

Testing Alternative Explanations for Gender-Office Congruency

Barry C. Burden
Professor of Political Science
Director, Elections Research Center
University of Wisconsin-Madison
1050 Bascom Mall
Madison, WI 53706
bcburden@wisc.edu

Yoshikuni Ono
Professor of Political Science
Tohoku University
School of Law
27-1 Kawauchi, Aobaku, Sendai
Miyagi 980-8576 Japan
and
Faculty Fellow
Research Institute of Economy, Trade and Industry
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901 Japan
onoy@tohoku.ac.jp

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Abstract

We examine the degree to which voters show bias for male or female candidates as a possible contributor to the underrepresentation of women in public office in the U.S. Using conjoint survey experiments, we show that voters are biased slightly in favor of female candidates, a result that differs from a prior study. We find that independents display greater bias than do partisans, a result that may be consistent with a theory of “partisan insurance.” When separating contests with same-party and different-party candidates, we find that Republican primary voters tend to “screen out” female candidates where as Democratic primary voters “screen in” female candidates. Finally, we show that the overall pro-female bias is equal in gubernatorial and state legislative elections, a result that contrasts with an earlier study finding a pro-male bias in presidential elections. We suggest ways in which this pattern of biases could be explained by “office-congruency” theory and an alternative mechanism based on voters’ differential experiences with women in various offices.

The underrepresentation of women in elective office in the United States continues to be a normative concern and a theoretical puzzle. There are multiple factors that contribute to women comprising only about one fifth of high-level office holders despite being a majority of the voting age population. These include disparities in candidate recruitment, ambition, and desire to enter electoral politics (Kanthak and Woon 2015; Lawless and Fox 2010; Sanbonmatsu 2006). Beyond our understanding of these factors concerning the “supply” of candidates, we focus on the degree to which “demand” by voters contributes to poor descriptive representation of women. Building on a previous study, in this paper, we analyze data from survey experiments designed to measure voter bias toward female candidates running for two state-level offices to examine in greater depth whether “office congruency” explains such biases.

In contrast to our earlier study that focused on federal offices (Ono and Burden forthcoming), we find that voters are on average slightly biased in favor of female candidates. This bias does not vary between executive and legislative office, suggesting that prior evidence of bias against female candidates was due to a focus on federal offices, although we entirely cannot rule out a “Trump effect” due to the post-2016 electoral context. We also find that the Republicans show a bias against female candidates while Democrats and independents show a bias in favor, as well as evidence of a “gender affinity” bias in which female voters prefer female candidates. At least in state level races in 2018, voters appear to give female candidates an edge.

Our analysis closely relates to our previous study (Ono and Burden forthcoming), which also used conjoint experiments in national surveys to test for evidence of voter bias toward female candidates for federal-level offices. In that study, we found that voters used candidate sex as a heuristic even when provided with information on other attributes of candidates such as party affiliations and policy positions, punishing female candidates slightly relative to their

identical male counterparts.¹ Our previous study addressed three hypotheses on the effects of candidate sex on vote choice. First, we tested the “gender affinity” hypothesis that female voters are uniquely favorable to female candidates, but found instead that women were neutral while men preferred male candidates. Second, we tested the “partisan insurance” hypothesis and found supporting evidence for it, namely that independents showed the greatest bias against female candidates because in the absence of a useful partisan cue they relied more on gender as a voting heuristic. Relatedly, we found that Republican respondents were unbiased in general election settings but showed as much bias as independents in same-party settings akin to primaries where party labels do not distinguish candidates.

Third, we examined the “office congruency” hypothesis that voters disfavor female candidates for offices that seem best suited for stereotypical masculine traits and policy positions. We found that respondents were biased against female candidates in presidential elections but not congressional elections (even after accounting for attitudes toward Hillary Clinton), a result that seems to support the office congruency theory. However, in retrospect, we still see uncertainty in exactly what the office congruency theory means for the kinds of offices where women might be disfavored. In particular, we see ambiguity in whether the theory is mainly about *executive* offices where individual leadership is valued, *national* offices where national security is prioritized, or both. Our current study is designed to clarify this ambiguity using new

¹ We generally use the term sex rather than gender, although we note that it is unclear which is the more accurate way to describe how candidates present themselves and how voters perceive those presentations. Our experiments follow conventional usage by describing candidates dichotomously as either male or female and do not explore the subtleties of gendered factors such as visual presentation by candidates.

survey experiments that compare legislative and executive offices at the state level where national security is much less salient issue. The results differ in some significant ways from the previous study that answer some questions but also raise new ones.

Candidate Sex as a Heuristic or a Baseline Gender Preference

As our earlier study explained, there are good theoretical and empirical reasons to believe that voters rely on candidate sex when making their decisions about whom to support. A bias for or against a candidate could take place for two reasons. The first possible reason is that voters simply have a “baseline gender preference” (Sanbonmatsu 2002) to see either a man or woman in office. This predisposition might stem from old-fashioned bigotry or a desire to see improvements in descriptive representation for women who are an underrepresented group. The second explanation is that voters prefer a candidate of a particular sex because of the characteristics that are believed to be associated with that sex. That is, rather than disliking the idea of man or woman in office per se, they favor a candidate of one sex because they link it to stereotypes about how men and women differ in terms of personal qualities, areas of expertise of policy positions. For example, a voter lacking other information might prefer a male candidate over a female one because they believe that the female candidate is more liberal, less knowledgeable, or less experienced. In such cases the voter is using stereotypes acquired elsewhere to “fill in the gaps” where information about the candidates is absent.² Our study is designed to minimize the possibility for statistical discrimination, as important as that might be, to observe purer preferences that voters harbor toward candidates of different sexes.

² Economists would describe this as a distinction between “baseline gender preference” and other traits inferred from candidate sex as variants of “taste-based” discrimination and “statistical” discrimination (see Guryan and Charles 2013).

It is sensible that voters would use candidate sex as a heuristic to provide information that they are lacking. Voters frequently make decisions about unfamiliar candidates using heuristics (Lupia and McCubbins 1998; Popkin 1991). Sex is a particularly easy heuristic to acquire; it can be determined quite readily from most campaign communications and can usually be discerned from names as they are listed on the ballot. Voters might readily use candidate sex as a shortcut that implies other information about candidates. Research shows that people exhibit a tendency to stereotype candidates based on their sex and associate certain personality traits and policy positions with men and women (Alexander and Andersen 1993; Huddy and Terkildsen 1993; Kahn 1994; Koch 2002; Lawless 2004b; McDermott 1997; Sanbonmatsu and Dolan 2009). A key question is whether these kinds of inferential leaps continue to occur when voters are actually exposed directly to information about candidates' characteristics rather than imputing them based on stereotypes.

We employ a research design that enables us to more closely reflect how candidates are presented to voters than do traditional survey experiments. Our experiments in particular jointly vary numerous candidate attributes at a time, making it possible to identify the extent to which candidate sex matters in voter evaluation relative to other crucial cues about candidates that would in real elections be often correlated with candidate sex and thus are potentially confounding factors.

Previous studies suggest that voters make inferences about a candidate based their sex (McDermott 1997). For example, voters often presume that female candidates lack stereotypically masculine and politically desirable traits such as competence and strong leadership (Alexander and Andersen 1993; Huddy and Terkildsen 1993; Lawless 2004b; Schneider and Bos 2014). Female candidates are assumed to be able to deal more effectively

with “women’s issues,” such as those concerned with the environment, education, and healthcare, while male candidates are viewed to be well suited to deal with issues such as defense, crime, and the economy (Dolan 2010; Huddy and Terkildsen 1993; Kahn 1994; Sanbonmatsu and Dolan 2009). Voters even appear to seek out information in a way that comports with stereotypes about the kinds of issues associated with male and female candidates (Ditonto, Hamilton, and Redlawsk 2014). In addition, voters tend to think female candidates are more liberal and progressive than their male counterparts on various issues (Koch 2000; Koch 2002).

Some studies argue that such gender stereotypes lead voters to favor male candidates over female candidates (Dolan, Deckman, and Swers 2015; Lawless 2004b). In contrast, others claim that voters display little bias for or against female candidates (Anastasopoulos 2016; Brooks 2013) and that partisan cues and issues carry more weight (Anderson, Lewis, and Baird 2011; Dolan 2014a, 2014b; Hayes 2011; Matland and King 2002; Thompson and Steckenrider 1997).

The literature has paid particular attention to whether female voters support female candidates at higher rates than do male voters (Dolan 2008; Rosenthal 1995; Sanbonmatsu 2002). This sort of in-group “gender affinity” could either be a “baseline gender preference” or “statistical” bias because the traits are assumed to be correlated with candidates of different sexes. Yet, studies show that women do not necessarily vote for female candidates more than they do for male candidates (Ekstrand and Eckert 1981; Higgle et al. 1997; Lynch and Dolan 2014; Sapiro 1981) and that this effect is limited under the presence of policy issue cues (Anderson, Lewis, and Baird 2011). Our prior study found no affinity among women but instead turned up evidence that male voters have a baseline affinity for male candidates.

A baseline gender preference is likely to shine through when the most important

determinant of vote choice – partisanship – is not a factor. Some recent studies suggest that a candidate’s party label rather than a candidate’s sex drives vote choice (Anderson, Lewis, and Baird 2011; Dolan 2014a; Falk and Kenski 2006; Hayes 2011; Matland and King 2002). We hypothesized in our previous study that voting for a co-partisan provides a kind of “insurance” that provides assurance as to how a politician will act in office (Ono and Burden, forthcoming). Consistent with this, we found that independents showed the greatest bias in elections where a Democrat opposed a Republican. In contrast, in primaries and other settings where opposing candidates are from the same party, a preference for a male or female candidate is more likely to emerge. We found that Republicans were just as biased as independents when candidates were from the same party.

Another Look at the Office Congruency Hypothesis

The “office congruency” hypothesis contends that voters see female politicians as better suited to some offices and see male politicians as better suited to others. The perceived congruency of candidates of different sexes with different kinds of offices is based on stereotypes about male and female politicians’ characteristics and how they align with the needs of particular offices. Female candidates appear to face a greater challenge when they run for executive office than when they run for legislative office (Huddy and Terkildsen 1993a; Lawrence and Rose 2014; Rose 2013). The broad explanation for this is that voters may perceive male candidates are more likely to have characteristics such as strong leadership and to emphasize issues such as national security that align well with expectations of presidents, while female candidates are more likely to be seen as compassionate and emphasizing domestic issues such as health care and education that are well-suited to being a legislator (Kahn 1996).

The idea also builds on the psychology theory of “role congruity theory” in which

people harbor prejudice against women in leadership roles because men are perceived as having stronger leadership skills. As Eagly and Karau (2002) conclude from their review of many psychology studies of role congruity, women are seen to “possess less agency and more communion and therefore are less qualified for leadership, especially for executive roles” (589, see also Bos, Schneider, and Utz 2017). Masculine personality traits are valued when it comes to “high national or executive office” whereas “typical feminine traits are considered more suitable for lower or non-executive levels of office” (Huddy and Terkildsen 1993a, 504).

This matching of candidate sex and offices could also be the result of voters perceive areas of policy expertise of male and female politicians. Huddy and Terkildsen (1993a) contend that “areas in which males are typically perceived as more skillful, such as the military or economics, are regarded as more important for higher levels of types of offices than competence in typical areas of female policy strength such as dealing with poverty or health care” (505). They go on to point out fundamental shortcomings in addressing these questions. Most of the traits and policy areas thought to be associated with males are also tied to the presidency but might not apply to other national offices or other executive offices “who have not direct responsibility for the armed forces” (506; see also Huddy and Terkildsen 1993b; see also Smith, Paul, and Paul 2007). Their experiments were among the first to make some of these comparisons, suggesting that masculine stereotypes (at least in 1990) were generally viewed as more important for national office than executive office. For example, studies show that people are more likely to favor a man as president when national security issues are salient (Falk and Kensky 2006; Lawless 2004a), but we do not know if this same effect would exist for other national and executive offices.³

³ It is also possible that some statewide executive offices are viewed as “masculine” while others

Our prior study suggested another mechanism: the public simply has more experience with women in some offices compared to others. There have been some members of Congress who were female and about one in five Americans currently has a female representative. In contrast, the public must use imagination to anticipate what a female president would do in office (Burden, Ono, and Yamada 2017). This might create uncertainty that leads voters to more-familiar and perhaps more-predictable male candidates. Research on the first election of black candidates finds that white voters are initially resistant because of the uncertainty and lack of experience with black elected officials (Hajnal 2003). Studies of electoral politics in other countries have found similar effects of citizen exposure to women in office. For example, Beaman et al. (2009) used the random assignment of gender quotas in India to show that after a woman has been elected to a local council, voters exposed to the female elected officials become more likely to see women as effective leaders, and female candidates win more often in subsequent elections. Baskaran and Hessami (2018) use a regression discontinuity design to show that having a female mayor makes it more likely that women are elected to the city council.

At this point we cannot say for certain what combination of exposure to women in office and gender-office congruency attitudes are behind the patterns we have observed. It is possible that voters see women as more appropriate for sub-national offices and are more comfortable voting for them in settings where women have already served in greater numbers.

Yet we were unable to distinguish three explanations for our findings on presidential verses congressional elections because they all pointed to similar observable implications. First, women might be disadvantaged when running for any executive office because of the leadership

are viewed as “feminine.” Our application is to the governor’s election, which Fox and Oxley (2003) categorize as “masculine.”

skills of the office. Second, women might be disadvantaged when running for president because of the national security responsibilities of the office. Third, women might be disadvantaged when running for any office where they have yet to be elected because of voter uncertainty due to lack of experience.

To disentangle these explanations, the chart below separates two dimensions of comparison: the type of office and the level of government. If voters believe that women are less suitable for executive office because of their shortage of leadership skills, then it should be apparent in both presidential and gubernatorial elections (the left column) but not legislative elections at either level of government (the right column). On the other hand, if voters believe that women are less suitable for national office because of the prominence of national security issues at that levels of government, then it should be apparent in national elections (the top row) but not either kind of sub-national election (the bottom row).

		Type of Office	
		Executive	Legislative
Level of Government	National	President	Congressperson
	Sub-national	Governor	State Legislator

The gender-office congruency theory thus generates a hypothesis that the use of candidate sex as a voting heuristic should vary by political office when voters lack information about candidate traits such as leadership ability and positions on national security. Voters might well be biased against female candidates because they lack executive skills or because they have less facility with or less desirable positions on national security issues. In contrast, when such information about candidates is made explicit so that voters may not engage in stereotype-based

inferences, the gender-office link should be broken. If we continue to see differential discrimination by office, then our explanation about uncertainty due to lack of experience with women in specific offices is more viable.

Research Design

We employ an experimental design to study sex bias in voting decisions. The experimental approach allows us to avoid some of the concerns that threaten observational studies. Although studies of real elections are of great value in part because they help to identify how male and female candidates actually differ, it is difficult to isolate effects where female candidates might have been selected differentially during the recruitment process (see Anzia and Berry 2011; Fox and Lawless 2010; Lawless and Pearson 2008). For example, Pearson and McGhee (2013) find in congressional elections that female candidates are favored, but that result is limited to Democratic female candidates because they run disproportionately in districts that are favorable to their party and have more experience. Awareness of this selection bias problem has led many researchers toward experimental approaches rather than observational data to understand the effect of candidate sex on voter decisions (Bauer 2016; Brooks 2013; Fridkin, Kenney, and Woodall 2009; Iyengar et al. 1996; Kahn 1994; Sanbonmatsu 2002). We build on these studies by varying more candidate attributes simultaneously and randomizing the order of those attributes.

We test the hypotheses laid out above using a conjoint survey experiment. Recently introduced to political science, conjoint experiments were widely used in marketing to assess the impact of many product characteristics. Unlike more familiar factorial designs, conjoint experiments vary all treatments simultaneously. Varying each characteristic separately allows the researcher to examine many more conditions than would be possible with a traditional design. It

becomes possible to assess the impacts of the independent and interactive effects of multiple variables on a common outcome metric without sacrificing much statistical power or imposing assumptions about functional forms of relationships (Hainmueller, Hopkins, and Yamamoto 2014). The conjoint analysis also enables us to minimize the effect of social desirability bias by embedding information about candidate sex amid many others pieces of information about the candidates. One might view the conjoint design as an alternative way at getting at the effects of implicit attitudes about female leaders, which have been shown to be distinct from explicit attitudes (Mo 2015).

Following our earlier study closely, we present each subject with a pair of opposing candidates whose profiles are randomly generated from the set of characteristics. We then ask the subject to choose the candidate they would vote for if it was an actual election, a familiar task for most of the electorate. Although some studies give each subject only one candidate at a time to evaluate, presenting two opposing candidates is more realistic as it mimics the decision that voters must make on real ballots. We manipulate candidate attributes within four broad categories of information that a voter might encounter in a salient campaign: personal information, party information, issue information, and polling information.

First, we provide **personal information** about a candidate's background and personality. This includes a candidate's sex, race/ethnicity, age, marital status, experience in public office, and salient personality trait. Controlling these attributes by presenting them explicitly should prevent respondents from inputting stereotypes about personal traits for which sex might be a proxy. The personality traits of candidates are adopted from survey questions conducted by the American National Election Studies that routinely ask whether candidates provide strong leadership, are compassionate, are honest, are intelligent, are knowledgeable, and really care

about people like you.

Second, we provide **party information** about candidates. By varying the party labels for both candidates, we are able to investigate not only the independent effect of a candidate's party affiliation on vote choice, but also the effects of candidate sex when the candidates are from opposing parties (as in a general election) and when they are from the same party (as in a primary election).

Third, we provide **issue information** about each candidate's policy positions and expertise. The issue information in the candidate profiles includes a candidate's positions on abortion, the state budget, gun control, and education, all areas where female and male candidates might plausibly differ on average. In addition, to distinguish *positions* from *emphasis*, we include the following six policy areas as varying attributes to describe the policy expertise of candidates: economic policy, transportation, public safety (crime), education, health care, and the environment.

Fourth, and finally, we vary **polling information** about a candidate's popular support in the public. The reported favorability rating of each candidate is randomly varied among five equally spaced levels from relatively unpopular (34%) to highly popular (70%).

Table 1 summarizes all the attributes of candidate profiles used in our experiment. There is a total of 13 varying attributes. Some attributes take only two values, as in the case of partisanship (Democrat or Republican), whereas others take on several values, as in the case of polling favorability (five values ranging from 34% to 70%). For each profile, we randomly assign a value of each attribute. Because the values of the candidate attributes are all randomly assigned, the use of a conjoint experiment rather than a factorial design makes it possible to

estimate the effect of each attribute with a modest number of observations.⁴

[Table 1 about here]

Our experiment asks respondents to review the profiles of two candidates that are randomly created from the set of attributes and then to choose between them. This evaluation task is repeated ten times, with each pair of candidates displayed on a new screen. The categories of attributes of candidates such as age and experience in office are shown in randomized order across respondents so that the exercise does not inadvertently focus respondent attention on specific attributes.⁵ Because so many attributes are varied, we think it is unlikely that respondents would be able to surmise the purpose of the experiment and behave strategically rather than simply choosing the candidate that seems most appealing. Although one might be concerned that the large number of attributes is unrealistic and might overwhelm respondents, causing them to “satisfice,” but recent studies of this concern do not find a “breaking point” in how respondents behave even when the number of characteristics is as high as 35 (Bansak et al. forthcoming).

Figure 1 presents an example of one set of gubernatorial candidate profiles that was shown to a respondent in our experiment. The visual presentation mimics the one used by Hainmueller, Hopkins, and Yamamoto (2014) and illustrates how attributes are varied across respondents.⁶

⁴ The exact formulas used to estimate the effect of each attribute are explained in Hainmueller, Hopkins, and Yamamoto (2014).

⁵ The order is fixed across ten pairs for each respondent to minimize the cognitive burden.

⁶ This design creates some combinations of candidate attributes that would be rare in real elections. Such implausible combinations may introduce some biases to the results by leading

[Figure 1 about here]

In addition to varying attributes of the candidates, we also vary the office being sought to examine whether candidate sex has a different effect on voter decisions between gubernatorial and state legislative elections. Specifically, we split the ten pairs of candidates being evaluated into five sets of candidates for governor and five sets of candidates for state legislature, and ask respondents to evaluate candidates both for governor and for state legislator. The order of evaluation is randomly determined across respondents. Hence, approximately half respondents in our experiment first evaluated five pairs of candidates for governor and then moved on to evaluating another five pairs of candidates for the state legislature; the remaining respondents evaluated the two groups in the reversed order.⁷

There might be a concern that conjoint experiments, which ask respondents to choose from multiple hypothetical descriptions of objects, do not accurately capture real-world decision-making. However, a study by Hainmueller, Hangartner, and Yamamoto (2015) validated conjoint experiments against real-world behavior. According to this study of voting in Swiss referendums, the results of conjoint experiments closely correspond to the choices made by people under real-world conditions. Thus, we have reason to believe that our findings translate reasonably well to the real world.

our subjects to make artificial judgments without much cognitive effort (Auspurg, Hinz, and Liebig 2009). Our previous study examined this issue and found little evidence that subjects took the experiment less seriously when candidates' party affiliations and issue positions were unorthodox.

⁷ We randomize the order of evaluation in this way to mitigate the concern that respondents may change their behavior when they evaluate the latter five pairs of candidates.

Data and Method of Analysis

We collected data through an online survey experiment that was fielded by YouGov January 9-19, 2018. The sample of 3,000 respondents was matched on demographic variables to a sampling frame based on the U.S. Census Bureau's 2010 American Community Survey, matched on voting and registration variables to the November 2010 Current Population Survey, and matched on attitudinal variables to the 2007 Pew Religious Life Survey. Following the recommendations of Franco et al. (forthcoming) and Miratrix et al. (2018), we report the unweighted results in this paper and treat them as sample treatment effects (although weighted results will also be provided in a subsequent appendix). Among 3,000 respondents in our sample, 2,983 of them successfully completed all of the tasks in our conjoint experiment. Because each of our respondents evaluated ten pairs of candidates, we have data from 29,830 evaluated pairings.

The outcome variable of interest in this study is which candidate was chosen by a subject. The choices are coded as a binary variable, where a value of one indicates that a respondent supported the candidate and zero otherwise. We analyze the data following the statistical approach developed in Hainmueller, Hopkins, and Yamamoto (2014) to estimate non-parametrically what they define as the average marginal component effect (AMCE). To estimate the AMCE of each attribute on the probability that the candidate will be chosen, we employ the "cjoint" package (ver. 2.0.4) developed by Strezhnev et al. (2016). The standard errors are clustered by the respondent to account for the dependence of observations across respondents. In the following sections, we first present the average direct effect of a candidate's sex on voter decisions. We then present the results that test for heterogeneous treatment effects by including the interactions between candidates' attributes and respondents' characteristics to

reveal how bias against female candidates varies among different subpopulations within the electorate to test for the gender-affinity hypothesis. Next, we explore differences within and across parties to test whether party affiliation moderates any gender bias that exists in the full population. Finally, we report results separately for gubernatorial and state legislative candidates to test for the gender-office congruency hypothesis.

Overall Effects of Candidate Sex on Vote Choice

We begin with Figure 2, which shows the relative importance of candidate attributes on electoral support. The dots denote point estimates for the AMCEs, which indicate the average effect of each attribute on the probability that the candidate will be chosen. The horizontal bars show 95% confidence intervals. Our main interest here is the importance of candidate sex on voter decisions. Because each attribute is dichotomous, the estimated effects can be directly compared to one another. Note that within each category of attributes, one treatment is arbitrarily chosen as the omitted reference category, just as in a regression framework where one category serves as the baseline. For candidate sex, for instance, we set male as the baseline.

[Figure 2 about here]

The results of our experiment show that candidate sex matters, but in a way contrary to what we observed in previous experiments. On average, respondents are 1.07 percentage points more likely to vote for a female candidate ($p < .01$). Because of complete randomization of all attributes, this effect cannot be attributed to other factors such as age, experience, issue priorities, or personality traits that might differ (in reality or perception) between male and female candidates in real elections. The other effects in Figure 2 are mostly in line with expectations and findings from earlier studies. Respondents are more likely to vote for candidates who are younger, have experience in public office, have higher approval ratings, want to cut spending

rather than raise taxes, are pro-choice rather than pro-life, and do not want to make it easier to buy a gun. We take the effect of candidate sex amid other variables as evidence that voters are biased in favor of female candidates in sub-presidential as a baseline preference and not just because of traits inferred in a “statistical” fashion when evaluating a female candidate.

The pro-female effect is even larger – 2.15 percentage points – when the analysis is limited to opposite-sex pairings that feature a contest between a male candidate and a female candidate.⁸ Relative to some other variables such as political experience and policy positions, the effect of candidate sex on voter decisions is modest in magnitude, although it is large enough to tip close elections. More important is that we estimate the effect to be positive for female candidates.

Conditional Effects of Candidate Sex

We have so far analyzed the overall effect of candidate sex on voter decisions. Theory and our previous research indicate that this effect will vary across context and different kinds of respondents. To examine the heterogeneity of treatment effects, Figure 3 compares the estimated marginal effects of candidate sex on voter decisions for several subgroups of respondents (ACIEs). This figure shows how the tendency to vote for a female candidate varies across the respondent’s characteristics such as sex, education level, age, social class, region, race/ethnicity, and partisanship. Negative values of estimates imply that respondents punish female candidates relative to male candidates.

[Figure 3 about here]

⁸ This is twice as large as the effect of candidate sex shown in Figure 2, because the latter one includes the half of observations where there should be no gender effect due to the fact that the choice is between candidates of the same sex.

The favoritism toward female candidates in sub-presidential elections appears to be quite uniform across the electorate. Differences by race and ethnicity, region, and age are modest to nonexistent. Although treatment effects do not actually differ much across respondent attributes, we do uncover some differences across levels of education. Whereas respondents who have a bachelor degree or above tend to reward female candidates, those who have no bachelor degree do not have any bias for female candidates.

In addition, we find direct evidence of gender affinity among women: our results indicate that female respondents vote disproportionately for female candidates at higher rates when other candidate attributes are varied. Men show no bias in either direction, while women vote on average 1.88 percentage point more for female candidates. This is in line with conventional wisdom but contrary to our earlier study that found a gender affinity effect only among men (who were biased in favor of male candidates). It is possible that this surprisingly pattern is also a version of the alternative we have offered to the office congruency theory. Men might disfavor women for national office because of the national security responsibilities or because of lack of familiarity with women office holders at that level. Female voters, in contrast, are shifted in the pro-female direction at both levels. They show no bias either direction in national elections but a distinct gender affinity in sub-presidential elections where national security is not at issue and women have been more regular office holders.

We now turn to an examination of partisanship, the more important determinant of vote choices. We measured respondents' party ID in three different ways: (1) party ID based on a three-point scale (i.e., the initial question in the ANES setup), (2) party ID based on a seven-point scale (where leaners are coded as partisans), and (3) party ID based on a seven-point scale (where leaners are coded as independents). Here we see that, regardless of how we measure

party ID, Republicans are slightly negative toward female candidates (although not to a statistically significant degree) while both Democrats and independents are biased in favor of female candidates.

Voting without Partisan Insurance

There is reason to believe that voters' biases may be different in general election settings than in party primary. In a general election, party labels are the most important candidate characteristics; the reliance on "insurance" by party loyalists makes independents most responsive to candidate sex. In a primary, partisanship is neutralized because opposing candidates share a party label, forcing voters to turn to other characteristics to differentiate candidates seeking the party nomination. Our prior study of hypothetical presidential and congressional candidates found that women were disfavored in primaries among Republican respondents but experienced no bias (positive or negative) among Democrats. However, that analysis lumped all same-party pairings together without regard for the party. For example, we analyzed the voting choices of Democratic respondents when the candidates were of the same party whether that party was Democratic or Republican. Those potentially unrealistic scenarios might have muted the effects we estimated. In this study we examine primary voting in a more realistic way by examining which candidates party identifiers select when they are of the same party (e.g., Democratic respondents choosing between two Democratic candidates).

Figure 4 displays the estimated bias for or against female candidates among Democrats, Republicans, and independents, separately for same-party pairings (primary-type elections) and different-party pairings (general-type elections). As in earlier figures, estimates significantly to the right of zero indicate favoritism toward the female candidate while those left of zero indicate favoritism toward the male candidate. The top portion depicts scenarios where both candidates are

from the same party, the bottom where the two candidates are from opposing parties. Party ID shown in this figure is coded such that “leaners” are considered partisans rather than independents, but the results are similar regardless of how leaders are coded. The results show that in settings that resemble primaries, Republicans are significantly biased against female candidates (and thus toward male candidates). In contrast, Democrats and independents show favoritism toward female candidates. Interestingly, however, both Republicans and Democrats do not use a candidate sex as a cue in settings that resemble general elections, where a party cue differentiates pairs of candidates. In short, there seems to be a general tendency in primaries for Democrats to favor women and for Republicans to favor men. In effect, Republicans are “screening out” some female candidates at the primary stage while Democrats are “screening in” female candidates. Independents’ reactions to candidate sex suggest overall favoritism to female candidates in either setting. These tendencies roughly mirror how partisans behaved overall (Figure 3), but the point estimates are larger in magnitude, suggesting that the overall results were driven mostly by biases in primary scenarios rather than general election scenarios.

[Figure 4 about here]

This is somewhat consistent with the analysis of Lawless and Pearson (2008), which suggested an advantage for female candidates in Democratic primaries and a disadvantage for female candidates in Republican primaries, but where the small number of women made it difficult to generate statistically significant effects. It is also congruent with Thomsen’s (2015) argument about why congressional women are so much more common in the Democratic Party. Both the self-selection of male and female candidates and selective recruiting by party leaders may steer more women toward the Democratic Party in part because these actors anticipate that primary voters in the two parties will respond to female candidates in opposite fashion. As a

result, even if there is no bias toward candidate sex in general elections, biases displayed in primaries when partisanship no longer provide “insurance” skews the distributions of male and female candidates from each party that appear in the general election. To the degree that gatekeepers and potential candidates anticipate these biases in primaries, the supply of candidates may amplify the larger number of women elected as Democrats rather than Republicans.⁹

In line with our theory about how exposure to female office holders reduces voter uncertainty, the biases we observe could also come about because Democrats and independents are more likely to live in states and districts where women actually been elected to these offices. For example, according to the 2012 ANES, 11% of self-identified Republicans were represented by a female member of Congress while 13% of independents and 19% of Democrats were. Although these percentages might only see to differ modestly, the prevalence of female representatives among Democrats is nearly twice that among Republicans, and only a small difference would be needed to produce the small magnitude effect we observe. To examine this theory more directly, the next section of the paper examines differences across offices.

Revisiting Gender-Office Congruence

⁹ A study by Kirkland and Coppock (forthcoming) also uses conjoint experiments and finds some evidence for voter bias against *male* candidates in an environment where voters are given less information. Their study differs from ours in two important ways. First, the authors compare elections with and without party labels, but do not examine elections where both candidates are from the same party. Second, their experiment does not tell respondents what office is being sought. Instead, the experiment varies the previous office held by the candidate, ranging from local offices such as city council to representative in Congress.

A key motivation of our study is to refine the “office congruency” hypothesis to determine whether women are disadvantaged relative to men in offices that are executive, in offices that have national security responsibilities, or both. We also offered an alternative explanation centered about the real experiences of voters with women in particular offices and the effects of uncertainty. Our previous conjoint study compared presidential candidates and congressional candidates, finding evidence of a bias against women in the former but not in the latter. Here we find evidence of a bias against men in sub-presidential elections.

To explore further, our experiment designed half of the elections as being for governor and half for state legislator. The results are easy to summarize. We find a no meaningful difference between the two kinds of offices. Women are advantaged equally in both gubernatorial and state legislative elections by small amounts approximating the overall effect of approximately one percentage we reported above: 1.09 points in gubernatorial elections and 1.07 points in state legislative elections.¹⁰ We thus have comparable findings for four offices that yield the following pattern for female candidates: disadvantaged in presidential, advantaged in both gubernatorial and state legislative, and neither advantaged nor disadvantaged in congressional.¹¹ What is needed is an explanation to make sense of this pattern.

¹⁰ They are marginally significant at the 10% level ($p = .061$ and $.067$, respectively).

¹¹ The four conjoint designs were essentially identical. The only notable differences are that that the two national elections featured in our earlier study included positions on immigration and national security spending plus relative expertise on foreign policy whereas the current experiment (focused on sub-presidential offices) replaced those with positions on gun control and school vouchers plus relative expertise on transportation. The budget position item was also slightly modified to reflect the fact that most states have balanced budget requirements but the

Office congruency does not seem a likely explanation if it is understood as favoring men for executive positions. Although female candidates were disadvantaged in presidential elections, they were actually advantaged in gubernatorial elections. Office congruency better explains the comparison between national and sub-national elections, as women were disadvantaged in one of the two federal offices but advantaged in both of the sub-presidential offices. By this account, voters might view male and female politicians as equally viable executive leaders (and maybe even give preference to women), but are reluctant to elect women to national offices where national security issues such as use of the military, immigration, and international affairs are key responsibilities. This account might help explain differences between the two national offices in our prior study given the heavier national security duties of the President, who is commander-in-chief, compared to the House of Representatives, which makes policy and funds foreign operations but does not command the military directly or even approve international treaties and high level military and diplomatic leaders.

Some data on experiences with women in public office might help make sense of these divergent results. No women have served as president (and only one has even been nominated by a major party). The Center for American Women and Politics (CAWP) at Rutgers University provides useful background on other offices. CAWP reports that 84 members of the House of Representatives are female (19.3%). This is a modest increase over the share of women a decade ago (16.8%) but a dramatic rise above the share in the early 1990s, as just 6% of House members were female in 1991. The CAWP web site shows that women currently comprise 25.3% of state legislators, a figure that has only risen slightly since the late 1990s. Indeed, the share of seats

federal government does not.

held by women was over 20% as early as 1993. Currently six of the 50 governors are female (12%), a drop from the high point of nine female governors (18%) in both 2004 and 2007.

Although a full analysis of how experiences with men in women in office influence how open constituents are to seeing candidates of different sexes elected is beyond the scope of this paper, we are able to provide a tentative test of the “exposure” thesis as an explanation for anti-female bias in presidential elections and pro-female bias in state elections. We do this by interacting the candidate sex treatment with the degree to which a respondent has been “exposed” to female office holders. Specifically, we use the percentage in a respondent’s state legislature held by women in 2017. Although this is not a pristine measure of exposure to female office holders due to complications such as residential mobility that results in many people moving from one state to another, which is likely to add noise to the measure and weaken the effects we estimate, if the exposure idea is correct, we should see increasing likelihoods of voting for female candidates the more that the legislature in a respondent’s state of residence is occupied by female legislators.

Figure 5 displays the results, separating the exposure measure into three levels representing 25th, 50th, and 75th percentiles: high (27.8% female), medium (23.6% female), and low (20.4% female). The point estimates indicate that voter bias in favor of female candidates grows with exposure to female office holders. When the share of office holders who are female is small, the bias is small and insignificant. But as the share grows, so does the favoritism toward female candidates. We take this evidence as preliminary support for our theory that voter reactions to candidate sex vary by office in large part because the public has more experience with women in some offices (such as state legislator) than others (such as president) and that

exposure to female office holders reduces uncertainty about their likely behavior in office and lessens the bias against female candidates in subsequent elections.

[Figure 5 about here]

Conclusion

Our experiment helped to solidify some of the findings from our previous studies, but it also raises new questions that are not easily answered. The results of our conjoint experiment demonstrate that voters use candidate sex as a voting heuristic even when it is embedded among various other cues about candidates. We find evidence of a small positive “baseline gender preference” for female candidates running for governor and state legislator. This stands in contrast to presidential elections, which showed a bias in the opposite direction, and congressional elections, where no bias was apparent. Although our prior study attempted to separate out a “Hillary effect” caused by awareness of Hillary Clinton as a specific female presidential candidate, it is possible that public attitudes toward female candidates might have changed in response to Donald Trump’s election and the #MeToo movement. We are not yet able to dismiss this explanation.

We observed supportive evidence for the “partisan insurance” theory in which Democratic respondents become more supportive of female candidates and Republican respondents become less supportive of female candidates when they are in a primary scenario where party affiliation does not distinguish the candidates. In these settings, Republican voters tend to “screen out” female candidates while Democrats “screen in” female candidates, creating further imbalances in the supply of candidates in the general election..

The pattern across offices only partially conforms to the “gender-office congruency” hypothesis. Executive leadership skills do not seem to be the gender role stereotypes that

motivate respondents in electing candidates for public office. Our experiment intentionally varied whether candidates displayed strong leadership. Even if respondents do not put credence in this aspect of our candidate decisions, we do not observe a general pattern of discrimination against women in executive (seemingly agentic) offices versus legislative (seemingly communal) ones. Rather, our experiments demonstrated bias against female candidates for president but for those running for governor, both of which are executive offices. We believe that pattern of reactions to candidate sex is better explained by a theory of the experiences that voters have with women in various public offices. Under this theory, bias is likely to persist until women begin to hold the offices in question. The underrepresentation of women is something of a reinforcing cycle that is disrupted as more female candidates overcome the challenges that the electoral process presents to provide voters with more concrete experiences where they are represented by women.

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Table 1: Types of Attributes Varied in Candidate Profiles

Attributes	Values
Person information	
Sex	Male
	Female
Age	36 years old
	44 years old
	52 years old
	60 years old
	68 years old
	76 years old
Race / Ethnicity	White
	Black
	Hispanic
	Asian American
Family	Single (never married)
	Single (divorced)
	Married (no child)
	Married (two children)
Experience in public office	12 years
	8 years
	4 years
	No experience
Salient personal characteristics	Provides strong leadership
	Really cares about people like you
	Honest
	Knowledgeable
	Compassionate
	Intelligent
Party information	
Party affiliation	Democratic Party
	Republican Party

Table 1 (continued): Types of Attributes Varied in Candidate Profiles

Attributes	Values
Issue information	
Policy area of expertise	Public safety (crime) Economic policy Transportation Healthcare Education Environmental issues
Position on government budget	Wants to balance the budget through a tax increase Wants to balance the budget through spending cuts
Position on gun control	Wants to make it more difficult to buy a gun Wants to make it easier to buy a gun Wants to keep rules about the same
Position on abortion	Abortion is a private matter (pro-choice) Abortion is not a private matter (pro-life) No opinion (neutral)
Position on education	Favors school vouchers Opposes school vouchers
Poll information	
Favorability rating among the public	34% 43% 52% 61% 70%

Note: This table shows the attributes and attribute values that are used to generate the candidate profiles for our conjoint experiment.

Figure 1: Experimental Instrument (Gubernatorial Election)

Please carefully review the two potential candidates, running in **the gubernatorial election**, detailed below.

	Candidate A	Candidate B
Age	68 years old	52 years old
Family	Single (divorced)	Single (never married)
Experience in public office	8 years	8 years%
Party affiliation	Republican Party	Democratic Party
Policy area of expertise	Education	Environmental issues
Race / Ethnicity	Black	Hispanic
Gender	Male	Female
Position on government budget	Wants to balance the budget through a tax increase	Wants to balance the budget through a tax increase
Position on education	Opposes school vouchers	Opposes school vouchers
Salient personal characteristics	Really cares about people like you	Knowledgeable
Position on abortion	Abortion is not a private matter (pro-life)	Abortion is a private matter (pro-choice)
Position on gun control	Wants to make it more difficult to buy a gun	Wants to make it easier to buy a gun
Favorability rating among the public	52%	61%

If you had to choose between them, which of these candidates would you vote to be **Governor of your state**?

Candidate A

Candidate B

Figure 2: Marginal Effects of Candidate Attributes on Vote Choice

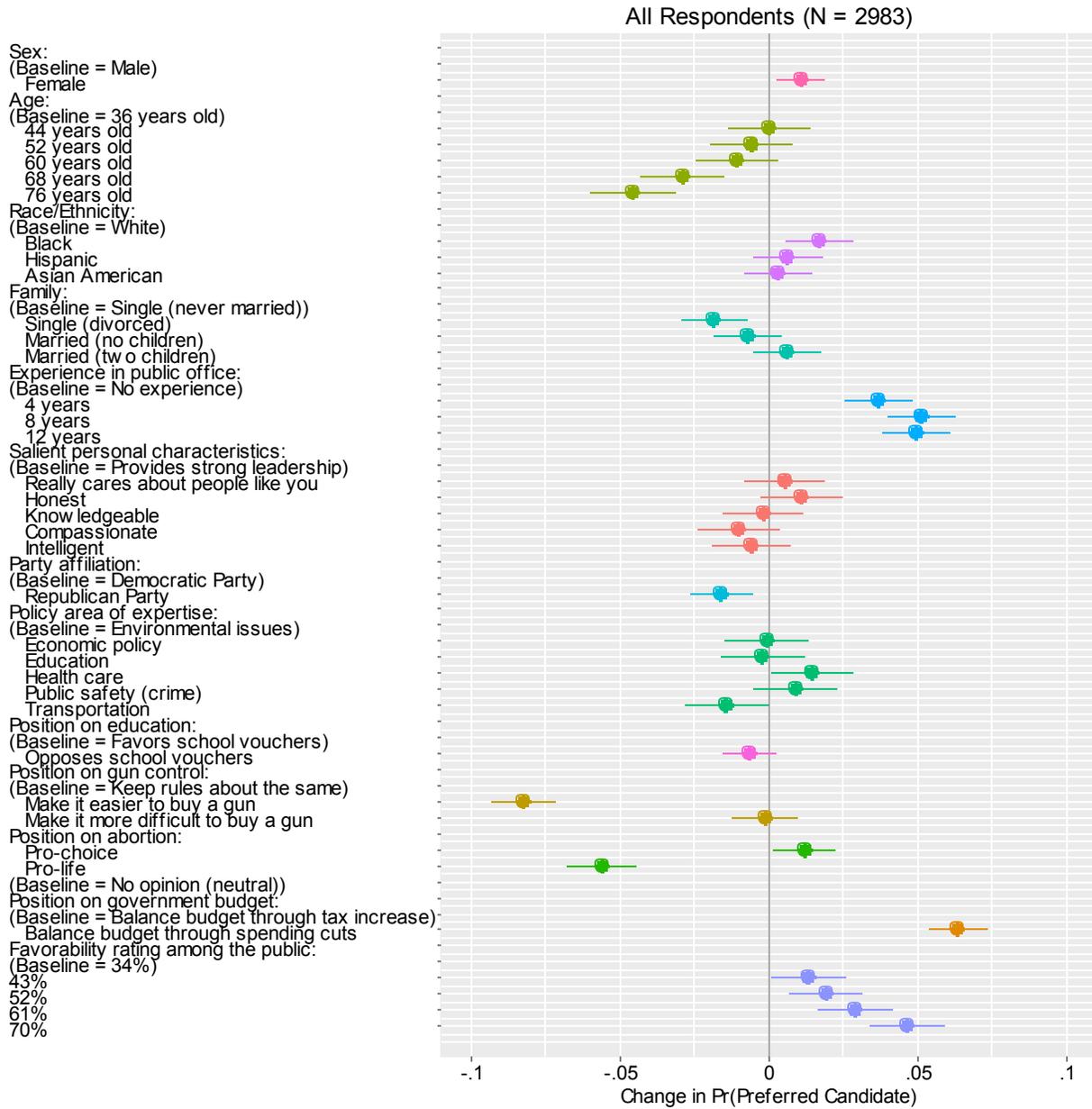
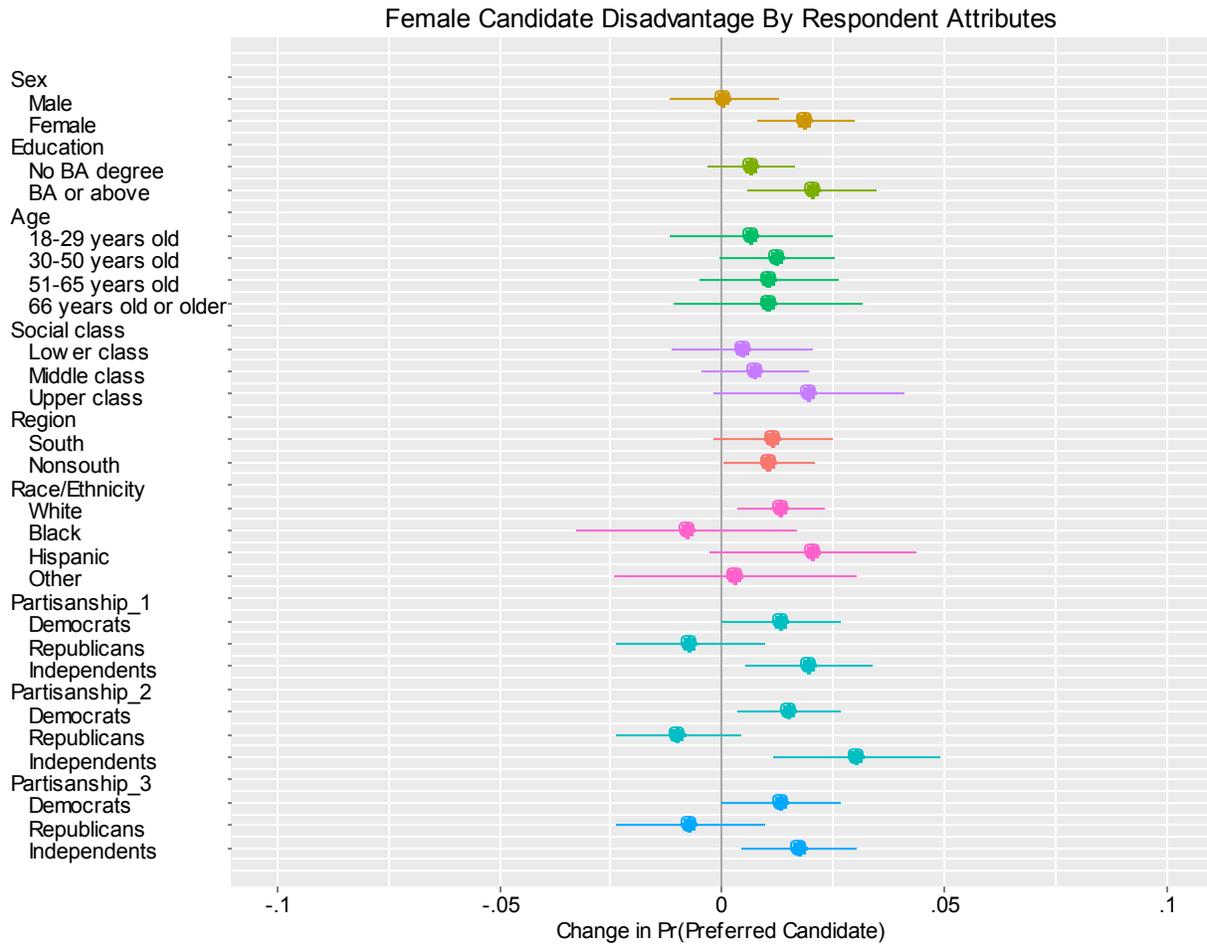


Figure 3: Marginal Effects of Candidate Sex on Vote Choice by Respondent Attributes



Partisanship 1: 3-point scale

Partisanship 2: 7-point scale (leaners are coded as partisans)

Partisanship 3: 7-point scale (leaners are coded as independents)

**Figure 4: Marginal Effects of Candidate Sex on Vote Choice
by Respondent Party ID (leaners coded as partisans)**

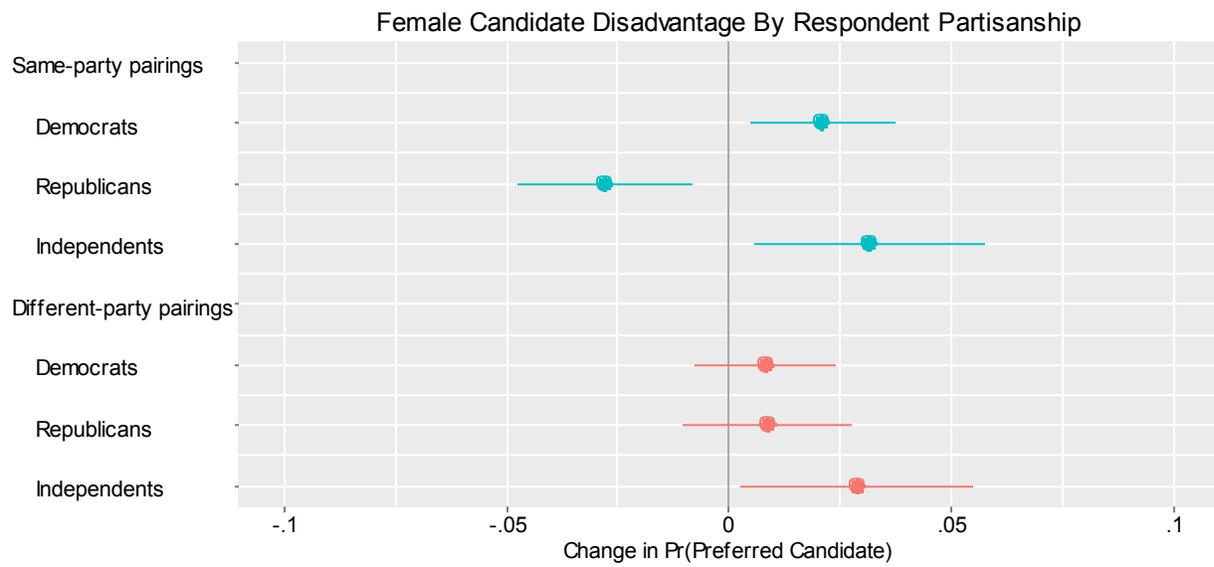


Figure 5: Marginal Effects of Candidate Sex in State Legislative Elections by Exposure

