a 7-point agree-disagree scale). The treatment has a negative impact on the extent to which subjects reported having understood their choice in both experiments, consistent with the idea that a large amount of information and choice options in the ballot may cause cognitive overload. However, the extent to which respondents felt they understood the ballot did not impact their likelihood of voting for female candidates in the 12-candidate ballot. Therefore, while assignment to the 12-candidate ballot made subjects more likely to say they did not understand the information on the ballot, the latter did not impact the probability of one casting a vote for a female candidate.

Conclusion

This chapter develops a theory to explain under what conditions voters' biases against female candidates affect voting behavior. The theory proposes that electoral rules moderate the effect of gender bias on vote choice. Based on the notion of aversive sexism, I argue that voters will discriminate against female candidates only when the structure of the race does not force them to choose between voting based on ideology and voting based on gender bias. In other words, voters will be less likely to vote for women when they can substitute ideologically close female candidates with similar male co-partisans. Hence, in an election in a single-member-district, in which parties enter a single candidate to run for the seat, the ideological

differentiation among candidates makes it clear that, when voters do not pick the ideologically close female, they are engaging in discriminatory behavior. On the other hand, in multi-member districts in which each party can enter several candidates to compete for the same seats, voters can substitute ideologically close female candidates with their male counterparts without signaling sexism.

In order to explore this hypothesis, I first look at cross-national data on women's representation in lower houses to show that fewer women occupy seats in the lower houses in personalized electoral systems in which several co-partisans run against each other for the same seats. In other words, in systems where votes are cast for individual candidates and voters have control over the order in which those candidates will appear on the party list (high personalization), increasing the number of co-partisans running for the same seat hurts the electoral chances of female candidates. The pattern is consistent with the core thesis of the chapter, according to which voters will replace ideologically close female candidates with male co-partisans when those are available.

Next, I explore why proportional rule and gender quotas, a combination of institutional features known to foster female parliamentary representation cross-nationally, have failed to raise the number of seats occupied by women in the Brazilian Chamber of Deputies. I use post-electoral survey data from the 2010 elections in Brazil to show that individuals who do not openly express bias towards women in politics are the ones more likely to defect, that is, to cast votes for women for the Senate (a FPTP system with no quotas) while not doing so for the Chamber. I then analyze data from a ballot experiments with Brazilian subjects in order to isolate the causal effect of increasing the number of male co-partisans on the likelihood of voting for

female candidates. I show that voters are less likely to choose female candidates when there are male co-partisans running for the same position than when female candidates compete alone against ideologically distant male candidates. Moreover, I show that this effect is observed only among individuals who do not openly endorse sexist views about women in politics.

The chapter offers a contribution to the understanding of when and why voters' biases against women in politics are likely to harm the electoral prospects of female candidates. A substantial part of the literature on this topic obtains mixed findings with regard to female electoral disadvantages, mainly focusing on the U.S. case (Darcy and Schramm, 1977; Darcy et al., 1994; Seltzer et al., 1997). According to the explanation developed here, it should in fact be harder to observe those disadvantages in FPTP systems, since the structure of electoral rules makes it clear that covert sexists are discriminating based on gender when they do not vote for ideologically close female candidates.

Moreover, the explanation developed here suggests that voters react to specific electoral rules in more complex ways than previous scholarship has suggested. Contrary to the conventional wisdom according to which proportional systems are superior with regard to levels of women's representation, this chapter offers a rationale for why some proportional systems have failed the goal of achieving gender equality in parliament. Moreover, given the high number of candidates running for the same positions in some of those systems, it is very unlikely that adding more female candidates to the race will change the fact that voters can still find a male substitute for every female candidate within each large party list.

Another possible extension of the argument developed in this chapter relates to the electoral chances of female candidates in the American context. Given that first-past-the-post

racism constitute strong choice structures that make voter bias against women and other minorities more easily identifiable, studies of American elections should not be expected to consistently observe bias against female candidates (Darcy and Schramm, 1977; Darcy et al., 1994; Seltzer et al., 1997; Sanbonmatsu, 2002). However, based on the argument that voters become more likely to discriminate when female candidates run against male co-partisans, primary elections might be the arena where American voters engage in such behavior.

Finally, the findings also point to some possible paths that Brazil (and other similar systems) could take in order to improve gender equality in its lower house. The first is that making voters' gender biases a salient issue in elections in general and, more specifically, in proportional races, might benefit female candidates. The reason is that covert sexists might feel the need to avoid the attribution of discriminatory behavior, and as a consequence start to actively pursue voting for female candidates in order to deny any claims of sexism. The second possible path is to consider the adoption of an institutional design that would prevent the aversive sexist pattern of behavior. One solution would be the closed-list system in which voters select lists instead of individual candidates.⁸¹ This would prevent voters from substituting female with male co-partisans, and along with gender quotas would provide parties incentives for including more women in party lists. Covert sexist voters would hardly discriminate against women at the list-level, since the systematic avoidance of lists with higher proportions of women would characterize an easily identifiable discriminatory behavior. Finally, the most direct way to increase the proportion of seats occupied by women would be adopting reserved seats as a quota

⁸¹ This proposition is based exclusively on the implications of the findings in this chapter, and does not consider other relevant aspects in the debate about the adoption of open versus closed party lists.

rule. This measure would guarantee a certain proportion of seats for women by ultimately removing from voters any discretion over the gender composition of the parliament.

CHAPTER 5

Final Remarks

A large body of literature in political science points to gender stereotypes in politics as important factors in the explanation of why women are less likely to occupy office positions, to participate in politics, and to express interest in political affairs. Those stereotypes may affect voters' evaluations of politicians, and especially female citizens and their motivations to participate in the political process. The goal of this dissertation is to contribute to the understanding of how gender stereotypes affect political outcomes such as the composition of legislatures and citizens' cognitive engagement in politics, across different contexts. I try to understand what are the psychological bases of gender stereotypes in politics, under what conditions these stereotypes affect voting behavior, and to what extent their effects on people's cognitive engagement in politics is related to the levels of female representation at the national level.

The first chapter contributes to the study of gender attitudes by showing that specific beliefs and attitudes about men and women in politics and society stem from more fundamental orientations about gender relations. Using original survey data from Brazil, the chapter uses confirmatory factor analyses in order to test whether hostile and benevolent sexism constitute the underlying structure of gender attitudes. Across the board, the results provide support for the idea that not all beliefs and attitudes about men and women in politics and society are created equal. Moreover, the chapter uses structural equations models to show that hostile and benevolent

sexism tend to be associated to different individual characteristics, such as gender, socioeconomic status, and religiosity.

The chapter also explores the effects of hostile and benevolent sexism on opinions about women's issues, such as support for gender quotas and support for employment discrimination. The models in the chapter indicate that opinions on those issues are primarily affected by hostile rather than benevolent sexism. This is due to the fact that those issues are related to women's place in politics and society more generally, and are therefore more directly associated to fundamental components of hostile sexism. Finally, the chapter investigates the insidious side of benevolent sexism. Due to the fact that beliefs associated with benevolent sexism are prescriptive with regards to gender roles and leadership styles, the effects of benevolent sexism on opinions about women in politics tend to be more nuanced. For example, while the belief that women are more honest or better at handling certain issues and policy areas than men seems to be beneficial to female candidates and politicians, it is likely that perceived transgressions performed by women in those areas might suffer stronger backlash effects than when performed by men. Based on these insights, the chapter tests the moderating effect of benevolent sexism in the relationship between perception of corruption and the approval of the job performance of the female president of Brazil. All in all, while these benevolent gender stereotypes do not clearly signal gender discrimination and lead to discriminatory behavior, their prescriptive nature constrains the realm of possible attitudes and behaviors that men and women are allowed perform and display as political beings.

The second chapter shows that gendered political contexts, through both the underrepresentation of women in political institutions and cues provided by survey questions,

affect respondents' performance in questions of political knowledge. Using comparative cross-national surveys, I show that increasing the level of female representation across countries decreases the gender gap in political knowledge, even after controlling for individual-level variables such as education and political interest, among others. Moreover, I show that the gender gap in performance is higher when questions mention male politicians, and lower for questions about female politicians. I then use a survey experiment in order to examine the causal effect of female representation on performance in knowledge questions. By manipulating the gender composition of batteries of feeling thermometers, I show that the gender gap decreases substantially when respondents are primed to think of higher levels of female representation.

The results in the second chapter suggest that the level of women's political representation may help explain the variation in the gender gap in political knowledge found across different contexts. The underrepresentation of women in the political domain reminds respondents of negative gender stereotypes when they have to think about political affairs in their country. As a consequence, female respondents might feel pressured not to confirm those stereotypes, and by coping with such load of considerations, withdraw from engaging in political tasks, especially the ones that require high cognitive processing such as the political knowledge quiz. Hence, one of the main implications of the research discussed in the chapter is that women may often have the underlying ability that is required for answering a knowledge question and thinking about politics more broadly, but situational factors can make them withdraw or fail to use and display such ability. Male respondents, on the other hand, might experience a boost in confidence and propensity to guess when exposed to the stereotypes, which in turn increases their performance in the knowledge test.

The third and last empirical chapter develops a theory to explain under what conditions voters' biases against female candidates affect voting behavior. The theory proposes that electoral rules moderate the effect of gender bias on vote choice. Based on the notion of aversive sexism, I argue that some voters will discriminate against female candidates when the structure of the race does not force them to choose between voting based on ideology and voting based on considerations about gender. In other words, some voters will be less likely to vote for women when they can substitute ideologically close female candidates with similar male co-partisans. Hence, in an election in a single-member-district in which parties enter a single candidate to run for the seat, the ideological differentiation among candidates makes it clear that, when voters do not pick the ideologically close female, they are engaging in discriminatory behavior. On the other hand, in multi-member districts in which each party can enter several candidates to compete for the same seats, voters can substitute ideologically close female candidates with their male counterparts without signaling sexism.

In order to explore this main hypothesis, I first look at cross-national data on women's representation in lower houses to show that fewer women occupy seats in the lower houses in personalized electoral systems in which several co-partisans run against each other for the same seats. In other words, in systems where votes are cast for individual candidates and voters have control over the order in which those candidates will appear on the party list (high personalization), increasing the number of co-partisans running for the same seat hurts the electoral chances of female candidates. Next, I explore why proportional rule and gender quotas, a combination of institutional features known to foster female parliamentary representation cross-nationally, have failed to raise the number of seats occupied by women in the Brazilian

Chamber of Deputies. I use post-electoral survey data from the 2010 elections in Brazil to show that individuals who do not openly express bias towards women in politics are the ones more likely to defect, that is, to cast votes for women for the Senate (a FPTP system with no quotas) while not doing so for the Chamber. I then analyze data from a ballot experiments with Brazilian subjects in order to isolate the causal effect of increasing the number of male co-partisans on the likelihood of voting for female candidates. I show that voters are less likely to choose female candidates when there are male co-partisans running for the same position than when female candidates compete alone against ideologically distant male candidates. Moreover, I show that this effect is observed only among individuals who do not openly endorse sexist views about women in politics.

My next steps in this research agenda will either focus on unexplored topics that are directly related to the chapters presented above, or expand from ideas already introduced in those chapters. For example, the first chapter discusses the possibility that benevolent sexism, and more specifically, views that women tend to make more honest politicians than men, affect the ways in which voters punish male and female politicians when those are involved or allegedly involved in corruption scandals. The broader research agenda underlying this specific question refers to the insidious side of stereotypes that many people believe to be harmless. Given the increase in the presence of women in positions of power around the world, and the consequent public rejection of more open and derogatory forms of sexism, it is likely that benevolent stereotypes will become the dominant tone in the sexist discourse about men and women in politics over the next years. Therefore, it is crucial that we understand the political consequences of benevolent sexism.

Another research question that I plan to explore next is related to the findings and conclusions I reach in the second chapter, focusing on the effect of women's representation on the gender gap in political knowledge (via stereotype threat). As I show in the chapter using cross-national survey data and a survey experiment, priming respondents to think of higher levels of female presence in leadership positions makes women perform better in knowledge questions, while making men perform worse on the same tests. However, because female politicians tend to experience harder negative scrutiny from voters and the media – as much as female managers tend to receive worse evaluations from employees and peers than their male counterparts – one possible question is about whether the presence of female politicians with bad reputations might actually prime stereotype threat. In this sense, under some circumstances, the presence of female leaders can have a negative effect on women's cognitive engagement. I have already collected data in Guatemala and Panama that seem to corroborate this expectation.

One puzzling aspect in the third chapter was the fact that the manipulation of candidates' gender in the ballot experiment was a rather simple one. The only way to identify the candidate's gender in the ballot was based on his or her first name. Still, the manipulation was able to uncover an average treatment effect showing that certain choice structures allow voters to discriminate against female candidates, even when the candidates' first names are the single cue about those candidates' gender. Although I also plan to explore in the future other possible cues that allow voters to engage in aversive sexism, the results from the chapter seem to speak to the power of candidates' names in driving electoral choices. In the case of elections for the Brazilian Chamber of Deputies, where the electoral districts are extremely large with hundreds of candidates competing for votes, it is likely that simple cues such as names and nicknames might

become important for voters. However, how could certain names harm the electoral chances of female candidates and benefit males? My next step in this agenda is to explore the hypothesis that voters' aversive sexism takes properties of the candidates' names as subtle cues to discriminate against females. For example, based on the same candidate-level data I use in Chapter 4, it is more common to observe male candidate using short and humorous nicknames in their campaigns compared to women. Moreover, women tend to resort in higher proportions to cues about their profession (such as adding "doctor" or "professor" before their names). I plan to look at candidate-level data and run experimental studies to test some of these ideas.

In conclusion, this dissertation compiles and summarizes some initial efforts in investigating the role of gender stereotypes in politics. The chapters rely on extant scholarship from different fields, such as comparative institutions, public opinion and social psychology, in exploring how people's views about gender, combined with contextual factors, affect different politically relevant outcomes. The findings and conclusions proposed in this dissertation, along with other research done on the topics across different contexts and points of time, suggests that the increasing participation of women in parliaments and in the work force might bring major consequences for democracies around the world. Those worldwide changes in the political landscape have major impacts on how individuals view the roles of men and women in politics, how individuals think about politics more generally, and how they choose the leaders and the policies of the future.

APPENDIX

A2. Appendix for Chapter 2

Table A2.1. Full Model from Table 2

Independent variables	The state ought to require that political parties reserve some space on their lists of candidates for women, even if they have to exclude some men	When there is not enough work, men should have a greater right to jobs than women
Hostile Sexism	-0.10* (0.04)	0.53* (0.09)
Benevolent Sexism	0.52* (0.20)	0.08 (0.08)
Left	-0.04 (0.03)	-0.05 (0.08)
Center	0.02 (0.01)	-0.02 (0.03)
Right	0.01 (0.03)	-0.01 (0.03)
Wealth	-0.25* (0.05)	-0.23* (0.05)
Schooling	-0.04 (0.04)	-0.22* (0.05)
Age	0.01 (0.05)	0.07 (0.05)
Urban	-0.03 (0.04)	-0.07 (0.05)
Female	0.04* (0.02)	-0.10* (0.02)
Female Interviewer	0.05* (0.02)	-0.05* (0.02)
Religiosity	0.11* (0.04)	0.05 (0.03)
Number of Children	0.01 (0.09)	
Media Exposure	0.05	-0.05

	(0.04)	(0.05)
Sociotropic Eval.		-0.01
		(0.03)
Pocketbook Eval.		0.04
		(0.03)
Unemployed		0.01
		(0.04)
<hr/>		
R ²	0.18	0.30
n	1,458	1,433
<hr/>		

*p<.05 (two-tailed). Standard errors in parentheses.

Note: Ordinary least squares (OLS) estimates. Control variables included but not shown here.

Data: AmericasBarometer Surveys, 2014.

Table A2.2. Full Model from Table 3

Independent variables	Presidential Approval
Hostile Sexism	-0.32** (0.18)
Benevolent Sexism	1.25* (0.61)
Perception of Corruption	-1.18* (0.24)
Perception of Corruption*Benevolent Sexism	-1.27** (0.75)
Perception of Government Promoting Security	-1.23* (0.31)
Evaluation of health care services	-0.41 (0.25)
Evaluation of public education	-0.76* (0.32)
Left	0.12 (0.20)
Center	-0.17 (0.19)
Right	-0.25 (0.21)
Incumbent Party	0.74* (0.21)
Sociotropic Eval.	1.00* (0.16)
Pocketbook Eval.	0.51* (0.16)
Wealth	-0.86* (0.33)
Schooling	-0.38 (0.27)
Age	0.32 (0.30)
Urban	0.02 (0.24)
Female	0.24* (0.11)
Bolsa Família recipient	0.41* (0.14)

Unemployed	-0.21 (0.25)
White	-0.16 (0.13)
Black	-0.05 (0.17)
Media Exposure	-0.54 (0.34)
<hr/>	
n	1,363
<hr/>	

*p<.05. **p<.10 (two-tailed). Standard errors in parentheses.

Note: Model is ordered probit. Control variables included but not shown here.

Data: AmericasBarometer Surveys, 2014.

A3. Appendix for Chapter 3

Table A3.1. List of Surveys and Countries in Cross-National Analysis

Survey	Countries	Number of Items
AmericasBarometer 2008	Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Rep., Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela	5
AmericasBarometer 2010	Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Rep., Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay, Venezuela	3
Afrobarometer 2005	Benin, Botswana, Cape Verde, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia	6
Afrobarometer 2008	Benin, Botswana, Burkina Faso, Cape Verde, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe	2
Arab Barometer 2006-2007	Algeria, Jordan, Lebanon, Morocco, Palestine, Yemen	2
Asian Barometer 2008	Cambodia, China, Indonesia, Japan, Malaysia, Mongolia, Philippines, Singapore, South Korea, Taiwan, Thailand, Vietnam	2
Chicago Council Survey 2006	Australia, China, India, South Korea, U.S.	2 (3 in Australia)

Comparative Study of Electoral Systems Wave 2	Albania, Australia, Belgium, Brazil, Canada, Chile, Czech Republic, Finland, France, Germany, Hong Kong, Hungary, Ireland, Israel, Italy, Japan, Kyrgyzstan, Mexico, Netherlands, New Zealand, Norway, Peru, Philippines, Poland, Romania, Russia, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan, U.K., U.S.	3
Comparative Study of Electoral Systems Wave 3	Australia, Austria, Brazil, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Slovakia, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand	3
European Election Survey 2009	Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland	7

Gallup Voice of the People 2011	<p>Afghanistan, Argentina, Armenia, Australia, Austria, Azerbaijan, Belgium, Bosnia Herzegovina, Brazil, Bulgaria, Cameroon, Canada, China, Colombia, Czech Republic, Denmark, Ecuador, Egypt, Finland, France, Georgia, Ghana, Hong Kong, Iceland, India, Iraq, Ireland, Italy, Japan, Kenya, Lebanon, Lithuania, Macedonia, Malaysia, Moldova, Netherlands, Nigeria, Pakistan, Palestine, Peru, Poland, Romania, Russia, Saudi Arabia, Serbia, South Africa, South Korea, Spain, Sweden, Switzerland, Tunisia, Turkey, Ukraine, U.S., Uzbekistan, Vietnam</p>	7 (6 in Saudi Arabia and Sweden)
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Table A3.2. Descriptive Statistics for Main Variables in Cross-National Analysis (n=1,050)

Variable	Mean	Standard Deviation	Minimum	Maximum
Predicted Gender Effect	0.22	0.23	-0.64	1.04
S.E. of Predicted Gender Effect	0.12	0.04	0.06	0.49
Baseline Gender Effect	0.31	0.27	-0.95	1.36
SE. of Baseline Gender Effect	0.11	0.04	0.05	0.50
Proportion of Women in Parliament	0.21	0.11	0	0.47
Proportion of Women in Cabinets	0.21	0.13	0	0.63
Female Head of State (Last 50 Years)	0.35	0.48	0	1
Item About Female Politician	0.03	0.18	0	1
Item About Male Politician	0.19	0.39	0	1
GDP Per Capita	0.23	0.17	0	1
Level of Democracy	0.79	0.25	0	1
Proportional System	0.60	0.49	0	1
Gender Quota	0.32	0.47	0	1
Years with Women's Suffrage	0.56	0.19	0	1
Content: Foreign Affairs	0.10	0.30	0	1
Content: International Organizations	0.49	0.50	0	1
Content: Quantitative	0.24	0.43	0	1
Format: Multiple-Choice	0.02	0.15	0	1
Format: True-or-False	0.21	0.41	0	1
Format: Opinionation	0.34	0.47	0	1
Model Quality Index	0.49	0.18	0	1

Table A3.3. Alternative Models for Predicted Gender Effect

Independent variables	OLS (cluster)	Robust S.E.	WLS	Borjas Weights
<i>WOMENSREP_j</i>				
Proportion of Women in Parliament	-0.22 (0.14)	-0.22* (0.09)	-0.26* (0.08)	-0.29* (0.13)
Proportion of Women in Cabinets	0.04 (0.12)	0.04 (0.08)	0.03 (0.07)	0.03 (0.11)
Female Head of State Last 50 years (yes=1)	0.01 (0.02)	0.01 (0.01)	0.02 (0.01)	0.02 (0.02)
<i>GENDERED_h</i>				
Item about Female Politician	-0.14* (0.03)	-0.14* (0.04)	-0.13* (0.04)	-0.13* (0.04)
Item about Male Politician	0.06 (0.02)	0.06* (0.02)	0.06* (0.02)	0.06* (0.02)
<i>CONTROLS_j</i>				
GDP Per Capita	0.28 (0.14)	0.28* (0.07)	0.31* (0.06)	0.34* (0.13)
Level of Democracy	-0.07 (0.08)	-0.07 (0.04)	-0.06 (0.04)	-0.04 (0.06)
Proportional System	0.00 (0.03)	0.00 (0.02)	0.01 (0.01)	0.00 (0.02)
Gender Quota	0.07* (0.02)	0.07* (0.01)	0.07* (0.01)	0.07* (0.02)
Years with Women's Suffrage	0.07 (0.08)	0.07 (0.05)	0.06 (0.04)	0.04 (0.07)
<i>CONTROLS_h</i>				
Content: Foreign Affairs	0.11* (0.02)	0.11* (0.03)	0.14* (0.03)	0.16* (0.02)
Content: International Organizations	0.11* (0.03)	0.11* (0.03)	0.10* (0.03)	0.09* (0.03)
Content: Quantitative	0.03 (0.02)	0.03 (0.02)	0.04 (0.02)	0.04* (0.02)
Format: Multiple-Choice	-0.03 (0.04)	-0.03 (0.04)	-0.04 (0.04)	-0.06 (0.04)
Format: True-or-False	-0.02 (0.05)	-0.02 (0.04)	-0.02 (0.04)	-0.02 (0.05)
Format: Opinionation	-0.12 (0.07)	-0.12 (0.06)	-0.11 (0.10)	-0.11 (0.06)

Model Quality Index	0.27*	0.27*	0.28*	0.29*
	(0.05)	(0.04)	(0.04)	(0.05)
Constant	0.26	0.26*	0.25*	0.23*
	(0.13)	(0.11)	(0.11)	(0.11)
R^2	0.23	0.23	0.26	0.30
n	1,050	1,050	1,050	1,050
Clusters (country-year)	237			237

*p<.05 (two-tailed). Standard errors in parentheses.

Country and year fixed effects are included but not shown in the table.

Table A3.4. Alternative Models for Baseline Gender Effect

Independent variables	OLS (cluster)	Robust S.E.	WLS	Borjas Weights
<i>WOMENSREP_j</i>				
Proportion of Women in Parliament	-0.17 (0.17)	-0.17 (0.09)	-0.18 (0.09)	-0.19 (0.16)
Proportion of Women in Cabinets	-0.09 (0.16)	-0.09 (0.08)	-0.08 (0.08)	-0.05 (0.14)
Female Head of State Last 50 years (yes=1)	0.02 (0.03)	0.02 (0.02)	0.02 (0.01)	0.02 (0.03)
<i>GENDERED_h</i>				
Item about Female Politician	-0.16* (0.04)	-0.16* (0.04)	-0.16* (0.04)	-0.16* (0.04)
Item about Male Politician	0.06* (0.02)	0.06* (0.03)	0.06* (0.03)	0.06* (0.02)
<i>CONTROLS_j</i>				
GDP Per Capita	0.41* (0.18)	0.41* (0.08)	0.41* (0.07)	0.40* (0.14)
Level of Democracy	-0.12 (0.10)	-0.12* (0.05)	-0.11* (0.04)	-0.08 (0.07)
Proportional System	0.00 (0.04)	0.00 (0.02)	0.00 (0.02)	-0.01 (0.03)
Gender Quota	0.09* (0.03)	0.09* (0.02)	0.08* (0.02)	0.08* (0.02)
Years with Women's Suffrage	0.01 (0.10)	0.01 (0.05)	-0.01 (0.05)	-0.03 (0.08)
<i>CONTROLS_h</i>				
Content: Foreign Affairs	0.13* (0.02)	0.13* (0.03)	0.15* (0.03)	0.18* (0.02)
Content: International Organizations	0.12* (0.03)	0.12* (0.03)	0.11* (0.03)	0.10* (0.03)
Content: Quantitative	0.03 (0.02)	0.03 (0.02)	0.04 (0.02)	0.05* (0.02)
Format: Multiple-Choice	-0.03 (0.04)	-0.03 (0.04)	-0.04 (0.05)	-0.06 (0.04)
Format: True-or-False	-0.30 (0.06)	-0.03 (0.04)	-0.03 (0.04)	-0.03 (0.05)
Format: Opinionation	-0.20* (0.08)	-0.20* (0.07)	-0.18 (0.11)	-0.17* (0.07)

Model Quality Index	0.45*	0.45*	0.46*	0.47*
	(0.06)	(0.05)	(0.05)	(0.06)
Constant	0.24	0.24*	0.23	0.23*
	(0.15)	(0.12)	(0.12)	(0.11)
R^2	0.34	0.34	0.36	0.40
n	1,050	1,050	1,050	1,050
Clusters (country-year)	237			237

*p<.05 (two-tailed). Standard errors in parentheses.

Country and year fixed effects are included but not shown in the table.

Table A3.5. Wording and Distribution of Knowledge Items in Experiment (n=971)

Item	Correct	Incorrect	Don't Know
For how many years is a United States Senator elected – that is, how many years are there in one full term of office for a U.S. Senator?	0.31	0.59	0.10
What are the first ten amendments to the U.S. Constitution called?	0.54	0.12	0.34
What job or political office does John Boehner now hold?	0.43	0.20	0.37
What is the name of the current President of Russia?	0.67	0.06	0.27
Which political party has the most members in the House of Representatives in Washington?	0.54	0.27	0.19
Whose responsibility is it to determine if a law is constitutional or not?	0.51	0.30	0.19

Table A3.6. Descriptive Statistics for Main Variables in Experimental Analysis (n=971)

Variable	Mean	Standard Deviation	Minimum	Maximum
Male	0.47	0.5	0	1
Knowledge	0.54	0.33	0	1
Education	0.67	0.18	0	1
Income	0.63	0.24	0	1
White	0.77	0.42	0	1
Religious Activity	0.42	0.34	0	1
Single	0.21	0.41	0	1
Duration	0.06	0.09	0	0.98

Table A3.7. Multinomial Logit for Estimation of Number of Women in Supreme Court - Manipulation Check for Experiment

Independent variables	Underestimate (<3)	Overestimate (>3)	“Don’t Know”
“All-Male” Thermometers	0.30 (0.22)	0.00 (0.37)	0.69 (0.36)
Mixed Thermometers	0.08 (0.23)	0.83* (0.37)	0.68 (0.35)
Male	-0.16 (0.18)	-0.57 (0.31)	-0.53 (0.28)
Education	0.03 (0.53)	-0.97 (0.90)	-2.01* (0.08)
Income	-0.20 (0.45)	-0.36 (0.65)	-1.16* (0.58)
White	0.02 (0.22)	-0.13 (0.37)	-0.32 (0.30)
Religious Activity	-0.34 (0.26)	0.00 (0.44)	0.18 (0.40)
Single	0.01 (0.23)	-0.04 (0.40)	0.31 (0.32)
Duration	-0.11 (2.78)	-0.13 (3.93)	-4.83 (4.03)
Duration Squared	-1.13 (5.10)	4.03 (6.18)	8.18 (6.52)
Constant	0.83 (0.63)	-0.30 (0.79)	1.17 (0.67)

Baseline Category = Correct (=3)

n = 971

*p<.05 (two-tailed). Standard errors in parentheses.

Table A3.8. Multinomial Logit Models for Response to Knowledge Item in Experiment

Independent variables	Baseline		"All Male"		"Mixed"	
	Incorrect	DK	Incorrect	DK	Incorrect	DK
Male	-0.42*	-0.99*	-0.32	-0.66*	-0.16	-0.32
	(0.16)	(0.23)	(0.17)	(0.28)	(0.17)	(0.27)
Education	-0.22*	-2.71*	-2.32*	-2.75*	-2.13*	-2.84*
	(0.56)	(0.75)	(0.63)	(0.85)	(0.56)	(0.96)
Income	-0.84*	-1.31*	-0.95*	-1.44*	-1.05*	-2.00*
	(0.39)	(0.53)	(0.42)	(0.55)	(0.39)	(0.64)
White	-0.53*	-0.82*	-0.14	-1.07*	-0.28	-0.40
	(0.18)	(0.25)	(0.19)	(0.29)	(0.20)	(0.27)
Religious Acitivity	-0.07	0.06	0.52*	0.64	0.00	0.41
	(0.24)	(0.33)	(0.24)	(0.42)	(0.23)	(0.36)
Single	0.17	0.25	-0.01	0.28	-0.08	-0.32
	(0.21)	(0.27)	(0.20)	(0.31)	(0.19)	(0.32)
Duration	-0.14	2.44	-1.65	-2.63	1.22	-4.92
	(3.03)	(4.39)	(3.08)	(3.73)	(1.91)	(3.64)
Duration Squared	-0.50	-2.93	7.62	8.69	0.96	7.68
	(6.24)	(7.74)	(6.39)	(7.41)	(3.53)	(4.40)
Item 2	-2.27*	0.95*	-2.43*	0.58*	-2.26*	0.82*
	(0.26)	(0.32)	(0.25)	(0.25)	(0.26)	(0.29)
Item 3	-1.56*	1.10*	-1.52*	0.97*	-1.35*	1.38*
	(0.22)	(0.32)	(0.22)	(0.26)	(0.21)	(0.29)
Item 4	-3.13*	0.56	3.36*	-0.18	-3.07*	0.20
	(0.30)	(0.33)	(0.30)	(0.24)	(0.34)	(0.29)
Item 5	-0.18*	-0.38	-1.38*	0.07	-1.23*	0.39
	(0.21)	(0.36)	(0.20)	(0.24)	(0.20)	(0.30)
Item 6	-1.24*	-0.09	-1.25*	0.12	-1.25*	0.21
	(0.18)	(0.33)	(0.18)	(0.23)	(0.20)	(0.28)
Constant	3.42*	1.87*	2.99*	2.39*	2.91*	2.14*
	(0.44)	(0.63)	(0.53)	(0.80)	(0.05)	(0.87)
n	1,974		1,944		1,908	
Pseudo R ²	0.17		0.17		0.15	

Baseline Category = Correct

Clustered S.E. (respondent)

*p<.05 (two-tailed). Standard errors in parentheses.

A4. Appendix for Chapter 4

Table A4.1. GLM Estimates for Figure 11

Independent Variable	Estimates
Personal Vote	-0.10 (0.37)
ln of District Magnitude	0.22** (0.09)
Personal Vote*ln of District Magnitude	-0.38* (0.19)
Quotas 2011	0.00 (0.14)
Female Head of State 2011	0.27* (0.11)
GDP per capita 11	0.00* (0.00)
Polity II Democracy Score 2011	-0.03 (0.02)
Human Development Index 2011	-0.21 (0.61)
Length of Women's Suffrage 2011	0.00 (0.00)
Muslim	0.25 (0.26)
Orthodox	-0.50 (0.27)
Catholic	0.07 (0.18)
Other Religion	-0.35 (0.22)
Constant	-1.71* (0.52)
AIC	0.99
BIC	-348.84
n	92

*p<.05 (two-tailed). Standard errors in parentheses.

Table A4.2. Robust OLS Estimates for Figure 13 (Logged Proportion of Votes)

Independent Variable	Senate	Chamber
Male	0.13 (0.23)	0.33* (0.05)
Age (standardized)	0.13 (0.07)	-0.05* (0.02)
Education (standardized)	0.22 (0.06)	0.06* (0.02)
Campaign Resources (logged and standardized)	1.33 (0.17)	1.48* (0.03)
Incumbent	0.04 (0.16)	0.69* (0.05)
Single	-0.12 (0.28)	-0.01 (0.06)
Married	-0.17 (0.18)	0.27* (0.04)
Constant	-2.03 (0.72)	-5.57* (0.25)
	R²	0.9
	n	4,023

*p<.05 (two-tailed). Standard errors in parentheses.

Party and state (district) fixed effects included but not shown in the table

Table A4.3. Probit Estimates for Figure 14 (Vote for Female Candidate)

Independent Variable	Senate	Chamber
Sexism	-1.06* (0.37)	-0.15 (0.46)
Information	-0.01 (0.04)	0.05 (0.03)
Party Id. (PT)	0.56* (0.22)	0.19 (0.24)
Party Id. (PSDB)	-0.68 (0.37)	0.26 (0.34)
Party Id. (PV)	-0.38 (0.42)	-0.75 (0.50)
Left	0.76* (0.32)	-0.46 (0.37)
Center	0.11 (0.32)	-0.67* (0.33)
Right	0.11 (0.27)	-0.25 (0.29)
Evangelical	0.87* (0.30)	0.00 (0.30)
Catholic	0.52* (0.26)	0.76* (0.24)
Campaign Attention	-0.38* (0.12)	-0.01 (0.07)
Newspaper Reading	0.13 (0.08)	-0.06 (0.07)
Bolsa Família recipient	0.42 (0.30)	-0.04 (0.35)
Urban	0.01 (0.36)	0.63 (0.37)
Education	-0.02 (0.03)	0.00 (0.03)
Employed	0.01 (0.23)	0.06 (0.24)
Female	-0.12 (0.22)	0.27 (0.20)
Age	0.01 (0.01)	-0.01 (0.01)
White	-0.16 (0.21)	0.13 (0.20)

Sociotropic Evaluation	0.20 (0.17)	0.23 (0.17)
Pocketbook Evaluation	-0.18 (0.15)	0.12 (0.14)
Constant	-2.82* (0.31)	-4.43* (0.95)
<hr/>		
Pseudo R ²	0.42	0.20
n	728	728
<hr/>		

*p<.05 (two-tailed). Standard errors in parentheses.

State (district) fixed effects included but not shown in the table

Figure A4.1. Predicted Probabilities of Voting for Women by Sexism and Type of Election

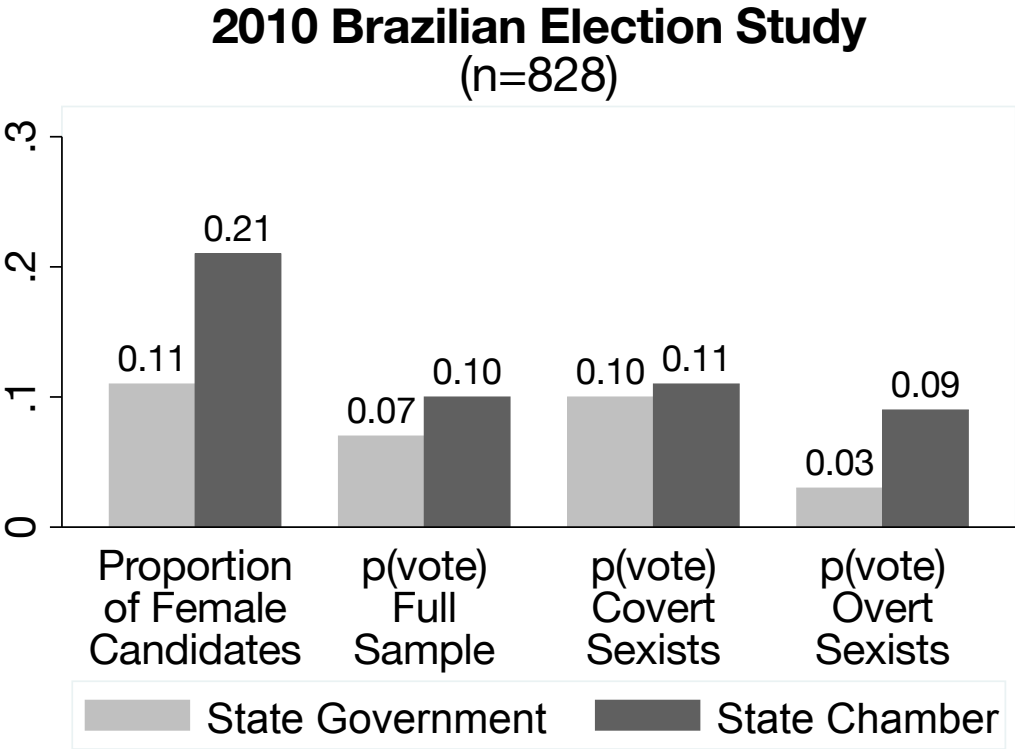


Table A4.4. Sample statistics (proportions) of Ballot Experiment compared to the 2010 Brazilian Census

Variable	Experiment	2010 Census
Region:		
North	0.04	0.08
Northeast	0.21	0.29
Midwest	0.06	0.07
Southeast	0.47	0.42
South	0.22	0.14
Gender:		
Female	0.66	0.51
Male	0.34	0.49
Age:		
18-29	0.24	0.29
30-44	0.30	0.29
45 or more	0.46	0.42

Figure A4.2. Example of ballot with 4 candidates

In an election for office among the candidates below, which one would you vote for?

- in favor of Universities setting aside openings for students with darker skin
- in favor of same-sex couples having the right to marry

CARLOS COSTA (Merchant, 55 years old)

- against Universities setting aside openings for students with darker skin
- against same-sex couples having the right to marry

ANTÔNIO GOMES (Merchant, 39 years old)

- in favor of Universities setting aside openings for students with darker skin
- against same-sex couples having the right to marry

TEREZA OLIVEIRA (Businesswoman, 55 years old)

- against Universities setting aside openings for students with darker skin
- in favor of same-sex couples having the right to marry

JOÃO PEREIRA (Professor, 42 years old)

Figure A4.3. Example of ballot with 12 candidates

In an election for office among the candidates below, which one would you vote for?

- in favor of Universities setting aside openings for students with darker skin
- in favor of same-sex couples having the right to marry

- FRANCISCO SOUZA** (Merchant, 48 years old)
- MARIA OLIVEIRA** (Doctor, 44 years old)
- JOÃO PEREIRA** (Merchant, 44 years old)

- against Universities setting aside openings for students with darker skin
- in favor of same-sex couples having the right to marry

- TEREZA FERREIRA** (Merchant, 48 years old)
- MARCOS ALVES** (Businessman, 58 years old)
- CARLOS GOMES** (Doctor, 54 years old)

- in favor of Universities setting aside openings for students with darker skin
- against same-sex couples having the right to marry

- PAULO VIEIRA** (Professor, 45 years old)
- LUÍZ LIMA** (Lawyer, 47 years old)
- JORGE COSTA** (Doctor, 45 years old)

- against Universities setting aside openings for students with darker skin
- against same-sex couples having the right to marry

- ANTÔNIO SANTOS** (Engineer, 57 years old)
- ANA RIBEIRO** (Professor, 58 years old)
- JOSÉ SILVA** (Businessman, 52 years old)

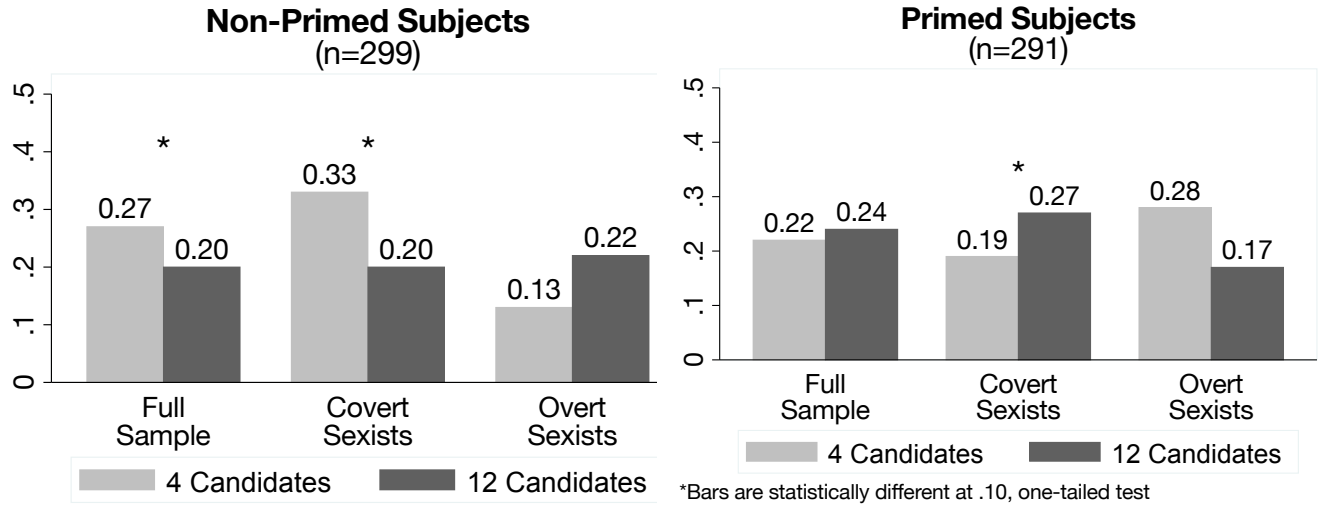
Table A4.5. Probit Estimates for Figure 15 (Vote for Female Candidate)

Independent Variable	Model 1	Model 2
Treatment	-0.24 (0.16)	-0.31 (0.26)
Sexism		-0.08 (0.06)
Treatment*Sexism		0.04 (0.07)
Choice Satisfaction	-0.15 (0.09)	-0.15 (0.09)
Male	0.10 (0.17)	0.11 (0.17)
Education	0.03 (0.03)	0.03 (0.04)
Age	-0.19 (0.10)	-0.18 (0.10)
Catholic	0.25 (0.23)	0.30 (0.24)
Protestant	-0.04 (0.27)	-0.03 (0.27)
No religion	-0.49 (0.35)	-0.49 (0.35)
Northeast	-0.08 (0.43)	-0.07 (0.43)
Midwest	0.27 (0.49)	0.33 (0.49)
Southwest	0.22 (0.40)	0.24 (0.41)
South	-0.02 (0.44)	-0.03 (0.44)
Black	-0.52 (0.30)	-0.52 (0.30)
Right	0.17 (0.25)	0.15 (0.25)
Center	0.05 (0.19)	0.04 (0.19)
Left	0.11 (0.23)	0.09 (0.23)
Tolerance	0.07* (0.03)	0.08 (0.03)

Screeners	-0.03 (0.19)	-0.05 (0.19)
Discrimination no longer problem	-0.05 (0.04)	-0.05 (0.04)
People of darker skin treated unfairly	-0.04 (0.04)	-0.02 (0.04)
Too much worry about equality	0.03 (0.03)	0.02 (0.03)
Favor Quotas	-0.06 (0.23)	-0.07 (0.23)
Favor Marriage	-0.05 (0.25)	-0.08 (0.25)
Favor Quotas*Favor Marriage	-0.10 (0.32)	-0.09 (0.32)
Importance Quotas	0.13 (0.11)	0.13 (0.11)
Importance Marriage	-0.17* (0.08)	-0.18* (0.08)
Duration	0.07 (0.08)	0.06 (0.08)
Duration Squared	0.00 (0.00)	0.00 (0.00)
Constant	-0.19 (0.88)	-0.13 (0.87)
<hr/>		
Pseudo R ²	0.08	0.08
n	391	391
<hr/>		

*p<.05 (two-tailed). Standard errors in parentheses.

Figure A4.4. Predicted Probabilities of Voting for Women by Sexism and Experimental Condition (May 2014 Experiment)



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