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Bargain Shopping: How Candidate Sex Lowers the Cost of Voting

Heather L. Ondercin

Appalachian State University

Sarah A. Fulton

Texas A&M University

Previous research shows that candidate sex serves as a heuristic that lessens the informational burden of political decision making. Building upon this research, we investigate the heuristic effects of candidate sex on the decision to turnout to vote in an election. We posit that by providing ideological and nonideological information about the candidates, candidate sex serves as an informational shortcut that reduces the costs associated with voting and enhances the likelihood of voting in elections when a female candidate is present. Our expectations are supported, even after controlling for a variety of individual-, candidate- and district-level characteristics that are correlated with turnout. Individuals are more likely to turnout in elections featuring a woman candidate, and consistent with our expectations, these effects are especially strong for female Democrats, whose sex and party heuristics convey a consistent "liberal" cue. Our research offers theoretical and empirical contributions to the literature on gender, candidate heuristics, and voter turnout.

Keywords: Candidate sex, turnout, voting, information costs, ideology, stereotypes, heuristics, women candidates

The cost of voting weighs heavily on the decision of whether to vote because the expected benefit of voting is infinitesimally small. One of the key factors contributing to the price of voting is the cost of political information (Downs 1957). Because the electorate tends to exhibit low levels of political knowledge (Deli Carpini and Ketter 1996; Ondercin and Jones-White 2011), the inability to differentiate between candidates can lead to voters abstaining (Adam and Merrill 2003; Lassen

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2005). Voters look for ways to "save" on the cost of information by using short-cuts or heuristics (Lau and Redlawsk 2001; Sniderman, Brody, and Tetlock 1991). In low-information elections, voters commonly use candidate characteristics, like candidate sex, as an information substitute when making political judgments (Matson and Fine 2006; McDermott 1997, 1998; Mo 2015).

We theorize that candidate sex reduces the cost of voting by making it easier to place the candidates ideologically. In our argument, candidate sex serves as a heuristic that lessens the informational burden of political decision making (Blais 2000; Rosenstone and Hansen 1993; Verba, Schlozman, and Brady 1995). We expect that voter turnout is higher when a female candidate is present because voters use candidate sex to infer information about the candidates. Because information is less costly when a woman is in the race, voter turnout increases. Importantly, we argue that not all candidates provide the same cue. We expect to find the strongest effects of candidate sex when the cues are consistent with party heuristics. Cues offered by Democratic women are more consistent and easier for voters to process, whereas the cues sent by Republican women are not as clear.

Using the 2006 Cooperative Congressional Election Survey (CCES) along with a supplemental survey of local political experts that corresponds to the congressional districts in the CCES, we discover that candidate sex increases voter turnout by supplying information, independent of alternative explanations. We demonstrate that the presence of a female candidate shapes the informational environment in complex ways overlooked by existing studies. Our results confirm that candidate sex acts as a heuristic that provides information to voters and lowers the cost of turning out to vote.

This article makes unique theoretical and empirical contributions to research on candidate gender and turnout. The cost of voting is reduced when a female candidate is present because candidate sex increases the likelihood of respondents to place the candidates ideologically, and the ability to place the candidates ideologically is a key driver in the decision to turn out. These empirical findings reinforce research demonstrating that voters draw on candidate sex to form assessments of candidates (Bauer 2015a; Ditonto 2017; Holman, Merolla, and Zechmeister 2011, 2016, 2017; Schneider and Bos 2014). We add to this body of research by demonstrating that candidate sex not only influences candidate evaluations and vote choice but also influences voters' propensity to turn out. Our results also confirm that candidate sex not only has a direct impact on the likelihood of voting

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but also works indirectly through the mediating variable of ideological placement. Much of the work on female candidates evaluates their impact on the behavior of girls and women, based on the theory that female candidates serve as symbolic representatives who enhance the knowledge and engagement of girls and women (e.g., Atkeson 2003; Broockman 2014; Fridkin and Kenney 2014; Lawless 2004; Wolbrecht and Campbell 2007). This manuscript builds upon and extends this scholarship by demonstrating that female candidates shape not only the behavior of girls and women but also that of men, even after controlling for alternative explanations for turnout.

TURNOUT AND CANDIDATE SEX

The informational cost of voting plays an essential role in both formal and empirical studies of voter turnout (Blais 2000; Downs 1957; Niemi 1976; Rosenstone and Hansen 1993; Sanders 1980; Verba, Schlozman, and Brady 1995).[1] In Downs' seminal work (1957), informational costs play a pivotal role in predicting turnout because the expected utility of voting is typically infinitesimally small. Because all information is costly to absorb and utilize, "free" information acquired incidentally as a by-product of daily activities is of particular significance in the Downsian model of voting (Downs 1957, 221–25). Further refinements to the Downsian model incorporate individual-level characteristics like education, age, income, home ownership, and church attendance as factors that affect voter turnout by altering the cost of casting a ballot (Verba, Schlozman, and Brady 1995; Rosenstone and Wolfinger 1978).

Although individual-level characteristics play a central role in shaping participation, low levels of political knowledge in the electorate suggest that voters are unwilling to "pay" the cost of political information (Delli Carpini and Keeter 1996). Instead of paying full price to become informed, voters look for bargains when engaging in political decision making. Voters commonly use heuristics, such as party, ideology, endorsements, polling results, and appearance as information shortcuts (Lau and Redlawsk 2001). Voters use these shortcuts to replace complete information about the candidates. The availability of these shortcuts decreases the costs of turning out to vote because voters have fewer pieces of information to gather in making a choice.

1. Volumes of research have examined voter turnout and, more generally, political participation. For more complete reviews of this literature see Schlozman (2002) and Blais (2000).

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Although political party is the most important and useful heuristic, other candidate characteristics provide useful information to voters. One heuristic that receives insufficient attention in models of turnout is candidate sex. Do citizens use candidate sex as a shortcut to lower the informational cost of voting, thereby increasing the likelihood of turning out on Election Day? Candidate sex offers an easy cue for voters to differentiate the candidates. In low-information elections, candidate sex is one of the most important cues used by voters (Matson and Fine 2006). Candidate sex is used to infer information about candidate quality, candidate competencies, and candidate traits (Bauer 2015b; Huddy and Terkildsen 1993; Mo 2015).

Importantly, candidate sex is also used to make ideological judgments about the candidates, and female candidates are considered more liberal than male candidates (Koch 2000, 2002; McDermott 1997, 1998). Because voters generally view female candidates as more liberal than their inter-party male colleagues, they are able to glean ideology from candidate sex (Sanbonmatsu and Dolan 2009; Schneider and Bos 2016). These expectations about the relative liberalness of women running for office is a useful heuristic: women in office are more liberal than their male colleagues, are more likely to take a stand on liberal issues, and are more likely to receive endorsements from liberal groups (Crowder-Meyer and Cooperman 2018; Holman 2014; Swers 2002). We expect voters to use this information to make judgments about the ideological placement of the female candidate and to extrapolate judgments about the male candidate. Given the importance of ideology in voting decisions (Burden 2004; Downs 1957), potential voters who can identify both candidates' ideologies will have lower informational costs associated with voting compared to those who cannot place the candidates. Thus, ideology mediates the relationship between turnout and candidate sex.

H_{1a}: *Individuals will place candidates ideologically at a higher rate when there is a female candidate than when there are two male candidates.*

H_{1b}: *Individuals will be more likely to turnout when they can ideologically place candidates.*

Heuristics are used as a substitute for political knowledge (Lau and Redlawsk 2001; Sniderman, Brody, and Tetlock 1991). Knowledge about the candidates, and political knowledge in general, plays an important role in motiving political participation (Burns, Schlozman, and Verba 2001; Fridkin and Kenney 2014). Although political knowledge is

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measured by correctly assessing factual information, we do not require voters to "correctly" place candidates on an ideological scale. Despite lacking political knowledge, misinformed voters tend to be confident and to behave like informed voters (Kuklinski et al. 2000). The ability of voters to use heuristics effectively is highly debated by scholars (Achen and Bartels 2017; Kuklinski and Quirk 2000; Lau and Redlawsk 2001; Lupia 1994). Here, we are interested in how heuristics influence the decision to turnout, not whether voters "correctly" use candidate sex to reach a voting decision. If these hypotheses are correct, then we should observe individuals being more likely to place candidates on an ideological scale (even if that placement is inaccurate) when one of the candidates is a female than when both candidates are men.

One implication of our theory is that we expect the effect of candidate sex to be stronger when the female candidate is a Democrat compared to when the female candidate is a Republican. Stereotypical information is activated and applied to help individuals comprehend and simplify information (Kunda and Spencer 2003). In the political context, voters will be more likely to use heuristics when the cues present consistent information. In addition to sex, voters commonly rely on party heuristics to make political judgments (Lau and Redlawsk 2001, Schaffner and Streb 2002). Gender and party stereotypes often have differential effects depending on the gender–party combination (Bauer 2018; Cassese and Holman 2017). Thus, gender–party interactions shape the type of information and amount of information conveyed. Female Democrats convey a consistent ideological cue: both women and Democrats are stereotyped as being "caring," "compassionate," and "liberal" (Dolan 2004; King and Matland 2003; Sanbonmatsu and Dolan 2009; Schneider and Bos 2016). On the other hand, the combination of Republican and woman contains conflicting information and is more difficult for voters to understand. As a result, we expect to see a larger increase in voter turnout when there is a female Democratic candidate than when there is a female Republican candidate.

***H*$_2$:** *The impact of candidate sex on the likelihood of turning out will be larger when the female candidate is a Democrat than when the female candidate is a Republican.*

Our expectations focus on the influence of a single female candidate. The number of races in which two female candidates are present is growing; however, these remain relatively rare (only six races in our

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dataset). We do not expect there to be an interactive effect when there are two female candidates.[2]

To summarize, we expect to observe a greater propensity to vote when a female candidate is present. This relationship between candidate sex and turnout reflects the mediating role of ideology in turnout decisions, and the increased tendency of individuals to ascribe the ideology to female candidates ($\boldsymbol{H_{1a}}$ and $\boldsymbol{H_{1b}}$). This increased likelihood of voting should be especially pronounced for female Democratic candidates ($\boldsymbol{H_2}$).

DATA

Because candidate cues ought to be the most prominent in low-information elections (McDermott 1997, 1998), midterm elections provide an ideal setting in which to test our hypotheses due to the lower salience and dearth of information typically available in midterm elections compared to presidential elections (Campbell 1960; Tufte 1975). Also, until 2016, no presidential election in history featured a viable female general election candidate. Congressional elections have the additional benefit of yielding a greater number of cases and variation compared to gubernatorial or Senate elections.

The primary data source was the 2006 Cooperative Congressional Election Study (CCES); these data were used for our dependent variable and as the primary source of our individual-level independent variables. The CCES is a nationally representative study conducted in two waves in the fall of 2006. The pre-election wave was administered in October–November, before the November 7 midterm elections. This wave included questions on a variety of respondent demographics and political attitudes. The postelection wave was conducted in November, after the elections, and includes the question used as our dependent variable: whether the respondent turned out to vote (1) or not (0).[3] Our

2. We tested for the possibility of an additional negative or positive influence on turnout in elections with both a female Democrat and Republican candidate by adding an interaction between a female Democrat and a female Republican. The likelihood ratio tests showed no difference between models with the interaction term and models without the interaction term. The substantive results of the models also remained unchanged by adding the interaction term. Thus, races with two female candidates can be parsimoniously modeled by including the indicators for a female Democrat and a female Republican and simply summing these effects. Notably, both candidates were female in only 6 races. Thus, additional positive or negative effects should be examined further when this type of race is more common.

3. In our sample, 67.8% of respondents turned out, whereas 19.7% abstained from voting. Also, 12.5% of individuals who completed the pre-election survey did not answer the postelection turnout question, which was coded as missing data. Overreporting of voting is common in survey research (Burns,

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key independent variable, candidate sex, was broken down by party identification. Female Democrat was used as a dummy variable, where 1 indicated that the Democratic candidate in the district was female, whereas 0 indicated that the Democrat was male. Female Republican was operationalized the same way.

Other key individual-level variables were derived from the CCES. Our central hypothesis was that perceptions of female candidates' ideology increase turnout by reducing the costs of voting. We measured ideological placement as a trichotomous variable, with 2 indicating that the respondent could place both candidates on an ideological scale, 1 indicating that the respondent could place 1 of the candidates, and 0 indicating that the respondent was unable to place either candidate.[4] We did not assume that individuals would use sex to make assumptions about the female candidate's ideology in isolation. Rather, respondents were likely to use information about candidate sex (male and female) to form ideological estimates of both candidates.

Respondent sex was used as a dummy variable, with 0 indicating a male respondent and 1 indicating a female respondent. The literature on voter turnout suggests a myriad of individual-level attributes that influence the likelihood of turning out to vote. As a result, we controlled for the following characteristics at the individual level: political knowledge, the strength of approval of George W. Bush, partisanship, partisan strength, education, age, income, homeownership, marriage, race, and religiosity. Details about these variables can be found in Appendix A.

When estimating the effect of candidate sex on turnout, it is important to consider factors that are influential in turnout decisions and are correlated with female candidates. Particularly important for our purposes are electoral competitiveness and candidate quality. Omitting these variables, or underspecifying them, would bias the apparent effect of sex on turnout. Competitive races activate participation by generating more information about the candidates, issues, and stakes. Individuals are aroused to participate by enhanced mobilization efforts by

Schlozman, and Verba 2001; Silver, Anderson, and Abramson 1986; Traugott and Katosh 1979). However, previous research has shown that this has little substantive impact on analyses predicting voter turnout (Katosh and Traugott 1981; Silver, Abramson, and Anderson 1986).

4. The CCES asks respondents to place candidates on an ideological scale ranging from very liberal (0) to very conservative (100). Respondents who located the House candidates anywhere on the scale were classified as having placed the candidate. Respondents who answered "don't know" were classified as not having placed a candidate. Because we are only concerned with whether an individual acts on the ideological inferences she or he holds, we did not make any judgments about whether the respondent correctly classified the candidate.

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candidates, parties, and interest groups. Because female candidates are especially sensitive to the competitiveness of a race (Fulton et al. 2006) and because competitiveness is linked to higher turnout (Jackman 1987; Rosenstone and Hansen 1993), omitting a variable for competition would overstate the effect of candidate sex on turnout.

Additionally, individuals desire leaders who exhibit personal integrity, competence, and an understanding of the issues. Candidates who possess these qualities summon individuals to the polls (Adams and Merrill 2003; McCurley and Mondak 1995; Mondak 1995). To the extent that female candidates exhibit qualities that individuals' value, and if these qualities promote participation, then omitting them will also exaggerate the influence of candidate sex in models of turnout. Moreover, many of these quality characteristics (e.g., integrity, competence, grasp of issues) overlap with stereotypes individuals hold about male and female candidates. Thus, by controlling for them, we present a more conservative test of our hypotheses.

To capture the electoral context, we merged information about candidate quality and candidate characteristics into the CCES from a 2006 study of political informants who were expert political observers in their districts and were familiar with the Democratic and Republican candidates for Congress (Adams et al. 2011; Buttice and Stone 2012; Stone and Simas 2010).[5,6] This study included 155 congressional districts, 100 of which were randomly selected, and 55 of which were oversampled due to their competitiveness. Appendix B provides detailed information on the districts in our sample.

The informant survey contributes insights about the competitiveness of the district and candidate quality; variables that should both be correlated with candidate sex and influential to turnout. To capture competitiveness, informants predicted the winning candidate's vote. The winner's expected vote ranged from 45% to 95%, with an average of 60%. Because greater values of the winning candidate's expected vote indicate lower competition, it may be helpful to consider the variable as a reflection of

5. The political informants included 4,400 delegates to the 2004 Democratic and Republican conventions and state legislators who were asked in October of 2006 to provide information about their district's Democratic and Republican candidates for Congress. In total, 925 informants responded, for a response rate of 21%. On average, six informants in a district rated each of the Democratic and Republican candidates. Informants were reasonably well distributed across sex and partisanship: 59% of the informants were male and 41% were female; 55% were Democrats and 44% were Republicans.

6. Another advantage of using the CCES is that it allowed us to study the use and influence of stereotypes in a nonexperimental setting (Dolan 2014).

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lopsidedness.[7] To measure quality, we accessed a series of questions that asked informants to rate the candidates of both parties on seven items related to personal quality: integrity, ability to work well with others, competence, grasp of the issues, ability to find solutions to problems, qualifications to hold office, and overall strength as a public servant.[8,9] The use of the informant survey limited the number of congressional races in our analysis. However, it was critical to control for confounding factors, in particular, electoral competitiveness and candidate characteristics to isolate the effect of candidate sex. The informant survey provided robust measurements of these items.

We also included a variety of district-level variables. As is customary in models of voting behavior, we excluded uncontested races, and we controlled for seat status and the challenger's office-holding experience (Bond, Covington, and Fleisher 1985; Jacobson 1987; Jacobson and Kernell 1983). Women were more likely to run in certain types of districts (Ondercin and Welch 2009; Palmer and Simon 2006). If district characteristics were correlated with both where women ran and turnout, then our models could suffer from a simple case of omitted variable bias. We generated a women-friendly district index based on nine district demographics: nonsouth, district size, percent foreign-born, relative median income, percent older than 25 with 4 or more years of college, percent employed in blue-collar occupations, percent Hispanic, percent black, and percent urban. A district was awarded one point for each characteristic that made it similar to locations where women had been successfully elected between 2002 and 2010. We also included the average of the 2000 and 2004 Democratic presidential vote for the congressional district in models. Finally, we included a dummy variable

7. We recognize that demographic characteristics of the informants may have influenced their evaluation of the winner's expected vote. For instance, informants may have rated the electoral prospects of candidates of the same party more highly. To address the concern that informant bias may influence the ratings, we created two dichotomous variables indicating whether the informant shares the same partisanship with the candidate they are rating (-1 = opposite party, 1 = same party), as well as whether the informant shares the same sex with the candidate they are rating (-1 = opposite sex, 1 = same sex). We regressed the winner's expected vote on "shared partisanship" and "shared sex." The coefficient for "shared partisanship" and "shared sex" yielded a value indicating the extent of the advantage or disadvantage the candidate receives, based on these demographics. This value was then subtracted from the original item score and aggregated up to the district level. This procedure has been validated by previous research (Stone and Maisel 2003; Stone and Simas 2010).

8. We used a procedure similar to the one described in the preceding footnote to account for informants more generously appraising the valence of candidates of the same partisanship and/or gender.

9. Principal components factor analysis confirmed that the items tap a single dimension.

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Table 1. Turnout by sex and partisanship

Variable	*% Turnout*	*% Difference*
Democratic man / Republican man[a]	71	–
Democratic woman / Republican man	79	8**
Democratic man / Republican women	76	5
Democratic woman / Republican woman	79	8**

*$P \leq .10$; **$P \leq .05$.
[a]Baseline used to calculate differences.

to indicate whether there was an election for the Senate or governorship. These higher-level and higher-profile offices may have driven turnout higher in these districts.

Our data included information from both the individual and district levels. Thus, we weighted our analyses using the survey weights provided by CCES to account for the size of the district sample and clusters by district.

RESULTS

Table 1 lists the average rate of turnout in races that featured male or female candidates. When the Republican candidate was male, the presence of a female Democratic candidate increased turnout by 8%. When the Democratic candidate was male, the presence of a female Republican increased turnout by 5%; however, this difference fails to reach conventional standards for significance. When two male candidates were running, the presence of two female candidates increased turnout by 8%. Turnout was higher in elections with a female candidate, especially a female Democratic candidate, providing initial support for our expectations.

To test whether the higher levels of turnout depicted in Table 1 is attributable to candidate sex or is an artifact of omitted variables correlated with candidate sex, we conducted a logit model of the likelihood of voting. Model 1 reported in Table 2 depicts our baseline and illustrates that the presence of a female candidate increases the likelihood of turning out to vote, even after controlling for confounding factors. Compared to races with two male candidates, individuals are 3.4% more likely to vote in races with a female Democratic candidate.[10]

10. Predicted probabilities and marginal effects were all calculated with continuous and ordinal variables set to their mean and dichotomous variables set to the median.

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Table 2. Analysis of candidate sex, ideology, and turnout

Variable	*Turnout Model 1 (SE)*	*Ideology Model 2a (SE)*	*Turnout Model 2b (SE)*	*Turnout Model 3 (SE)*
Female Democrat	0.25**	0.33**	0.21**	0.41[a]
	(0.11)	(0.15)	(0.10)	(0.14)
Female Republican	0.02	0.16	−0.04	−0.02[a]
	(0.12)	(0.21)	(0.11)	(0.15)
Ideological placement	–	–	0.54**	0.58[a]
			(0.05)	(0.05)
Female Democrat × placement	–	–	–	−0.19[a]
				(0.09)
Female Republican × placement	–	–	–	−0.01[a]
				(0.10)
Respondent sex	0.02	−0.29**	0.08	0.07
	(0.07)	(0.05)	(0.07)	(0.07)
Open seat	−0.02	−0.23	0.002	−0.01
	(0.14)	(0.21)	(0.13)	(0.13)
Challenger experience	−0.19	0.43**	−0.27**	−0.27**
	(0.12)	(0.16)	(0.12)	(0.12)
Winner's expected vote	−0.03**	−0.06**	−0.01	−0.01
	(0 .01)	(0.01)	(0.01)	(0.01)
Dem candidate's characteristics	0.13**	0.12**	0.11**	0.12**
	(0.04)	(0.06)	(0.04)	(0.04)
Rep candidate's characteristics	0.11**	0.13**	0.09**	0.09**
	(0.04)	(0.05)	(0.04)	(0.04)
Democratic	−0.26	−0.38**	−0.20	−0.20
	(0.17)	(0.12)	(0.17)	(0.17)
Republican	−0.16	−0.29**	−0.13	−0.13
	(0.17)	(0.12)	(0.17)	(0.17)
Strength party identification	0.29**	0.23**	0.26**	0.26**
	(0.08)	(0.05)	(0.08)	(0.08)
G.W. Bush approval	0.24**	0.21**	0.20**	0.20**
	(0.07)	(0.05)	(0.07)	(0.07)
Knowledge	2.10**	2.51**	1.68	1.68**
	(0.13)	(0.12)	(0.138)	(0.14)
Education	0.15**	0.05**	0.16**	0.16**
	(0.03)	(0.02)	(0.03)	(0.03)
Age	0.02**	−0.0001	0.02	0.02**
	(0.003)	(0.002)	(0.003)	(0.003)
Income	0.02	0.02**	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Homeownership	0.30**	0.10	0.30**	0.30**
	(0.08)	(0.07)	(0.08)	(0.08)
Married	−0.05	0.08	−.080	−0.08
	(0.07)	(0.06)	(0.08)	(0.08)
Race	0.27**	0.07	0.28**	0.27**
	(0.09)	(0.07)	(0.09)	(0.09)

Continued

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Table 2. Continued

Variable	*Turnout Model 1 (SE)*	*Ideology Model 2a (SE)*	*Turnout Model 2b (SE)*	*Turnout Model 3 (SE)*
Religiosity	0.20**	0.09**	0.19**	0.19**
	(0.08)	(0.05)	(0.08)	(0.08)
Senate race	−0.07	−0.30**	−0.03	−0.03
	(0.10)	(0.13)	(0.10)	(0.10)
Governor race	−0.03	−0.11	−0.001	0.004
	(0.13)	(0.13)	(0.13)	(0.13)
Women friendly district	−0.04*	−0.03	−0.04*	−0.04*
	(0.02)	(0.03)	(0.02)	(0.02)
District presidential vote	0.01*	0.001	0.01*	0.01*
	(0.01)	(0.01)	(0.01)	(0.01)
Constant	−2.92**	–	−3.61**	−3.61**
	(0.65)		(0.68)	(0.69)
Cutoff 1		−0.79	–	–
		(0.82)		
Cutoff 2		0.75	–	–
		(0.83)		
No. of observations	8128	9257	8128	8128
No. of PSU	133	134	133	133
F test	26.04**	31.54**	32.92**	31.92**

SE, standard error. *$P \leq .10$; **$P \leq .05$.
[a]Conditional on interaction.

Substantively, this effect was larger than that of a respondent increasing one educational category (on a six-point scale), which only increases the likelihood of turning out by 2.2%. The coefficient for female Republican was indistinguishable from zero. Candidate sex only matters to turnout when the female candidate was a Democrat.

Table 2 reports control variables that are stable and in the expected direction, regardless of specification. Consistent with the previous literature on voting behavior, competitiveness and candidate quality promoted higher turnout. At the individual level, the propensity to turn out is enhanced by strong partisanship, presidential approval, knowledge, education, age, homeownership, race, and religiosity. Open-seat races and elections featuring an experienced challenger have no independent impact on turnout after controlling for other factors. Turnout was lower in women-friendly districts but higher in more Democratic districts.[11]

11. We ran a set of robustness checks disaggregating the women-friendly district measure. The substantive results of the mode remained unchanged.

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Income, marital status, and party identification also were insignificant in the models, but this may have been due to multicollinearity.

Does the presence of a female candidate promote increased turnout? Together, $\boldsymbol{H_{1a}}$ and $\boldsymbol{H_{1b}}$ posit that a female candidate is more likely to impart ideological information that eases the task of voting. To see whether this is the case, we ran an ordered logit model predicting the likelihood of an individual placing the candidates on an ideological scale; model 2a in Table 2 reports these results. $\boldsymbol{H_{1a}}$ is confirmed. Respondents were more likely to place candidates ideologically when one of the candidates was a female Democrat. A female Democratic candidate increased the chances that respondents could place both candidates by 7.6%. This effect was substantial compared a one-unit increase in a respondent's education level, which only increased the likelihood of being able to ideologically place both candidates by 1.2%. The influence of a female Republican in the race was positively related to the ideological placement of the candidates but was statistically insignificant.

Does the ability to make ideological inferences spark turnout? Model 2b tested this expectation by including a measure indicating whether the respondent can place both the candidates on an ideological scale (Table 2). Being able to place a candidate ideologically significantly increased an individual's likelihood to turnout. These respondents were 10.4% more likely to vote than those who were unable to place a candidate. Individuals were still more likely to turnout when a female Democratic candidate was present, even after controlling for the respondent's ability to identify the candidates' ideological positions. Substantively, the effects remained unchanged: a female Democratic candidate increased an individual's likelihood of turning out by 4.1%. These results are consistent with expectations outlined in $\boldsymbol{H_{1b}}$. Thus, candidate sex was a heuristic that contained ideological information about the candidates that lowered the cost of voting. This finding is consistent with other work suggesting that the presence of female candidates promotes confidence in vote choice (Fulton and Ondercin 2013) and that female elected officials increase knowledge about politics (Fridkin and Kenney 2014).

Female Democratic candidates are not only a significant predictor of turnout but are also a significant predictor of ideological placement. The lack of significance for Republican women on ideological placement and turnout means that Republican women candidates do not act as a mediating variable. The results of models 2a and 2b demonstrate that

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ideological placement of the candidates matches the basic requirements to act as a mediating variable between candidate sex and turnout, but only for Democratic women.

To assess the role ideological placement has in mediating the relationship between candidate sex and turnout, we conducted a mediation analysis (Baron and Kenney 1986; Imai, Keele, and Tingley 2010). We used the causal mediation framework developed by Imai, Keele and Tingley (2010) because this framework can handle dichotomous variables better than the linear structural models used in mediation analysis.[12] The general framework for mediation requires the specification of two equations: the mediating equation and the outcome equation. We used the specification of ideological placement reported in model 2a for the mediating model, with one change; instead of running it as an ordered logit we specified the equation as a regression (Table 2). We used the model specification of model 2b for turnout (Table 2). We have reported the average total mediation effect as suggested by Hicks and Tingley (2011). The effect of ideological placement was a significant mediator when female Democratic candidates were in the race; it accounted for 22% of the effect of a female Democratic candidate on turnout. This analysis indicates that candidate sex, when there is a female Democratic candidate, increases turnout both directly and indirectly.

The influence of candidate sex only reached traditional levels of significance when the female candidate was a Democrat. Republican women failed to reach statistical significance in the models. To directly test $\boldsymbol{H_2}$, we tested the difference in the coefficients for female Democrat and female Republican. The effect for female Democrats was significantly larger than female Republicans ($F = 0.08$). Thus, $\boldsymbol{H_2}$ is supported.

Only 22% of the relationship between Democratic woman candidates and turnout was mediated by ideological placement. Additionally, the coefficient for a female Democratic candidate remained significant after including ideological placement. These two sets of results means there was a direct effect of candidate sex on voter turnout. To understand who was directly affected by candidate sex, we added an interaction term between candidate sex and ideological placement in model 3. The interaction term allowed us to assess how candidate sex influenced turnout depending upon the respondent's ability to place the candidates.

12. The mediation analysis was carried out using the mediate package in STATA software (StataCorp, College Station, TX). See Hicks and Tingley (2011) for a description of the procedure.

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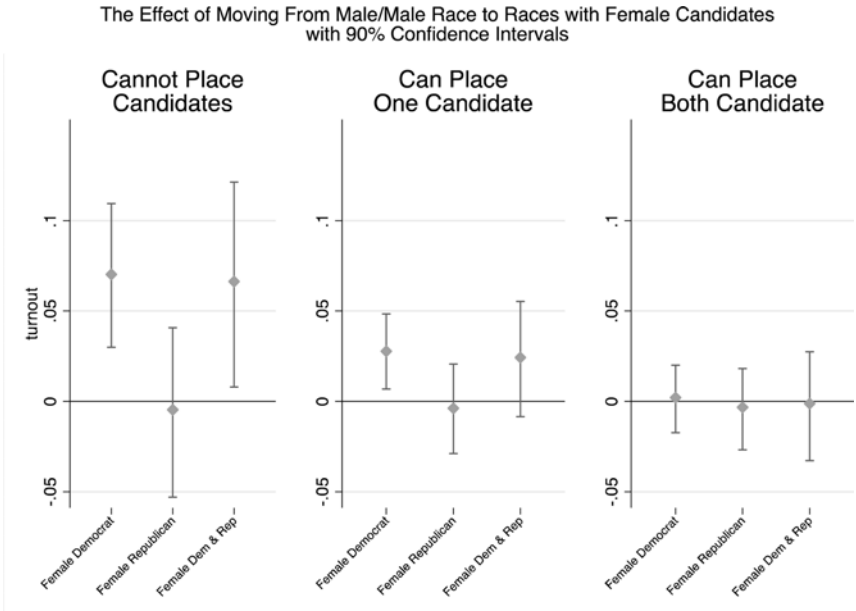

FIGURE 1. Unit effect of candidate sex on turnout conditional on ideological placement.

Because interactions are difficult to interpret from a results table, and given the binary structure of our dependent variable, we analyzed the unit effect of candidate sex conditional on ideological placement.[13] The unit effect is illustrated in Figure 1, and the results for this model are reported in the third column of Table 2.

Candidate sex had a direct impact on those who remain unable to place the candidates ideologically or were only able to place one of the candidates ideologically. Among individuals who could not place the candidates ideologically, the likelihood of voting significantly increased by 7.0% in elections with a female Democrat and by 6.6% when both candidates were female. In contrast, the effect of a female Republican did not reach traditional levels of statistical significance. Candidate sex

13. We analyzed the unit effect of candidate sex because it would have been inappropriate to directly interpret the effects of interaction terms from the results table. As Brambor, Clark, and Golder (2006) explain, the coefficients and significances in an interactive model are only meaningful when the constituent terms are set to 0. They recommend calculating the predicted probabilities or the marginal effects (the first difference of the predicted probabilities) to assess the relationships of interest. Given the binary nature of our constituent variables, the unit effect was the appropriate quantity of interest.

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continued to exert a direct effect on turnout among those who could only place one candidate. When there was a female Democratic candidate, turnout was 2.7% higher; however, the effects were not statistically significant for female Republicans or races with two females. The direct effect of candidate sex on turnout among those who could place one or fewer candidates is consistent with the interpretation that candidate sex and partisanship reduce the informational costs of voting by providing a shortcut to nonideological information about issue competency, issue attention, and personality traits for those who lack an ideological orientation of the candidates. The lack of significance of candidate sex when respondents can place both candidates is indicative of ideology acting as a mediator.

Regardless of candidate partisanship, candidate sex did not independently impact turnout once the ability to ideologically place the candidates was taken into account. This result should not be interpreted as meaning that candidate sex had no impact on turnout for the ideologically oriented. Instead, as depicted in models 1a and 1b, candidate sex provided a shortcut to ideological information ($\boldsymbol{H_{1a}}$) and ideological information encourages turnout ($\boldsymbol{H_{1b}}$), suggesting an indirect pathway for the influence of candidate sex on the propensity to vote for those who could identify the candidates' ideological positions.[14]

CONCLUSION

The scholarship on individuals' usage of informational heuristics to formulate attitudes and mobilize behavior has added significant value to our understanding of individual decision making. Our work builds on these foundational studies and integrates principles of each in a novel manner. Our approach demonstrates that the presence of female candidates shapes the electoral context in complex ways that alter the likelihood of voting. Individuals infer ideological and nonideological information about the candidates lowering the cost of voting.

In conjunction with candidate sex, individuals look to the candidates' partisanship to make inferences about the candidates' ideology, issue competency, and traits (Dolan 2004; King and Matland 2003; Sanbonmatsu and Dolan 2009; Schneider and Bos 2016). Our results

14. Given that our results were primarily driven by Democratic women candidates, we ran the analysis excluding Republican women. Table C1 in the Appendix contains these results, which are almost identical to those reported in this article.

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indicate that candidate sex provides additional information — beyond just party — to make inferences about a candidate's ideological position. However, our results suggest that individuals glean the most information from candidate sex when sex and partisan stereotypes are complementary, as is the case with female Democrats. On the other hand, individuals do not appear to be able to infer ideological or nonideological traits about female Republicans, most likely because of the conflict between partisan and sex stereotypes. Our research has enhanced our understanding of when and how individuals use candidate sex as a heuristic, and our results are consistent with previous research that illustrates the subtle role of candidate sex in shaping the informational environment that citizens confront (Fulton and Ondercin 2013).

If we think that increased turnout is normatively a good thing, then our findings suggest one positive influence of gender stereotypes. By lowering the cost of voting, gender stereotypes increase voter turnout. However, if we also feel that diverse representation is normatively a good thing for democracy, we need to consider whose turnout is more likely stimulated when there is a female candidate. In addition, does this increased turnout shift electoral outcomes? Do stereotypes motivate those generally supportive of female candidates? Or do they mobilize voters who are not supportive of female candidates? Our results, combined with the answers to these questions, could shed light on the challenges women candidates face.

Existing research suggests that increased turnout in elections with women candidates is a function of the symbolic nature of these candidates (Atkeson 2003; Broockman 2014; Fridkin and Kenney 2014; Lawless 2004; Wolbrecht and Campbell 2007). Our results suggest an alternative explanation that the increase in voter turnout is driven by the desire of some voters to enhance the representation of women in government. If the motivation behind increased turnout were the symbolic representation of women, we would not expect ideological placement to condition the propensity to turnout. However, our results suggest that candidate sex operates as a source of information not inspiration to voters.

Our study has focused on the use of gender stereotypes as a heuristic to lower the cost of voting. However, we believe that the process illustrated here is not just limited to gender-based stereotypes. Because voters use a wide variety of heuristics to lower the cost of voting, we expected that they would employ other identity based stereotypes as heuristics. Racial

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stereotypes and sexual identity stereotypes influence candidate evaluations and support for candidates (Bailey and Nawara 2017; Schneider and Bos 2011, McDermott 1998). If these stereotypes have an ideological component, voters could use them to make ideological judgments about the candidates to lower the cost of voting. Additionally, the use and effect of gender stereotypes can depend on the electoral context (Bauer 2015a, 2015b; Cassese and Holman 2017; Holman, Merolla, and Zechmeister 2011, 2016, 2017). For example, when respondents feel threatened, they may prefer women and minority candidates because they represent the opportunity for change (Brown, Diekman, and Schneider 2011; Kelly et al. 2018). Different contextual situations might enhance or diminish the effectiveness of identity-based stereotypes to lower the cost of voting. Further research is needed to understand the conditions under which identity-based stereotypes facilitate voting by providing individuals with ideological information.

Heather L. Ondercin is an Assistant Professor in the Department of Government and Justice at Appalachian State University. She researches how gender shapes political behavior over time in the United States. Her work has been published in outlets including Political Research Quarterly, Political Behavior, *and* Electoral Studies.

Sarah Fulton is an Associate Professor at Texas A&M University. Her research interests include campaigns and elections, emphasizing women in politics. Her publications appear in the American Political Science Review, *the* Journal of Politics *and the* Political Research Quarterly.

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APPENDIX

Appendix A. Descriptive information on independent and dependent variables

Variable	*Coding*	*Mean (SD)*
Turnout	0 = Did Not Vote 1 = Voted	0.78 (0.42)
Democratic female: Indicates whether the Democratic candidate is a woman.	0 = Man 1 = Woman	0.23 (0.42)
Republican Female: Indicates whether the candidate is a woman.	0 = Man 1 = Woman	0.14 (0.35)
Respondent Sex: Indicates whether the respondent is a man or a woman.	0 = Man 1 = Woman	0.52 (0.50)
Open seat	0 = No 1 = Yes	0.20 (0.40)
Challenger experience: Indicates whether the challenger had office-holding experience.	0 = No 1 = Yes	0.38 (0.49)
Winner's expected vote	45.039% to 94.791%	60.20 (8.02)
Democrat candidate characteristics: Personal integrity, ability to work well with other leaders, competence, grasp of issues, ability to find solutions to problems, qualifications to hold office, overall strength as a public servant	1 = Extremely weak 7 = Extremely strong	4.50 (0.97)
Republican candidate characteristics: Personal integrity, ability to work well with other leaders, competence, grasp of issues, ability to find solutions to problems, qualifications to hold office, overall strength as a public servant	1 = Extremely weak 7 = Extremely strong	4.38 (1.04)
Democrat: Respondent is a Democrat (omitted category is independent)	1 = Democrat 0 = Not Democrat	0.31 (0.46)
Republican: Respondent is a Republican (omitted category is independent)	1 = Republican 0 = Not Republican	0.31 (0.46)
Strength of partisan identification	0 = Independent 1 = Leaning partisan 2 = Not so strong partisan 3 = Strong partisan	1.90 (1.04)
G.W. Bush approval: Strength of G.W. Bush's approval	1 = Neither approve/ disapprove 3 = Strongly approve/ disapprove	2.66 (0.50)
Knowledge: Average ability to identify (ID) partisanship of MC, Gov, Sen1, and/or Sen2	0 = Incorrectly IDs all officers 1 = Correctly IDs all officers	0.82 (0.30)
Ideological Placement: Can place both candidates on ideological scale	0 = Cannot place both 1 = Can place both	0.42 (0.49)

Continued

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Appendix A. Continued

Variable	*Coding*	*Mean (SD)*
Education: Respondent's education	1 = No high school 6 = Post-graduate degree	3.31 (1.38)
Age: Respondent's age	18 to 95 years	48.94 (15.17)
Income: Respondent's income.	1 = <$10K 14 = $150,000+	8.24 (3.36)
Homeownership: Did respondent own home?	0 = Do not own home 1 = Own home	0.74 (0.44)
Married: respondent marital status.	0 = Unmarried 1 = Married	0.63 (0.48)
Race: Indicates whether respondent is white	0 = No 1 = Yes	0.79 (0.41)
Religiosity: Respondent religious importance	0 = Unimportant 1 = Important	0.69 (0.46)
Senate Race: Was there also a senate race?	0 = No 1 = Yes	0.71 (0.45)
Governor Race: Was there also a governor race?	0 = No 1 = Yes	0.79 (0.41)
Women-friendly district	0 = Least women friendly 9 = Most women friendly	4.00 (2.13)
District presidential vote: Average of the 2000 and 2004 vote for the Democratic presidential candidate in the district	22% to 90.5%	47.43 (11.62)

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Appendix B. Districts in sample

Male Republican Male Democrat	*Female Republican Female Democrat*	*Male Republican Female Democrat*	*Female Republican Male Democrat*
15 Open Seats	1 Open seat	9 Open seats	5 Open seats
48 Republican incumbents	3 Republican incumbents	10 Republican incumbents	8 Republican incumbents
46 Democrat incumbents	2 Democrat incumbents	6 Democrat incumbents	2 Democrat incumbents
AR01, AZ03, AZ05, CA01, CA11, CA18, CA21, CA28, CA31, CO01, CO03, CO05, CO07, CT02, FL02, FL08, FL15, FL16, FL22, GA01, GA03, GA05, GA08, GA12, IA01, IA03, ID01, ID02, IL02, IL03, IL05, IL14, IL15, IN02, IN03, IN08, IN09, KY02, KY04, LA01, LA03, MA04, MA10, MD02, MD03, MD04, MD06, MD08, MI01, MN05, MO02, MO04, MO05, MO07, MO09, NC02, NC03, NC04, NC06, NC11, NE03, NH02, NJ13, NY05, NY06, NY23, NY24, NY25, NY29, OH01, OH04, OH06, OH14, OR01, OR03, PA02, PA07, PA08, PA10, PA15, PA18, RI01, SC05, TN01, TN03, TN04, TN06, TN09, TX02, TX05, TX06, TX07, TX09, TX14, TX15, TX17, TX20, TX28, TX29, UT03, VA03, VA11, WA03, WA04, WI03, WI06 WI07, WI08, WV01	CA05 (Yan/Matsui) CA16 (Winston/Lofgren) CO04 (Musgrave/Paccione) MN06 (Bachmann/ Wetterling) NM01 (Wilson/Madrid) OH15 (Pryce/Kilroy)	AZ08 (Graf/Giffords) CA22 (McCarthy/Beery) CA50 (Bilbray/Busby) CT04 (Shays/Farrell) FL09 (Bilirakis/Busansky) FL11 (Adams/Castor) FL13 (Buchanan/Jennings) IL06 (Roskam/Duckworth) IL08 (McSweeney/Bean) KS02 (Ryun/Boyda) MN03 (Ramstad/Wilde) MN04 (Sium/McCollum) NH01 (Bradley/Shea-Porter) NJ07 (Ferguson/Stender) NV02 (Heller/Derby) NV03 (Porter/Hafen) NY11 (Finger/Clarke) NY20 (Sweeney/Gillibrand) OH13 (Foltin/Sutton) PA06 (Gerlach/Murphy) PA13 (Bhakta/Schwartz) TX18 (Hassan/Jackson Lee) WA08 (Reichert/Burner) WI02 (Magnum/Baldwin) WI04 (Rivera/Moore)	CA45 (Bono-Mack/Roth) CT05 (Johnson/Murphy) IL04 (Melichar/Gutierrez) IL13 (Biggert/Shannon) IL17 (Zinga/Hare) KY03 (Northup/Yarmuth) ME01 (Curley/Allen) NY19 (Kelly/Hall) OH18 (Padgett/Space) OK05 (Fallin/Hunter) PA04 (Hart/Altmire) TX22 (Sekula-Gibbs/ Lampson) VA01 (Davis/O'Donnell) VA02 (Drake/Kellam) VTAL (Rainville/Welch)

APPENDIX C

Table C1. Analysis of democratic candidate, ideology, and turnout

Variable	*Turnout Model 1 (SE)*	*Ideology Model 2a (SE)*	*Turnout Model 2b (SE)*	*Turnout Model 3 (SE)*
Female Democrat	0.25**	0.33**	0.21**	0.41[a]
	(0.11)	(0.16)	(0.10)	(0.14)
Ideological placement	–	–	0.54**	0.57[a]
			(0.05)	(0.05)
Female Democrat × placement	–	–	–	−0.19[a]
				(0.09)
Respondent sex	0.02	−0.28**	0.08	0.07
	(0.07)	(0.05)	(0.07)	(0.07)
Open seat	−0.02	−0.23	0.002	−0.01
	(0.14)	(0.21)	(0.13)	(0.13)
Challenger experience	−0.19	0.46**	−0.27**	−0.27**
	(0.12)	(0.15)	(0.12)	(0.12)
Winner's expected vote	−0.03**	−0.06**	−0.01	−0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Dem. candidate's characteristics	0.13**	0.11*	0.11**	0.11**
	(0.04)	(0.06)	(0.04)	(0.04)
Rep. candidate's characteristics	0.11**	0.12**	0.08**	0.09**
	(0.04)	(0.05)	(0.04)	(0.04)
Democratic	−0.26	−0.37**	−0.20	−0.20
	(0.17)	(0.12)	(0.17)	(0.17)
Republican	−0.16	−0.29**	−0.13	−0.13
	(0.17)	(0.12)	(0.17)	(0.17)
Strength party identification	0.29**	0.23**	0.26**	0.26**
	(0.08)	(0.05)	(0.08)	(0.08)
G.W. Bush approval	0.24**	0.21**	0.20**	0.20**
	(0.07)	(0.05)	(0.07)	(0.07)
Knowledge	2.10**	2.51**	1.68**	1.68**
	(0.13)	(0.12)	(0.14)	(0.14)
Education	0.16**	0.05**	0.16**	0.16**
	(0.02)	(0.02)	(0.03)	(0.03)
Age	0.02**	−0.0001	0.02**	0.02**
	(0.003)	(0.002)	(0.003)	(0.003)
Income	0.02	0.01**	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Home ownership	0.30**	0.11	0.30**	0.30**
	(0.08)	(0.07)	(0.08)	(0.08)
Married	−0.05	0.07	−0.08	−0.07
	(0.07)	(0.06)	(0.08)	(0.08)
Race	0.27**	0.07	0.28**	0.27**
	(0.09)	(0.07)	(0.09)	(0.09)
Religiosity	0.20**	0.09**	0.19**	0.19**
	(0.08)	(0.05)	(0.08)	(0.08)

Continued

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Table C1. Continued

Variable	*Turnout Model 1 (SE)*	*Ideology Model 2a (SE)*	*Turnout Model 2b (SE)*	*Turnout Model 3 (SE)*
Senate race	−0.07	−0.30**	−0.03	−0.03
	(0.10)	(0.13)	(0.10)	(0.10)
Governor race	−0.03	−0.10	−0.003	0.001
	(0.13)	(0.13)	(0.13)	(0.13)
Women friendly district	−0.04*	−0.02	−0.03*	−0.04*
	(0.02)	(0.03)	(0.02)	(0.02)
District presidential vote	0.01*	0.001	0.01*	0.01*
	(0.01)	(0.001)	(0.01)	(0.01)
Constant	−2.94**	–	−3.64**	−3.62**
	(0.70)	–	(0.68)	(0.69)
Cutoff 1	–	−0.90	–	–
		(0.80)		
Cutoff 2	–	0.63	–	–
		(0.81)		
No. of observations	8,128	9,257	8,128	8,128
No. of PSU	134	134	134	134
F test	25.50**	32.94**	33.87**	34.82**

* $P \leq .10$; ** $P \leq .05$.
[a]Conditional on interaction.

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