

**DIVERSE DISTRICTS AND THE ELECTORAL CONNECTION:
ELECTORAL COALITIONS AND
LEGISLATORS' PURSUIT OF POLICY PREFERENCES**

by

Katherine Wickard Drake

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Political Science)
in The University of Michigan
2010

Doctoral Committee:

Professor Richard L. Hall, Co-Chair
Professor John E. Jackson, Co-Chair
Professor Donald R. Kinder
Professor Charles Shipan
Professor Elisabeth R. Gerber

© Katherine Wickard Drake
2010

Dedication

To Dad, Mom, Josh, and Liz

Acknowledgments

A PhD is never an individual accomplishment and throughout the process I accumulated a large debt to many people.

I received generous support from grants and fellowships that helped me to complete my research. The Gerald R. Ford Fellowship in 2007 and 2009 and the Rackham Pre-Doctoral Dissertation Fellowship in 2008 allowed me to make considerable progress on my research. In addition, a research grant from the Institute for Research on Women and Gender helped me with my data collection in Winter 2007.

My committee deserves enormous gratitude for their patience, support, and brilliant advice. Rick Hall was great at brainstorming whenever I was stuck and was unfailingly enthusiastic about the project throughout the process. John Jackson was essential at keeping me focused on the big picture – high quality research in a *finished* dissertation. Don Kinder, over three years of working together, showed me the art of careful research and even amiably supported my move from studying attitudes to Congress. Liz Gerber was an exemplary outside member who asked probing, thought-provoking questions and put up with multiple office visits. Chuck Shipan always contributed constructive critiques and well-timed encouragement.

Of course, my intellectual development did not begin with my dissertation and there are multiple professors who contributed to my success before the prospectus was even written. Cara Wong and Jake Bowers were brave enough to hire me as a research

assistant before I knew anything. They were infinitely patient with my mistakes and slow learning and made me a better researcher. Vince Hutchings challenged me in class and as a researcher and always treated me as an equal colleague. Ted Brader read papers, spending more time than he should have, and also gave great advice, both about academics and good wine. Orit Kedar helped to introduce me to the interaction of institutions and behavior and was very influential in my thinking. Nancy Burns and Ken Kollman, as well as attendees at IWAP, CPS talks, and conferences, graciously gave their time and helpful comments on my work.

My favorite part of attending the University of Michigan was the amazing group of colleagues and friends I gained. I don't have room to do them justice here but I would like to thank Robin Phinney, Shanna Kirschner Hodgson, Angelique Jessup, Michael Robbins, Irfan Nooruddin, Sarah Croco, Grace Cho, Tom Flores, Dan Corstange, Karen Long Jusko, Papia Debroy, Pam McCann, Adam Levine, Yanna Krupnikov, Eric Groenendyk, Antoine Banks, and Kenyatha Loftis. These colleagues read chapters, helped me prepare for prelims, provided stimulating intellectual conversation, gave essential advice for navigating graduate school and, most importantly, are great friends.

A special debt of gratitude is due to Michelle Allendoerfer, Andrea Benjamin, Laura Schram, and Kate Gallagher Robbins. Michelle, Andrea, and Laura were with me from the beginning through classes, learning statistics, and taking prelims, and were essential in helping me put together a prospectus. I was never afraid to show them a dumb idea. Their unconditional support propelled me forward. In Kate, I found someone who closely shared my interests and worldview. Her advice and suggestions were invaluable in shaping my research. In addition, these four friends were key to surviving

graduate school – commiserating about any disappointments and celebrating all accomplishments.

Joel Simmons has been more important to this endeavor than I can adequately express and I look forward to sharing our successes in all aspects of life in the years ahead.

Finally, I would never have started graduate school, let alone finished, without my family – Paul, Susan, Josh, Licha, Liz, and Brent. My siblings have put up with my complaining and griping, encouraged me in all my pursuits, and always made the time off from work more fun.

My parents, while at times providing essential financial support, always provided incomparable emotional and intellectual support. They read papers, commented on countless fellowship applications, took many late night phone calls, and willingly listened to every idea, complaint, and excited accomplishment. To them, I owe the greatest debt.

Table of Contents

Dedication.....	ii
Acknowledgments.....	iii
List of Tables	vii
List of Figures.....	viii
Chapter 1 Introduction.....	1
Chapter 2 The Puzzle of the Gender Gap in Congress.....	12
Chapter 3 Theory: Politically Exploitable Heterogeneity and Legislator Divergence...42	
Chapter 4 The Gender Gap in Attitudes Among Elites	70
Chapter 5 Measuring Politically Exploitable Heterogeneity	99
Chapter 6 Empirical Results: Politically Exploitable Heterogeneity and Legislator Divergence	122
Chapter 7 Conclusion	143
Bibliography	153

List of Tables

Table 2.1 Gender Differences in the 103rd Congress (1993-1994) on AAUW votes	34
Table 2.2 Gender Differences in the 106th Congress (1999-2000) on AAUW votes	35
Table 2.3 Gender Differences in the 103rd through 106th Congress (1993-2000) on Education Bills	36
Table 2.4 Gender Differences and Biased Voters.....	37
Table 2.5 Primaries – Effect of Legislator Sex on Party and Primary Voter Attitudes	38
Table 2.6 Female Candidates and Female Voters’ Information: Contact, Participation, and Name Recall.....	40
Table 2.7 Female Candidates and Female Voters’ Information: “Don’t Know” to Placement of Candidates on Issues.....	41
Table 3.1 Four Types of Districts.....	57
Table 3.2 District D (RDOD): Multiple Issues, Position Disagreement, Priority Disagreement District	61
Table 3.3 Cycling of Candidate Position in PEH District	62
Table 4.1 NES Gender Differences, Democrats I.....	84
Table 4.2 NES Gender Differences, Democrats II.....	85
Table 4.3 NES Gender Differences, Republicans I.....	86
Table 4.4 NES Gender Differences, Republicans II	87
Table 4.5 CDS Gender Differences I	88
Table 4.6 CDS Gender Differences II	89
Table 5.1 Predictive Validity of Survey Measure.....	108
Table 5.2 Calculating the Bias Measure	113
Table 5.3 Predictive Validity of Contributions Measure.....	115
Table 6.1 Effect of Politically Exploitable Heterogeneity with Survey Data.....	129
Table 6.2 Predicted Values for Issue Importance Model for Survey Data.....	130
Table 6.3 Predicted Values for Issue Bias Model for Survey Data	131
Table 6.4 Effect of Politically Exploitable Heterogeneity with Contributions Data	134
Table 6.5 Predicted Values for Issue Importance Model for Contributions Data.....	135
Table 6.6 Predicted Values for Issue Bias Model for Contributions Data	136

List of Figures

Figure 3.1 Politically Exploitable versus Politically Non-Exploitable Heterogeneity.....	48
Figure 4.1 Government Services.....	90
Figure 4.2 Spending on Child Care.....	90
Figure 4.3 Spending on College Aid.....	91
Figure 4.4 Spending on Public Schools.....	91
Figure 4.5 Spending on Social Security	92
Figure 4.6 Spending on the Poor.....	92
Figure 4.7 Spending on Welfare	93
Figure 4.8 Spending on the Homeless.....	93
Figure 4.9 Abortion	94
Figure 4.10 School Prayer	94
Figure 4.11 Defense Spending.....	95
Figure 4.12 Government Health Care	95
Figure 4.13 Spending on Blacks	96
Figure 4.14 Government Aid to Blacks.....	96
Figure 4.15 Equal Gender Roles	97
Figure 4.16 Spending on the Environment.....	97
Figure 4.17 Spending on Crime	98
Figure 6.1 Expectations Graph.....	128
Figure 6.2 Marginal Effect of Gender as Bias Changes for Survey Data	133
Figure 6.3 Marginal Effect of Gender as Bias Changes for Contributions Data	138

Chapter 1

Introduction

Democratic theory presents accountability as the central solution to the problem of representation (Wood 1969). We expect legislators to vote with the median voter in their district because they need the median voter to win re-election (Downs 1957). Studies of individual decision-making in Congress support this expectation. While other influences, such as the party or personal preferences, may arise, members of Congress are primarily concerned with re-election and therefore with serving their constituency (Mayhew 1974; Fiorina 1974; Kingdon 1989). Given this picture of Congressional decision-making, we expect the variation in voting behavior within Congress to closely follow the different swing voters in each district.

Theoretical and empirical puzzles arise, however, when we study political representation in practice. The absence of politically important social groups, such as women, from political office casts doubt on the representativeness of Congress. Theorists who stress the need for women in office argue that including marginalized groups within Congress will have a substantive impact. Female legislators, they argue, will provide a safe avenue for communication between the representative and the excluded group, and therefore serve as dedicated advocates for the interests of the group (Phillips 1995; Mansbridge 1999).

However, the literature on the representation of women suffers from two important problems. First, the development of a theoretical explanation for why gender

should matter in Congressional decision-making is weak. The argument that “gender matters” contradicts our conventional theories of Congressional decision-making. Why would replacing a male legislator with a female legislator, from the same party and similar constituencies, make a difference? Second, the literature ignores differences among female legislators in their support of women’s interests. Although legislators’ genders affect both voting and non-voting behavior in Congress, there is still considerable variation among women, even within the same party. Why do some female legislators conform to the expectations of a women’s representative while some do not?

This puzzle – under what conditions female legislators represent their public policy preferences, and presumably thereby the preferences of women generally, instead of the interests of the median voter – is the focus of this dissertation. To investigate this puzzle, I first frame the question of female legislators’ voting within the literature on legislative behavior to understand the constraints under which legislators operate. Given this framework, I argue that analyzing when legislators are constrained by the median voter versus when they are free to form electoral coalitions consistent with their policy preferences can explain when female legislators differ from male legislators. On average, I assume that female legislators will want to pursue different policy positions than male legislators. However, female legislators will be constrained from voting differently from similarly situated male legislators when it is necessary to appeal to the swing voter within their district in order to win office.

I develop an argument of how diverse districts with politically exploitable heterogeneity can liberate a legislator from catering to the median voter. These districts include constituents who differ over which issues in the district are priorities and differ

over how these issues should be addressed in Congress. When constituents disagree over priorities and preferences, they form intense preference groups, meaning voters who are willing to trade a policy position they do not prefer on other issues for a policy position they do prefer on the issue they care about. In these districts, legislators can balance the interests of one intense group against the interests of another intense group. This allows legislators to choose which groups within the district will be part of their election coalition and still win the election. However, this electoral coalition will be unstable, meaning that a challenger can also choose and woo groups within the district to be part of a different winning coalition, making the district more competitive.

To test this argument, I present two pieces of evidence. First, I test the assumption that female legislators have different policy preferences than male legislators that they would like to pursue in office using a national survey and a survey of political elites. In both surveys, I find that politically elite women do have different preferences than politically elite men, such being more liberal on social welfare issues and social issues. However, these preferences do not always coincide with the preferences of politically non-elite women. This finding in itself is a significant contribution to the discussion of whether female legislators represent their female constituents. It highlights the importance of keeping in mind the potential attitudinal differences among women and the fact that a female legislator pursues her policy preferences does not mean she is an automatic mouthpiece for all women.

The second component of my research design tests directly whether districts with politically exploitable heterogeneity lead to greater gender differences in Congressional voting. I use data on educational voting, an area where men and women differ in their

opinions, in four Congresses between 1992 and 2000. I measure politically exploitable heterogeneity with two different measures. The first depends on national survey data. The second is a measure developed from individual contributions to political action committees at the district level. I find strongly consistent results across the two measures that suggests that in districts where constituents disagree both on priorities and position there is actually less divergence between men and women in Congress, contrary to my expectations.

My dissertation will be of interest to scholars who are concerned about democratic responsiveness, equality, and the representation of marginalized groups. Are women necessary to represent women? Will any female legislator suffice, or are there specific qualities that are necessary? How does the quality of representation vary both between women and men and among women? What is the role of institutions in influencing the representation of women by women and by men? These are all crucial questions that substantively affect the lives of women. My dissertation also addresses a key problem in the legislative behavior literature. Do legislators' preferences matter or are they merely slaves to their constituency? The debate over whether legislators are delegates or trustees continues. I argue that this separation may be too severe and that legislators' preferences may substantially influence how they act as delegates.

The remainder of the dissertation proceeds as follows. Chapter 2 discusses in greater detail the puzzle of gender differences in Congressional voting. Chapter 3 proposes a theoretical explanation for these gender differences and defines the new concept of politically exploitable heterogeneity. Chapter 4 addresses the first aspect of my research design, whether politically elite women have different policy preferences

than politically elite men and whether these preferences mirror politically non-elite women's preferences. Chapters 5 and 6 comprise the second aspect of my research design. Chapter 5 discusses measuring the concept of politically exploitable heterogeneity and describes in detail the two measures I propose. Chapter 6 presents the results of each of the measures of politically exploitable heterogeneity and discusses the implications of the findings. Finally, Chapter 7 concludes.

Chapter 2, "The Puzzle of the Gender Gap in Congress," is an in-depth discussion of the puzzle leading to the question of the dissertation, under what conditions will female legislators represent their public policy preferences instead of the interests of the median voter? Both formal theory models of candidate behavior and observational studies of legislative behavior argue that candidate policy preferences are insufficient to explain candidate divergence, especially on issues that are important to the constituency. Given this theoretical and empirical legacy in legislative studies, the presence of the gender gap in Congress is puzzling. However, I provide evidence of a gender gap in Congressional voting that persists across Congresses and is present on key issues such as abortion and education.

Many formal theorists argue that candidates' policy preferences alone are insufficient to produce legislator divergence and that other assumptions of the basic two party competition model need to be modified to allow candidates to diverge in policy positions. I present three tests of alternative explanations for the gender gap based on modifying assumptions of the basic competition model. The first explanation argues that voters are biased towards a political party, in part regardless of the actual issue position of the party's candidates, and this bias allows candidates freedom to move away from the

median voter. The second explanation allows for candidates to be chosen through two elections, a primary election and a general election, and argues that if the primary electorate is systematically different for men and women, we would see divergence regardless of legislators' policy preferences. The third explanation relies on findings that when the median voter is more informed about candidates' positions, she is able to pull candidates toward their position. The argument is that female candidates will selectively inform female constituents about their position, therefore giving the female median voter greater influence in districts with a female candidate. I test each of these explanations separately and find that none of them are able to explain the gender gap in Congress. Given that the gender gap in Congress is unexplained by these current theories of Congressional behavior, I argue for an explanation based on politically exploitable heterogeneity, as defined in Chapter 3.

Chapter 3, "Theory: Politically Exploitable Heterogeneity and Legislator Divergence," develops a theory of candidates' electoral strategy that can support their policy preferences in office. First, I provide a review of other arguments regarding district heterogeneity and candidate divergence and explain how my theory differs. Currently, studies of district heterogeneity and legislator divergence do not provide us with an overarching conceptual definition of heterogeneity that connects how heterogeneity should lead to divergence. Where my theory differs from the current literature is in the proposition that not all heterogeneity is *politically exploitable* and therefore not all forms of heterogeneity should lead to candidate divergence. My model both defines conceptually when heterogeneity should matter and has useful implications for the empirical studies on this topic that find inconsistent relationships between

demographic diversity, used as a measure of heterogeneity in the district, and candidate divergence.

I present my theory in two parts. First, I argue that candidates must form election coalitions to win office. If possible, candidates will form a coalition consistent with their policy preferences. Second, I argue that politically exploitable heterogeneity in the district allows candidates to choose which groups in the district to include in their election coalitions and therefore provides electoral support for voting their policy preferences in Congress. I define politically exploitable heterogeneity as when constituents disagree both on which issues are a priority and on their position on these issues. To illustrate how politically exploitable heterogeneity leads to candidate divergence, I first provide a formal representation of the model. Second, I provide a stylized example. I then discuss how the two parts of the theory together explain how legislators in certain districts will vote their policy preferences in office while legislators in other districts will be constrained to vote with the median voter. I apply my theory to the specific question of gender differences in Congress, pointing out that a key component of applying this theory to the puzzle of the gender gap in Congress is the assumption that male and female legislators have different policy preferences.

In Chapter 4, “The Gender Gap in Attitudes Among Elites,” I address the fundamental assumption that men and women have different policy preferences they would like to pursue in office. This chapter discusses reasons for and against the expectation that the gender gap in attitudes found in the mass public will also be present among the political elite. I then test for the presence of the gender gap among elites with two surveys, each with their advantages and disadvantages. The first survey is the

American National Election Surveys from 1992 to 2000. While these surveys allow us to compare elites and non-elites, there is evidence that even the respondents designated as politically elite in the ANES, as defined by political participation, are significantly different in their attitudinal structure from political elites. Second, I use the 1992 convention delegate survey of attendees to the Democratic and Republican conventions. While this survey clearly covers political elites, there are significant differences within the survey between those who aspire to public office and those who do not, suggesting that elites who run for office may be less ideological than most party convention delegates. In addition, it does not allow us to directly compare elite preferences to non-elite policy preferences. By using the two surveys together, I offset the disadvantages of each to get a fuller picture of the gender gap among elites and how this gender gap mirrors (or does not) the gender gap among non-elites. I find that the gender gap persists among political elites, especially on issues of social welfare, where there is a gender gap among non-elites, and emerges on moral issues, such as abortion and school prayer, where there is not.

Chapter 5, “Measuring Politically Exploitable Heterogeneity,” discusses the key components of the concept of politically exploitable heterogeneity and how we might ideally measure them. Given the complexity of the concept, I focus on one issue, education, to simplify measurement. The first important aspect to measure is whether there is disagreement over priorities in the district. The relative importance of education captures whether constituents disagree on their priority over issues. The second important aspect to measure is whether there is an intense preference minority on the issue. If constituents are biased in the preference they have on the issue, meaning they have a

specific preference on the issue, there is an intense preference minority on the issue of education and there is a potential for legislators to exploit this diversity to create an electoral coalition consistent with their policy preferences.

With these guidelines for measurement, I describe the two measures I use. The first is based on American National Election Surveys in the 117 districts where ten or more respondents were interviewed between 1992 and 2000. I use the ANES questions on respondents' most important issue and respondents' position on education policy to measure the relative importance of education in the district and the presence of bias among those who think education is important. While the ANES measure has strong face validity, there are serious concerns with using a national survey as a representative sample of a sub-national unit, such as a Congressional district. In addition, the ANES measure performs poorly in the predictive validity test of the measure's relationship with district competition. The second measure I use is individual contributions in the district to political action committees. To my knowledge, this measure has not been used to capture constituency preferences before. I connect these contributions to the issues the PACs advocate on as a measure of individual priorities across issues. I then get a measure of the percentage of the PACs' money given to Democratic candidates as a measure of the bias in the district on the issue of education. The contributions measure performs much better on the predictive validity test. However, measuring issue importance with monetary donations excludes poorer districts from the measure. Analyzing the effect of politically exploitable heterogeneity, imperfectly measured, with both measures allows us to have greater confidence in our results than if we used only one measure.

Chapter 6, “Empirical Test: Politically Exploitable Heterogeneity and Legislator Divergence,” presents the results from both measures of politically exploitable heterogeneity. I use the educational voting data described in Chapter 2 to test whether politically exploitable heterogeneity modifies the gender gap we found. For each measure, I start with two simple models and then estimate the full three-term interaction model. The simpler models include first the measure of the relative importance of education and second the measure of bias in the district on the issue of education. Consistent with expectations, I find that as the importance of education increases in the district, the gender gap diminishes. However, contrary to expectations, the substantive decrease of the gender gap due to issue importance is large. In addition, the effect of increasing bias in the district on the gender gap, which I expected to be positive and significant, is significantly negative. These results are impressively consistent across both measures and through an array of robustness checks.

Finally, chapter 7, “Conclusion,” reviews the dissertation, discusses in greater detail the implications of the empirical results for the theory, suggests the empirical and theoretical contributions of the dissertation to political science, and proposes further empirical investigations. Empirically, the chapter on the gender gap in elite attitudes provides evidence that elite women do not necessarily mirror non-elite women in their policy preferences. This evidence has important implications for the study of descriptive representation and brings into serious doubt the claim that if female legislators pursue their preferences they serve the interests of women generally. In addition, the use of individual contributions to political action committees as a measure of district attitudes

opens the door for other measurement possibilities in the continuing search for better measures of constituent preferences.

Theoretically, the dissertation draws together two literatures – studies on descriptive representation and formal models of candidate competition – that have important implications for each other but have traditionally been pursued independently of each other. The dissertation also tries to develop the connection between the promises made by candidates during electoral competition with the subsequent behavior of these candidates once elected. While intuitively these two components of a legislators' behavior should be connected, it is not entirely clear how one affects the other. Finally, while my measurement of politically exploitable heterogeneity may not yet capture the concept, this dissertation importantly distinguishes between politically exploitable and politically non-exploitable heterogeneity and pushes political science to more concretely define the concept of heterogeneity in the district and how this abstract concept should lead to legislator divergence.

Chapter 2

The Puzzle of the Gender Gap in Congress

There is strong empirical evidence that male and female legislators from similar districts and the same party vote differently on a wide range of issues, on important and obscure legislation, and across multiple Congresses. Descriptive representation scholars argue that women's different policy preferences explain this systematic divergence based on gender. However, this empirical evidence and theoretical explanation provides a serious puzzle. Recent theoretical proofs argue that policy preferences are not sufficient to provide candidate divergence and classical studies of legislative behavior find that legislators prioritize the wishes of their constituency above their own policy preferences. Other plausible explanations for candidate divergence – such as partisan biased voters, systematically different primaries, and voter information levels – also do not explain these consistent gender differences in Congressional voting. This contradiction between theoretical explanations and empirical evidence leads to the question of this dissertation, under what conditions will legislators pursue their preferences in representing their constituency?

In this chapter, I present the empirical evidence for the puzzle of the dissertation. First, I describe in greater detail the empirical and theoretical puzzle of gender differences in Congress. Second, I provide evidence that gender differences in legislative voting persist in more recent Congresses. Third, I present the tests of three explanations for candidate divergence based on gender – partisan biased voters, systematically

different primaries, and differential voter information levels. Finally, I conclude with a preview of my explanation for Congressional gender differences – politically exploitable heterogeneity.

2.1 The Empirical and Theoretical Puzzle of Gender Differences in Congress

There is building evidence that aspects of a legislator's identity matter for her legislative behavior (Dodson 2001; Kathlene 1998; Saint-Germain 1989; Swers 1998; Swers 2002; Tamerius 1995). Finding convincing evidence for this is hard because it is difficult to parse out the effect of legislators' preferences from the effect of constituency. For example, Hall argues that African-American legislators should behave in a distinctive fashion from white legislators because African-American legislators tend to have large African-American constituencies and a social identification with their group (Hall, Unpublished Manuscript). However, African-American legislators are rarely elected in districts without a plurality of African-American voters and even more rarely elected in districts without a majority-minority population (Cameron, Epstein, O'Halloran 1996; Lublin 1999). Given this co-variation between large minority constituencies and the election of African-American legislators, the preferences of the legislator are likely to converge with a majority of the district and therefore we cannot distinguish between the effect of a large minority constituency and the effect of a social identification with the group.

However, unlike racial and ethnic minority groups, or even any other interest group, women are not segregated geographically. It is highly unlikely for a district to have a large majority of women relative to the number of men. Yet, when women are

elected, they tend to behave differently than men (Carey, Niemi, and Powell 1998; Carroll 2001; Clark 1998; Dodson 2001; Kathlene 1998; Little, Dunn, and Deen 2001; Reingold 1992; Saint-Germain 1989; Swers 1998; Swers 2002; Tamerius 1995; Thomas and Welch 1991; Welch 1985). For example, Tamerius (1995) found in her matched sample of male and female legislators from the 101st Congress that female legislators were responsible for sponsoring 92% of the feminist bills. Welch (1985) found that, controlling for district characteristics, female legislators were more liberal than men on their roll call votes from 1972 to 1980. The differences were most pronounced for Republican legislators. Swers (2002) found significant differences between men and women in the 103rd (1993-1994) and 104th (1995-1996) Congresses on feminist and social welfare issues, controlling for legislator ideology, legislator party, and constituency characteristics. While the differences among Republicans were much smaller in the 104th Congress, Swers found that the biggest and most consistent gender differences in both the 103rd and 104th Congresses were on reproductive rights votes (Swers 2002, p. 121).

Scholars of descriptive representation argue that legislators substantively represent a subset of their constituency based on their preferences and potentially contrary to the wishes of the median voter in their district (Tamerius 1995, Dodson 2001, Mansbridge 1999). Most scholars who investigate the impact of descriptive representation assume that this substantive representation is driven by a legislator's social identification with her group (Tamerius 1995, Dodson 2001). The argument is that when a legislator identifies with a group, either because of shared experiences or because of a linked fate between group members, the legislator will also share the group's preferences.

Descriptive representation scholars expect that a legislator will follow her preferences, and therefore her group's preferences, in her voting and non-voting behavior.

For the most part, scholars who study female legislators argue that women will behave differently without theorizing as to under what conditions this will occur or why. One scholar, Karin Tamerius, did develop theoretical expectations as to when gender differences in the legislature emerge. Tamerius argues that because female legislators possess differential experience and resources with respect to women's issues, we should only see gender differences in behavior areas that require high levels of attitudinal support and resources. She concludes, therefore, that activities that require more support and expertise, such as sponsoring a bill or making a speech, will exhibit greater sex differences than those activities that require relatively less support and expertise, such as roll call voting (Tamerius, 1995). However, this theory does not explain the differences we find between female and male legislators in roll call votes.

The argument that female legislators follow their different policy preferences leads to both a theoretical and empirical puzzle when assessed in the context of the legislative behavior literature. This argument violates a fundamental assumption of the median voter theory that candidates are solely motivated by gaining office. However, the median voter theory is most likely wrong, as illustrated by a quote from Ansolabehere describing political economists' view of the median voter theorem:

“The strong empirical prediction [of the median voter theory] is almost surely wrong and, as a result, one of the basic assumptions is incorrect. The challenge is to find the factor or factors that explain divergence” (Ansolabehere 2006).

The question is, is modifying the assumption that legislators are motivated by policy preferences sufficient to induce candidate divergence? The way to incorporate

preferences into candidates' decisions is to change their utility function. Instead of just gaining utility from winning office, there is now a tradeoff between winning office and how far the candidate must move from their ideal preference in order to win office. Most scholars argue that other assumptions need to be changed in order for divergence to occur. For example, Calvert (1985) argued that as long as candidates prefer the median voter's position to the position of their opponent, they will move towards the median voter because they value winning certainly at the median voter's position more than gaining their ideal policy with $\frac{1}{2}$ probability. Similarly, others argue that while candidates' preferences might create divergence in the short-term, the median is the limit in a sequence of elections where a moderate can enter the race and win (Ansolabehere 2006).

In addition to theoretical results that argue that candidate preferences are not sufficient to induce candidate divergence, there is strong empirical evidence that candidates' preferences are not influential on their voting behavior. Peltzman (1984) argues that when constituency interest is correctly specified, with both supporting and opposing interests included in the model, the roles of party and ideology in explaining roll-call votes fade, meaning that divergence diminishes. In classic studies of legislative behavior, the evidence that legislators listen to their constituency first and foremost in their voting decisions is overwhelming (Achen 1978; Fiorina 1974; Jackson 1974; Kingdon 1989; Miller and Stokes 1963). Furthermore, the distinction between preferences and re-election is only relevant if the legislator's preferences are contrary to that of the constituency, which tends to be rare given the selection process of legislators

(Kingdon 1989). Even when legislators' preferences do come into play, it is in situations where the constituency does not care about the issue (Kingdon 1989).

Since simply changing the assumption that legislators value their policy preferences in addition to winning office does not satisfactorily explain the divergence between men and women, we need to turn to other aspects of models of legislative behavior. Many political economists have studied the effects of changing some of the basic assumptions of the Downsian model to explain divergence within a district. However, there are some limitations of the current research. First, a considerable amount of the work attempts to explain divergence between parties within similar districts and not divergence within parties. Many of the theoretical results that explain divergence between parties may be helpful in explaining divergence within parties as well. Second, there is a tendency within the literature for a disjuncture of theory and data (Wittman 1983). There is a considerable amount of theoretical work that remains to be tested, as well as a considerable amount of empirical work that is divorced from theoretical explanations.

To find an answer to the question of when candidates diverge based on gender, I turned to assumptions of the median voter theorem that, when changed, might lead to systematic variation by gender in Congress. In this chapter, I present and analyze three modifications to the model. The first is partisan biased voters. The expectation is that members of Congress from districts where voters are biased towards the legislator's party have the freedom to pursue their policy preferences in office. To test this argument, I analyze whether the gender difference in Congress increases in districts where there are larger numbers of voters that support the legislator's party, as measured by Presidential

vote. The second modification is the possibility of systematically different primary voters. If female legislators have a more liberal median voter in the primary than male legislators, with the median voter in the general election held constant, then female legislators will be more liberal than male legislators, regardless of the legislators' personal preferences. To test this argument, I compare data on the attitude of the mean primary voter in legislators' districts from the National Annenberg Election Study by sex of the legislators. The third modification I test is differential voter information levels. The argument is when voters have more information, they are more sensitive to candidates' positions and therefore candidates are pulled towards the median voter. Applying this to female candidates, if female candidates raise information levels among female voters, as others have argued they do, then districts where there is a female candidate will have more informed female voters and the median female voter will have more influence over legislators' votes. Given the gender difference in policy preferences, this should lead these legislators to be more liberal in their voting. I test the intermediate link in the theory, that female legislators increase female voters' information levels, with the American National Election Study's measures of political information and data on the candidates' genders in the district between 1992 and 2000. As will be evident by the end of the chapter, these three plausible explanations also do not explain the gender gap in Congress. This leaves us with the question of the dissertation: under what conditions and why do male and female legislators differ in their Congressional behavior?

2.2 Persistent Gender Gap in Congressional Voting

Before answering under what conditions female and male legislators diverge in their Congressional behavior, it is important to establish that the divergence continues to persist past the early 1990's. Both Swers (2002) and Poole and Ziegler (1985) argue that Republican control of Congress will eliminate the gender gap in Congressional voting. In part, this is because when Republicans are in the majority, the bills that reach the floor may not address women's issues and therefore the issue areas where gender differences would arise are not part of the roll call. To confirm the presence of a gender gap in Congress across more recent Congresses, I investigated whether female representatives vote differently than male representatives from similar constituencies and the same party in more recent Congresses. I completed three analyses. First, I analyzed the gender difference in the 103rd Congress on bills identified by the American Association of University Women (AAUW) as critical to women's interests. Second, I analyzed the gender differences in the 106th Congress on AAUW votes. Finally, since men and women in the mass public disagree on spending on public education (Kaufmann and Petrocik 1999; Shapiro and Mahajan 1986), I analyze gender differences on education bills in the 103rd, 104th, 105th, and 106th Congresses. Using these four Congresses increases the number of women available for analysis and varies the partisan control of Congress.

I first created a measure of district attitude by following Jackson (1990). I estimated the relationship between demographics and individual opinion using American

National Election Study data from the year of election to Congress.¹ The demographics included everything in the ANES that is available from the Census by Congressional district – age, marital status, education, employment status, income, gender, and race. Then, using Census data and the coefficients from the individual regressions, I created a predicted average opinion for each Congressional district.

For the roll call votes, I used the Poole and Rosenthal data sets available on their VoteView website.² To identify the AAUW bills in the 103rd and 106th Congresses, I used the American Association of University Women’s legislative voting record (American Association of University Women, Voting Record). To code these bills, I used the AAUW’s recommendations. For the bills, a 0 is a vote against AAUW’s position and a 1 is a vote for AAUW’s position. The bills cover education, abortion, family leave, and health care. The AAUW supports greater access to education for women, greater access to abortion for women, federal support for family leave, and greater federal support for women and children’s health care. The votes included in the AAUW legislative record include both votes on amendments and votes on final bills.

The education bills for all four Congresses were more difficult to code and identify. To identify education bills, I used the Policy Agendas Project’s coding of bill topics³. The Policy Agendas Project only codes final bills. Therefore, the education bill scales only include votes on final bills and not amendments. To code the education bills, I used the National Education Association, which provides a legislative voting record for the 105th and 106th Congresses (National Education Association, Congressional Report

¹ For 103rd Congress (1993-1994), I used the 1992 ANES; for 104th Congress (1995-1996), the 1994 ANES; for the 105th Congress (1997-1998), the 1996 ANES; and for the 106th Congress (1999-2000), the 1998 ANES.

² www.voteview.com

³ www.policyagendas.org

Card). For earlier Congresses, I used the legislative voting records from the AAUW and the Americans for Democratic Action (Americans for Democratic Action, Voting Record). In the 105th and 106th Congresses the rating of bills by the NEA matched the ratings of both the AAUW and the ADA. For bills rated by the NEA, AAUW, or ADA, I coded a 0 as a vote against the interest groups' position and 1 as a vote for the interest groups' position. All three groups support greater federal spending on public education. In the dataset, I have two sets of education bills – one that includes just those bills rated by the NEA, AAUW, or ADA and one that covers all bills designated as an education bill by the Policy Agendas Project.

To code bills not rated by the advocacy groups, I first created a list of legislators with a 90% or higher rating by the NEA for both the 105th and 106th Congresses that were in office across the 103rd to 106th Congresses. I also created a list of legislators with a 15% or lower rating by the NEA for both the 105th and 106th Congresses that were in office across the 103rd to 106th Congresses. This gave me a list of 25 legislators who tend to vote with the NEA by voting for more public spending for education and a list of 4 legislators who tend to vote against the NEA. Using this list of legislators, I then looked at how they voted on the other education bills that were not rated by the NEA/AAUW/ADA in each of the Congresses. I then coded only those bills where at least 80% of the high NEA rated legislators voted against 80% of the low NEA rated legislators. A 1 represents a vote with the high NEA rated legislators and a 0 represents a vote with the low NEA rated legislators. Both of the roll call vote variables are a composite scale of voting across all legislation included in the scale. For the NEA/AAUW/ADA-rated votes only scale, the number of votes in the scale for each

Congress were: 4 (103rd), 1 (104th), 4 (105th), and 5 (106th). For the second scale, the numbers were: 15 (103rd), 7 (104th), 10 (105th), and 9 (106th).

To gather data on the legislators' gender, seniority, and party, I used the biographical data provided by Congressional Quarterly.⁴ I also created dummy variables for each Congress. In the pooled estimations with the education vote scales as the dependent variable, I included these dummy variables with the 103rd Congress as the excluded group. For the individual votes in the AAUW scale, the composite AAUW scale, and the two education composites scales, I estimated the following model:

$$\begin{aligned} \text{Vote} = & \beta_0 + \beta_1 \text{Female} + \beta_2 \text{Party} + \beta_3 \text{DistrictOpinion} \\ & + \beta_4 \text{Seniority} + \beta_{5-7} \text{Congresses} + \varepsilon \end{aligned}$$

I found significant gender differences on multiple votes. The results of the analyses are in tables 2.1-2.3. On all AAUW votes in the 103rd Congress, including votes on family leave, abortion, and education, a significant gender difference arises. The difference is much larger for Republicans, with an effect of gender between .310 and .589, than for Democrats, with an effect of gender between .085 and .352. In the 106th Congress, there were also significant gender differences on AAUW votes related to education and abortion. However, there were no gender differences on health care bills and the magnitude of the effect was smaller for both Republicans and Democrats (between 0 and .334 and between 0 and .325, respectively).

On the education bills, the effects are similar across the two scales – the bills rated by interest groups and all education bills. The gender effect was significant in both the 103rd and 106th Congresses as well as in the pooled analysis. While the magnitude of the gender effect was similar in the 104th and 105th Congresses as in the 106th Congress, the

⁴ library.cqpress.com/Congress

effects are statistically insignificant at the .1 level. Overall, gender differences emerge as substantively and statistically significant on a range of issues and across different Congresses. These systematic gender differences contradict traditional explanations of Congressional voting behavior and leave us with the question of the dissertation, under what conditions will legislators converge in their legislative behavior and under what conditions will legislators pursue their preferences in representing their constituency?

2.3 District Conditions of Converge and Divergence

Given this strong evidence of gender differences in Congress on roll-call votes and the inadequacy of the candidates' preferences explanation, I turned to other assumptions in the median voter theory. In this section, I test the effect of changing three important assumptions. First, that voters vote for candidates solely on the basis of policy. Second, that candidates are chosen in one round of elections. And finally, that all voters have perfect information. I find in my analysis that none of these plausible changes are a satisfactory explanation for the gender gap in Congress.

2.3.1 Partisan Biased Voters

One condition that may explain divergence among candidates is the presence of biased voters. This condition modifies the assumption that voters choose candidates solely on the grounds of their policy position. As is commonly found in attitude studies, voters use multiple other characteristics besides policy to make their voting decisions. These characteristics may be correlated with policy but also have a separate component. One common example is party identification. While party identification is correlated with

policy, there is also an enduring attachment to political parties that persists despite policy platform changes in any given election cycle (Campbell et al 1960). For example, in the cumulative NES dataset, the correlation between party identification and policy position ranges from .04 for attitudes about abortion to .30 for attitudes about spending on the poor. There is a considerable amount of overlap between Democrats and Republicans on policy position in the NES. In addition, party identification is a strong determinant in vote choice.

Changing the assumption that voters vote solely on the basis of policy positions can create divergence between candidates. Theorists represent the inclusion of a non-policy bias among voters by including a “bias term” in voters’ utility functions in addition to a measure of policy distance between the voters and candidates. With biased voters, the candidate who has the advantage has leeway to place herself farther away from the median voter on policy than her opponent without jeopardizing her chance of winning. The candidate who is disadvantaged in terms of the bias will instead move towards the median voter in an attempt to woo voters who are biased towards the other candidate (Chappell and Keech 1986; Adams 2001; Wittman 1983). This argument provides an explanation for the pattern other scholars find that candidates in competitive elections move towards each other while candidates in non-competitive elections do not. For example, Ansolabehere, Snyder, and Stewart (2001) find less divergence between House candidates in competitive districts, as measured by the Republican Party vote from the last Presidential election.

To translate this argument to male and female legislators, we must assume that male and female legislators have different policy preferences they want to pursue in

Congress. They will only be able to pursue these policy preferences when they are advantaged by partisan bias. Therefore, we expect that female legislators who are disadvantaged by bias will be less likely to diverge from similarly situated male legislators than female legislators who are advantaged by bias in their districts.

To test this hypothesis, I used the roll call datasets described above – the AAUW bills in the 103rd and 106th Congresses and all education bills in the 103rd through 106th Congresses. To measure bias, I used the Presidential vote in the district from the most recent prior Presidential election. If the legislator is Republican, the bias measure was calculated as the vote for the Republican Presidential candidate minus the vote for the Democratic Presidential candidate. For Democrats, the subtraction was reversed. The measure runs from around -40 to 90. Negative numbers indicate the legislator was disadvantaged by the partisan make-up of the district, as measured by the Presidential vote, while positive numbers indicate the legislator was advantaged by the partisan make-up. We should see a positive interaction between partisan advantage in the district and the effect of being female on voting because partisan bias should allow for greater divergence based on candidate preference. As before, I control for district attitude, legislator’s party, and legislator’s seniority. The model I estimated was:

$$Vote = \beta_0 + \beta_1 Female + \beta_2 Female * Advantage + \beta_3 Party + \beta_4 DistrictOpinion + \beta_5 Seniority + \beta_{6-8} Congresses + \varepsilon$$

The results from the analysis are in Table 2.4. The effect of partisan bias is not significant in any of the models and only in the correct direction in one of the models, for education bills between the 103rd and 106th Congresses. At the bottom of the table are the effects of being female on the predicted level of support for the AAUW score and the education bills score for minus one standard deviation of the bias scale, the mean of the

bias scale, and plus one standard deviation of the bias scale. All dependent variables are scaled from 0 to 1. An increase in bias causes the gender gap in voting on the AAUW scale to decrease by almost .05 points in the 103rd Congress and by almost .09 points in the 106th Congress. In the 103rd through 106th Congresses, an increase in bias causes the gender gap in voting on education bills to increase by only .008 points. It appears that partisan voters do not explain when male and female legislators will diverge from each other.

2.3.2 Systematically Different Primaries

The second condition I analyze changes the assumption that candidates must win only one election. Instead, candidates must first win their party primaries and then run in the general election. Scholars argue that the presence of party primaries can induce divergence in candidate positioning. To win, candidates must balance the median voter of the party and the median voter of the general election. Candidates from the right party will seek the position where the left-most voter in the right party is indifferent between the candidate's position and the opponent's position (Grofman 2004; Coleman 1971). The evidence for this argument is spotty. In assessing the influence of the party median on legislators' roll call votes, Clinton (2006) found that Republican legislators from the 106th Congress were responsive to their party median but Democratic legislators were responsive to the opposite party median. This is probably due to which party has a majority in the legislature and whom they need to appeal to in order to win the next election than due to anything enduring about the two parties. Gerber and Lewis (2004)

found that the party median attitude had no significant effect on legislator voting once legislator party and the district median attitude were included in the model.

Despite this somewhat unsupportive evidence, the primaries argument has potential for explaining divergence between male and female legislators in an interesting way. There is evidence that voters view female candidates as supportive of more liberal policies than male candidates, holding campaign promises and appeals constant (Huddy and Terkildsen 1993; Sanbonmatsu 2002). If voters view women as more liberal than men regardless of their actual policy position, we might expect women to have more success among more liberal voters in their party. Therefore, winning female legislators might be nominated by systematically different primary electorates than male legislators from the same party. If so, then different party medians may explain divergence between men and women in Congress. What is interesting about this explanation is that it does not require male and female legislators to have different preferences to create a systematic gender gap in Congressional voting.

To test this hypothesis, I used the 2000 and 2004 National Annenberg Election Studies. The NAES is helpful because the study has a large number of respondents, above 40,000, and covers most Congressional districts. This large number of respondents allows for analysis of sub-groups within the district that is not possible with other surveys (Clinton 2006). To test whether female and male legislators have systematically different primary (or party) voters, I recoded the 2000 NAES on six different issue areas: liberal/conservative ideological placement; support for federal spending on social security; support for federal spending on schools; support for government health care for uninsured children; opposition to banning abortion; and opposition to government

spending on defense. In the 2004 NAES, I recoded six similar issue areas. The only difference in question wording was on social security. Instead of federal spending, the question asked whether the respondent favored allowing workers to invest part of their social security. I coded this such that higher values represented opposition to this proposal. I coded each of these issue areas such that higher values represented the direction of the gender gap in voting in Congress – with women more liberal than men on these areas.

I then summarized by Congressional district the mean position on each of these issues for the entire district, for party identifiers (as measured by the party identification question), and for party primary voters (as measured by whether the respondent voted in the party primary and identified with the party). I then merged this information with party and sex data on the legislators elected from each Congressional district in the year the survey was taken (the 107th Congress for 2000 and the 109th Congress for 2004). I estimated the following model by legislator party using OLS:

$$Party/PrimaryPosition = \beta_0 + \beta_1 Female + \beta_2 DistrictPosition + \varepsilon$$

On these issues, if women have systematically different primary voters that explain their systematically different voting in Congress, we should find a significant and positive coefficient on the female variable. The results from the analysis are in table 2.5. The farthest left column lists the issue area. The cells report the coefficient on female, with standard errors in parentheses, by party, first for party identifiers and second for party primary voters as the dependent variable. Rarely is the coefficient on female significant. Out of 24 circumstances in 2000, the coefficient on female was significant at the .1 significance level or lower 3 times. Of these 3 times, all of them were in the

opposite direction than predicted. Out of 24 circumstances in 2004, the coefficient on female was significant 5 times. Again, all of these coefficients were opposite the predicted direction. In addition, none of the effects were substantively significant, ranging from .01 to .06 points on a 0 to 1 scale. On the whole, the evidence does not support the argument that male and female legislators have systematically different primary or party supporters.

2.3.3 Voter Information and Turnout

The final condition I analyze modifies the assumption of the median voter theory of perfect information. If there is not perfect information, the less information voters have about the candidates, the less tied the candidates are to the median voter (Wittman 1983). There is some evidence that statewide female candidates increase the efficacy and political knowledge of their female constituents (Burns, Schlozman, and Verba 2001). One explanation for this is that female candidates may target female voters in order to garner support in the district. If female candidates increase the knowledge of women in the district relative to women in districts with no female candidate, the women with a female candidate may be more sensitive to the policies presented by the candidates. This may pull candidates closer to the female median voter than in other districts, which would mean that the female median voter would hold more weight in explaining roll call votes among female legislators than among male legislators who faced male opponents. However, and this would be an interesting result, it would also mean that there should not be a difference between female legislators and male legislators who defeated a female opponent.

Another result of the evidence that women's interest and efficacy increases when they have a female candidate is the gender participation gap can decrease in areas with a female candidate. Burns et al (2001) find that the increase in efficacy and interest could help to narrow the participation gap. They find that with one statewide female candidate, the number of political acts in which women participate increases by almost one – closing the gender participation gap by half. This could be interpreted as decreasing the “costs” of voting for women by increasing their efficacy and political knowledge. If female candidates affect who turns out, this could mean they have a different median voter than male candidates who face male opponents. Again, with this change, we would expect the female median voter to have greater influence over female legislators' roll call voting, as well as over male legislators' voting who faced a female opponent.

To assess this explanation, I tested the intervening mechanism – the effect of female candidates on the information of female voters. To test the two hypotheses – that female candidates increase women's political information and participation – I used the American National Election Studies from 1992 through 2004. The ANES includes questions on whether the respondent was contacted by each party's House candidate; the respondent's level of political participation; whether the respondent voted in the general election; whether the respondent recalls the names of her House candidates correctly; and whether the respondent can place each party's House candidate on three issue areas: liberal/conservative ideology, government spending on services, and government guaranteed jobs. The level of contact gets directly at the mechanism proposed above – that female candidates will target female voters directly. The participation and voting variables capture whether female candidates increase female voters' political

participation. Finally, the recall variables and the issue placement variables capture whether female candidates increase female voters' level of knowledge.

All variables are coded 0 to 1 except participation, which runs from 0 to 5 and is a summary of the number of political acts from the following list: contribute money, display a campaign button or sticker, work for a party or candidate, attend political meetings or rallies, and try to influence others. For the contact, participation, voting, and recall variables, higher values indicate greater contact, participation, and information, respectively. For the issue placement variables, the coding is 0 represents respondents who placed their House candidate on the seven-point scale and 1 represents respondents who said "Don't Know" to the question. I merged the respondent data with information on both parties' House candidates' sex in the Congressional district for the year of the survey (Almanac of American Politics). For each dependent variable, I estimated the following model, pooled across all available years between 1992 and 2004:

$$DV = \beta_0 + \beta_1 FemaleRespondent + \beta_2 FemaleCandidate + \beta_3 FemaleRespondent * FemaleCandidate + \beta_x Controls + \varepsilon$$

The controls are age, education, employment, income, home ownership, religious attendance, partisanship, and competitiveness of the Congressional race. Competitiveness of the Congressional race is measured as the absolute value of the Presidential vote margin from the most recent prior Presidential election. I estimated the model with logit for the contact, vote, recall, and issue placement dependent variables and with OLS for the participation dependent variable. I expect the effect of female candidates on female respondents ($\beta_2 + \beta_3$) to be positive for the contact, participation, vote, and recall dependent variables and negative for the issue placement variables.

The results of the analysis are in table 2.6 and table 2.7. The effect of female candidates on female respondents ($\beta_2 + \beta_3$) is reported in the middle row. Below the effect is the standard error of the combined coefficients in parentheses. This standard error was calculated with the formula (Aiken and West 1991):

$$\hat{\sigma}_{\frac{\partial DV}{\partial FC}}^2 = \text{var}(\hat{\beta}_2) + FR^2 \text{var}(\hat{\beta}_3) + 2FR \text{cov}(\hat{\beta}_2, \hat{\beta}_3)$$

There is relatively weak support for the hypotheses. The effect of female candidates on female respondents is almost always in the correct direction, except for Republican female candidates' effect on contacting female respondents and all female candidates' effect on female respondents' voting. However, the effect is rarely statistically or substantively significant. The effect of female candidates on women's contact, recall, and issue placement is between 0 and 4%. Female candidates increase the number of women's political acts by between .03 and .05 on a 0 to 5 scale. The difference between female candidates' effect on male respondents versus female respondents is never significant; the effect of female candidates on male respondents is never significant; and the effect of female candidates on female respondents is significant at the .05 level in only two instances – women recalling a Democratic female candidate's name and women being less likely to say "Don't Know" to placing a Democratic female candidate on the liberal/conservative ideology scale. Overall, there is little support for the argument that female candidates increase women's political knowledge or participation and therefore that empowered female voters explain the gender gap in Congressional voting.

2.4 Moving Forward: Politically Exploitable Heterogeneity

In this chapter, I presented a theoretical and empirical puzzle. While studies on Congressional behavior find that the constituency and the median voter have a strong hold on legislators' voting decisions, descriptive representation scholars argue, and find empirical evidence, that female legislators are systematically more liberal than male legislators from the same party and similar districts on a subset of issues, such as abortion, education, and family leave. Three plausible explanations for this consistent empirical finding – partisan biased voters, systematically different primary voters, and differential voter information levels – do not explain the divergence we find between men and women in Congress. In the next chapter, I argue that the presence of politically exploitable heterogeneity in the district can explain this divergence. When a candidate is faced with a politically exploitable heterogeneous district, she can choose which groups in the district will be part of her electoral coalition. By choosing groups with whom she agrees, a candidate develops electoral support for voting her preferences in office.

Table 2.1 Gender Differences in the 103rd Congress (1993-1994) on AAUW votes

Issue Area	Family Leave	Abortion			Education		AAUW Scale
Bill	HR1	HR670	HR2518 Hyde Am.	HR796	HR6 Unsoeld Am.	HR6	
Female	1.607** (.551)	2.818** (.774)	2.110** (.498)	2.352** (.604)	1.713** (.537)	2.329** (.691)	.213** (.041)
Republican	-3.321** (.298)	-2.901** (.275)	-2.855** (.344)	-2.781** (.276)	-2.231** (.250)	-5.157** (.545)	-.528** (.027)
District "Liberalness"	25.682** (5.299)	11.799** (4.605)	43.896** (5.618)	21.069** (4.682)	19.472** (4.289)	9.137 (6.547)	2.478** (.400)
Seniority	.007 (.020)	.008 (.019)	-.007 (.019)	-.019 (.018)	-.014 (.017)	-.015 (.026)	-.002 (.002)
Constant	-10.102** (2.464)	-3.705 (2.188)	-20.519** (2.671)	-8.400** (2.197)	-7.745** (2.022)	-.243 (3.135)	-.386* (.194)
R2	.423	.356	.438	.357	.273	.573	.600
N	428	422	427	415	423	417	378
ME of Sex: Republicans	.368	.589	.310	.527	.404	.524	--
ME of Sex: Democrats	.085	.118	.352	.164	.154	.016	--

Note: ^ p < .1 * p < .05 ** p < .01; For the individual bills, the table includes the logit coefficient and standard error in parentheses, with the marginal effect of sex calculated by party with other variables set at their mean in the bottom two rows; For the AAUW scale, the table includes OLS coefficients and standard error in parentheses. The alpha scale reliability coefficient for combining the six items into one scale is .91.

Table 2.2 Gender Differences in the 106th Congress (1999-2000) on AAUW votes

Issue Area	Education			Abortion			Health Care		AAUW Scale
Bill	HR2 Mink Am	HR2 Arme y Am	HR2300	HR4811 Greenwood Am	HR3660	HR4205 Sanchez Am	HR2723 Goss Am	HR2990 Dingell Motion	
Female	1.312* (.588)	.925^ (.506)	1.516* (.764)	1.731** (.459)	2.083** (.499)	2.207** (.478)	.066 (.685)	.713 (.521)	.131** (.029)
Republican	-5.366** (1.014)	-5.343** (.604)	-6.901** (.589)	-3.272** (.274)	-4.165** (.444)	-3.414** (.292)	-6.530** (.741)	-5.769** (.730)	-.711** (.019)
District “Liberalness”	.620 (3.934)	.534 (4.436)	-1.644 (8.103)	5.573 (3.985)	16.630** (4.716)	8.858* (4.129)	-1.339 (5.629)	-.675 (4.509)	.335 (.280)
Seniority	-.028 (.024)	-.003 (.026)	.026 (.044)	-.023 (.021)	-.027 (.022)	-.008 (.021)	.002 (.032)	.035 (.025)	-.001 (.002)
Constant	5.121* (2.112)	3.884^ (2.168)	4.121 (3.846)	-1.042 (1.863)	-7.240** (2.189)	-2.769 (1.920)	5.252^ (2.751)	4.624* (2.236)	.736** (.132)
R2	.377	.531	.798	.386	.439	.412	.673	.546	.804
N	422	423	421	427	428	416	431	424	376
ME of Sex: Republicans	.299	.199	.102	.334	.134	.422	.008	.147	--
ME of Sex: Democrats	.004	.010	.023	.154	.325	.179	.001	.006	--

Note: ^ p < .1 * p < .05 ** p < .01; For the individual bills, the table includes the logit coefficient and standard error in parentheses, with the marginal effect of sex calculated by party with other variables set at their mean in the bottom two rows; For the AAUW scale, the table includes OLS coefficients and standard error in parentheses. The alpha scale reliability coefficient for combining the six items into one scale is .94.

Table 2.3 Gender Differences in the 103rd through 106th Congress (1993-2000) on Education Bills

Scale	Interest Group Rated Bills					All Education Bills					
	Congress	All	103 rd	104 th	105 th	106 th	All	103 rd	104 th	105 th	106 th
Female		.046** (.016)	.091* (.035)	.510 (.708)	.042 (.029)	.039* (.019)	.055** (.011)	.101** (.028)	.038 (.024)	.023 (.017)	.043** (.016)
Republican		-.717** (.010)	-.649** (.023)	-6.408** (.604)	-.806** (.020)	-.541** (.013)	-.710** (.007)	-.632** (.018)	-.654** (.015)	-.730** (.011)	-.817** (.011)
District "Liberalness"		.421** (.155)	.262 (.328)	22.719** (7.695)	.001 (.306)	-.064 (.187)	.269* (.107)	.249 (.261)	.963** (.220)	.252 (.173)	.004 (.156)
Seniority		.001 (.001)	.002 (.001)	-.047 (.037)	0 (.001)	.001 (.001)	.001 (.001)	.003* (.001)	-.001 (.001)	.001 (.001)	.001 (.001)
Constant		.802** (.075)	.841** (.160)	-5.482^ (3.137)	.870** (.141)	.750** (.088)	.842** (.052)	.804** (.127)	.471** (.095)	.809** (.080)	.915** (.074)
R2		.766	.678	.718	.809	.815	.862	.761	.830	.917	.935
N		1743	434	427	444	438	1760	437	445	439	439

Note: ^ p < .1 * p < .05 ** p < .01; For the individual bills, the table includes the OLS coefficient and standard error in parentheses, except for the 104th Congress for Interest Group Rated Bills, which includes the logit coefficient. The pooled regressions ("All") include dummies for the 104th, the 105th, and the 106th Congress, with the 103rd Congress as the reference group.

Table 2.4 Gender Differences and Biased Voters

Scale	103 rd : AAUW Scale	106 th : AAUW Scale	103 rd -106 th : All Education Bills
Female	.230** (.047)	.168** (.037)	.053** (.014)
Female*Bias Advantage	-.001 (.002)	-.002 (.001)	.0002 (.0004)
Republican	-.525** (.028)	-.716** (.020)	-.709** (.007)
District "Liberalness"	2.550** (.411)	.322 (.280)	.228* (.107)
Seniority	-.001 (.002)	-.001 (.002)	0 (.001)
Constant	-.423* (.200)	.746** (.132)	.863** (.052)
R2	.600	.804	.864
N	377	374	1732
Effect of Female: -1 SD in Bias	.241	.182	.052
Effect of Female: Mean Bias	.218	.138	.056
Effect of Female: +1 SD in Bias	.195	.094	.060

Note: ^ p < .1 * p < .05 ** p < .01; For the individual bills, the table includes the OLS coefficient and standard error in parentheses. Below the table of coefficients are the calculated effect of female for the minus one standard deviation, mean, and plus one standard deviation of the bias advantage variable. The pooled regression ("103rd-106th") includes dummies for the 104th, the 105th, and the 106th Congress, with the 103rd Congress as the reference group.

Table 2.5 Primaries – Effect of Legislator Sex on Party and Primary Voter Attitudes

Party/Voter Type	Republicans	Rep. Primary Voters	Democrats	Dem. Primary Voters
2000 NAES – 107th Congress				
Liberal/Conservative	-.007 (.007)	-.015 (.012)	-.002 (.006)	.017 (.011)
Social Security Spending	.008 (.007)	.009 (.013)	-.014** (.004)	-.003 (.007)
Federal Spending on Schools	-.001 (.011)	-.035 (.029)	.004 (.007)	.012 (.016)
Children’s Health Care	-.028^ (.015)	-.001 (.028)	-.002 (.007)	-.010 (.011)
Abortion	-.016 (.019)	-.008 (.030)	.005 (.013)	.047 (.035)
Defense Spending	-.012^ (.007)	-.003 (.010)	-.003 (.005)	-.008 (.011)
2004 NAES – 109th Congress				
Liberal/Conservative	.004 (.004)	.002 (.009)	.003 (.006)	-.006 (.011)
Social Security Investment	-.024* (.012)	-.056* (.025)	-.028** (.009)	.020 (.028)
Federal Spending on Schools	.001 (.007)	-.001 (.022)	-.004 (.004)	-.024^ (.014)
Children’s Health Care	.015 (.018)	.034 (.053)#	-.019* (.009)	-.054 (.046)#
Abortion	-.001 (.009)	.014 (.022)	.012 (.010)	-.016 (.019)
Defense Spending	0 (.007)	.013 (.015)	.005 (.006)	.012 (.021)

Note: ^ p < .1 * p < .05 ** p < .01; # indicates estimations with fewer than 50 (but more than 20) Congressional districts. Included in the table is the OLS coefficient on sex. Estimations include a control for estimated mean position of all respondents in the district on the same attitude variable and are estimated by party of the legislator. All estimations include only Congressional districts with 10 or more respondents.

Table 2.6 Female Candidates and Female Voters' Information: Contact, Participation, and Name Recall

	Contact: Dem	Contact: Rep	Participation	Voted	Recall: Dem	Recall: Rep
Female Resp.	-.143 (.092)	-.106 (.084)	-.140** (.024)	-.095 (.066)	-.366** (.067)	-.288** (.066)
Female Cand.	-.018 (.147)	-.156 (.184)	.044 (.034)	-.056 (.093)	.009 (.105)	.043 (.136)
FR*FC	-.023 (.203)	.260 (.262)	-.012 (.047)	.044 (.126)	.203 (.146)	.026 (.196)
Constant	.237 (.187)	1.288** (.182)	.052 (.046)	-1.975** (.124)	-2.478** (.151)	-1.468** (.152)
R2	.026	.091	.088	.179	.073	.124
N	3163	3251	8113	8111	6697	6908
Effect of FC on FR	-.041 (.140)	.104 (.187)	.031 (.032)	-.012 (.086)	.211* (.102)	.069 (.142)
Male Resp						
Male Cand	.736	.596	.917	.858	.261	.250
Female Cand	.733	.558	.961	.852	.263	.258
Female Resp						
Male Cand	.708	.570	.777	.846	.197	.199
Female Cand	.699	.596	.809	.845	.232	.211

Note: ^ p < .1 * p < .05 ** p < .01; For recall, contact, and voting, the table includes logit coefficients. For participation, the table includes the OLS coefficient and standard error in parentheses. In the middle row is the calculated effect of female candidates on female respondents with the computed standard error in parentheses. Below the table of coefficients are the predicted probabilities for men and women by sex of candidate. All models control for age, education, employment, income, home ownership, religious attendance, partisanship, and competitiveness of the Congressional race.

Table 2.7 Female Candidates and Female Voters' Information: "Don't Know" to Placement of Candidates on Issues

	Liberal/Conservative		Spending on Services		Guaranteed Jobs	
	Dem	Rep	Dem	Rep	Dem	Rep
Female Resp.	.310** (.063)	.293** (.063)	.389** (.072)	.385** (.068)	.323** (.101)	.408** (.094)
Female Cand.	-.063 (.102)	-.002 (.123)	-.017 (.116)	-.092 (.134)	.191 (.160)	-.098 (.172)
FR*FC	-.129 (.140)	-.135 (.170)	-.099 (.158)	0 (.186)	-.193 (.218)	-.059 (.237)
Constant	.855** (.131)	-.350** (.131)	.740** (.148)	-.153 (.142)	.494* (.208)	-.175 (.197)
R2	.025	.063	.030	.058	.028	.052
N	5624	5657	4406	4732	2251	2501
Effect of FC on FR	-.192* (.096)	-.137 (.119)	-.115 (.109)	-.092 (.129)	-.002 (.149)	-.157 (.165)
Male Cand						
Male Resp	.451	.432	.405	.417	.368	.426
Female Resp	.435	.432	.401	.395	.413	.402
Female Cand						
Male Resp	.528	.505	.501	.513	.445	.527
Female Resp	.480	.471	.473	.490	.445	.488

Note: ^ p < .1 * p < .05 ** p < .01; For recall, contact, and voting, the table includes logit coefficients. For participation, the table includes the OLS coefficient and standard error in parentheses. In the middle row is the calculated effect of female candidates on female respondents with the computed standard error in parentheses. Below the table of coefficients are the predicted probabilities for men and women by sex of candidate. All models control for age, education, employment, income, home ownership, religious attendance, partisanship, and competitiveness of the Congressional race.

Chapter 3

Theory: Politically Exploitable Heterogeneity and Legislator Divergence

The puzzle of the dissertation is that, contrary to the predictions of the median voter theory, legislators from similar districts and the same party do not always behave in the same way. I find that even controlling for district characteristics and party, women are more liberal than men on a variety of issues. In addition, some plausible explanations for why this divergence might occur – partisan biased voters, systematically different primary electorates, or differential voter information – do not explain the gender difference in Congress. This leaves us with the question: under what conditions will legislators pursue their preferences in representing their constituency?

In this chapter, I develop a theory of candidates' electoral strategy that can support their policy preferences in office. To win office, candidates must form election coalitions in the district that include enough voters to comprise a winning plurality. Districts with politically exploitable heterogeneity can liberate legislators to move away from the median voter and choose which groups within the district will be part of their election coalition. In these districts, legislators will woo groups that agree with their preferred policy position to be part of their election coalition. By doing so, legislators build electoral support within the constituency for pursuing their preferred policy positions in Congress. In more homogenous districts, on the other hand, legislators are constrained to appeal to the median voter to win office and therefore are constrained in their voting in Congress.

The chapter proceeds as follows. First, I review the literature on heterogeneity and candidate divergence, highlighting how my theory differs. Second, I explain the first component of the theory – that legislators must form an election constituency to win office and would prefer to build an election constituency consistent with their policy preferences. Third, I discuss the second component of the theory – what constitutes politically exploitable heterogeneity and how politically exploitable heterogeneity leads to candidate divergence. Fourth, I tie the two parts of the theory together and propose three testable hypotheses. Finally, I conclude with a discussion of my theory and how it might contribute to other important topics in political science, such as candidates’ campaign behavior and citizens’ vote choice.

3.1 Literature on Heterogeneity and Candidate Divergence

The suggestion that heterogeneity affects candidate divergence is not new. Multiple scholars argue that heterogeneity in the constituency should lead to candidate divergence. However what is not clear, and where I expect to build on the current research, is whether any type of heterogeneity is politically exploitable heterogeneity or if there is politically non-exploitable heterogeneity. Where my theory parts ways with the extant literature is in the proposition, developed in this chapter, that not all heterogeneity is *politically exploitable*. I argue that we should only expect heterogeneity to lead to candidate divergence in a district that consists of voters who disagree on their positions on issues and disagree on the relative priority of these issues. I also argue that not all forms of heterogeneity include these two components and therefore not all forms of heterogeneity should lead to divergence. My model both defines conceptually why

heterogeneity should matter and has useful implications for the empirical studies on this topic that find inconsistent relationships between demographic diversity, used as a measure of heterogeneity in the district, and candidate divergence.

Fiorina (1974) argues that heterogeneity can affect whether or not candidates diverge in their representation of a district. He defines heterogeneity as a district where there is conflict over policy positions. He argues that when there is conflict within the district, candidates can cultivate different election constituencies and represent their side of the conflict when in office (Fiorina 1974, pp. 100-103). Because there is conflict within the district, the district should also be highly competitive politically (Fiorina 1974, pp. 90-91). To test this, Fiorina presents two pieces of evidence. First, he presents evidence that demographic diversity in the district, as a measure of conflict, correlates with partisan competition in the district (Fiorina 1974, pp. 94-100). Second, he presents evidence that competitive districts have large differences in voting between Democrats and Republicans who replace each other in the district (Fiorina 1974, p. 103).

The problem with this argument is that Fiorina's model is uni-dimensional. He argues that because members of Congress cannot predict what issues will come to the floor for a vote in the future, they vote on each issue without regard to how they will vote on other issues (Fiorina 1974). However, Congressional elections may not be uni-dimensional. The constituency may care about more than one issue and these multiple issues may not reduce to a coherent, ideological, single dimension. As I will argue in this chapter, conflict on one dimension is not sufficient to induce candidate divergence. While there may be conflict on one issue in the constituency, I argue that if there is no conflict on other issues in the constituency the legislator will vote with the median voter and we

will not see candidate divergence. Without understanding the promises legislators make in the multi-dimensional setting of an election, we cannot predict how legislators will vote in the uni-dimensional setting of a vote in Congress.

Fenno (1978) also argues that the composition of the district can affect how a candidate cultivates her election constituency. Fenno cites a legislator who said his heterogeneous district “gives [him] a chance to balance interests in [his] votes. There really aren’t any dominant interests” (Fenno 1978, p. 156). Based on the evidence from his 18 legislators, a major theme in Fenno’s book is that the composition of the district is a determinant of legislators’ “homestyle”. He argues that heterogeneity provides candidates flexibility in how they present themselves to their district. He tentatively defines heterogeneity as a combination of the number of and the compatibility of significant interests in the district (Fenno 1978, p. 4). However, given the nature of his data, Fenno does not systematically test the effect of heterogeneity on legislators’ behavior in the district.

Other scholars have more directly tested the relationship between heterogeneity and candidate divergence. Gerber and Lewis (2004) find that heterogeneous districts have legislators who diverge more from the median voter than homogeneous districts. They test the effect of heterogeneity with unique data on voter preferences using Los Angeles county voter ballots on propositions and partisan candidates. Goff and Grier (1993) argue that heterogeneity should increase divergence based on theoretical results, derived by Miller (1980) and McKelvey (1986), that find that the size of the uncovered set, a solution set for multi-dimensional policy spaces, increases as voter heterogeneity increases. They analyze the difference in same-state Senators’ voting and find that

Senators from heterogeneous states, as measured by state demographic diversity, are more likely to diverge from each other than Senators from homogeneous states. However, Goff and Grier find inconsistent results across different types of diversity. The skew of the income distribution and a Herfindahl index based on occupation have a significant relationship with Senator divergence; the variance of income and a Herfindahl index based on ethnicity have no significant relationship to Senator divergence (Goff and Grier 1993, pp. 16-17). Goff and Grier do not propose an explanation for why certain types of demographic diversity lead to divergence while other types do not.

Sullivan (1973) looks at the relationship between demographic diversity and political competition in the states. According to Fiorina, heterogeneity in the district, because it allows candidates to cultivate different election constituencies, should also lead to political competition. Sullivan finds greater partisan competition in more diverse states (Sullivan 1973, p. 76). However, he also finds that racial diversity in the state leads to the opposite result – lower political competition (Sullivan 1973, p. 84). As with Goff and Grier, Sullivan does not suggest why certain types of demographic diversity lead to political competition while other types do not.

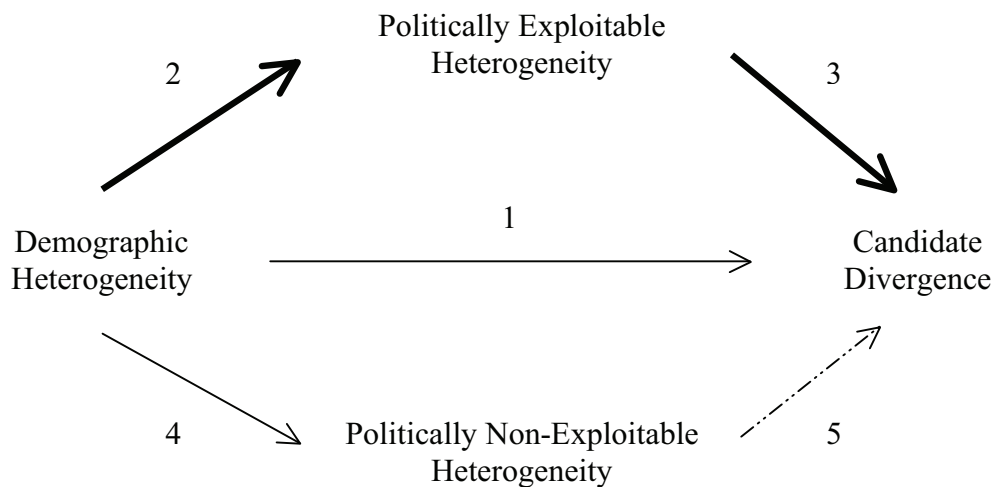
Clearly, demographic diversity is a blunt instrument to measure heterogeneity. However, it highlights an important theoretical distinction – politically exploitable heterogeneity versus politically non-exploitable heterogeneity. Certain types of diversity may lead to politically exploitable heterogeneity while other types may not. When diversity leads to the two components mentioned above – disagreement over positions and disagreement over priorities – we should find politically exploitable heterogeneity in the district. For example, racial diversity may lead to disagreement over preferences but it

may also lead to an agreement on priorities. Key (1949) found that the larger the minority population in the South, the more conservative whites were on racial issues. This would lead to greater disagreement on racial issues in the district. It is also plausible that racial diversity increased the importance of the issue of race for both whites and blacks. As I will argue in this chapter, despite whites and blacks disagreeing on their position on racial policy, if they agree that racial policy is the top priority we will not see divergence between candidates from districts with this type of demographic diversity. By defining politically exploitable heterogeneity with theoretical concepts, as I do in this chapter, we can understand when we should expect demographic heterogeneity to lead to candidate divergence and when we should expect it not to.

To clarify the distinction between my theory and current work, I refer to Figure 3.1, a diagram of the relationship between demographic heterogeneity and candidate divergence. Most work tests the link between demographic heterogeneity and candidate divergence, as represented by the middle portion of the diagram (path 1), and finds inconsistent results. I argue that is because demographic heterogeneity can lead to politically exploitable heterogeneity (PEH) *and* politically non-exploitable heterogeneity. PEH is represented in the upper portion of the diagram (path 2) and occurs when demographic heterogeneity leads to disagreement on both issue priorities and positions. If demographic leads to PEH, then demographic heterogeneity should also lead to candidate divergence (path 3). However, demographic heterogeneity can also lead to politically non-exploitable heterogeneity, which is represented in the lower portion of the diagram (path 4). This occurs when demographic heterogeneity leads to either disagreement on

priorities or disagreement on positions, but not both. In this case, demographic heterogeneity should not lead to candidate divergence (path 5).

Figure 3.1 Politically Exploitable versus Politically Non-Exploitable Heterogeneity



In the example of racial issues, I argue that racial diversity could lead to politically non-exploitable heterogeneity because the presence of racial diversity could lead to a disagreement on position, as blacks and whites may disagree on their positions on the issue but also an agreement on priorities, meaning the issue of race becomes the prominent issue in the district. In this case, we are unlikely to get candidate divergence. This example and the diagram help to highlight the difference between my theory and Fiorina (1974). Fiorina argues that when there is conflict on position and agreement on priority (path 3), candidates will diverge in their position. My argument is that this should *not* lead to candidate divergence. Only when there is disagreement on both priorities and position (path 2) should we get candidate divergence. Fiorina, on the other hand, would argue that when there is disagreement on position and priority (path 2), we should *not* get

candidate divergence. As mentioned earlier, this is driven by his assumption that votes in Congress are uni-dimensional, in that members of Congress do not consider their votes on other issues when voting on the issue at hand. Fiorina would argue that when constituents disagree on priorities, legislators always vote with the constituency that cares more about the issue, regardless of the positions of the constituency on other issues.

In the next sections, I explain in detail my theory of politically exploitable heterogeneity.

3.2 Part 1: Cultivating an Election Constituency

My theory is based on two basic assumptions about candidates' motivations as well as a model of how Congressional candidates campaign for office. First, I assume that candidates are motivated primarily by winning election (Mayhew 1974, Fiorina 1974). In order to win the election, candidates need to put together a winning coalition of groups within the constituency (Fenno 1978). Second, I assume that candidates are also motivated by policy, but will prioritize winning over implementing their ideal policy position because without gaining office, candidates cannot pursue policy (Osborne 1995). The candidates' pursuit of their personal preferences is constrained by needing to form a winning coalition.

As for the model of campaigning, candidates build a winning coalition, or an election constituency, by becoming familiar with the constituency through traveling and meeting with groups in the district. By first understanding the district and the composition of interests within the district, the candidate can then cultivate groups within the constituency for their election coalition (Fenno 1978). Fenno (1978) provides a

detailed portrait of how candidates learn about their district and form their election constituencies.

If candidates can choose which groups to include in their winning coalition, I argue they will want to include those groups with whom they agree. By including groups in their winning coalition who agree with the candidates' policy positions, candidates cultivate support in their district for voting their preferences in office. However, if candidates are constrained in which groups must be part of their election constituency, candidates will cultivate the groups they need to win office and not vote against these groups' wishes in office, whether or not these positions coincide with the candidates' preferences (Kingdon 1989, Fiorina 1974). Obviously, it is unlikely that the candidates' preferences and the winning coalition's preferences deviate too often, otherwise the candidate made a poor choice in which district to run for office (Kingdon 1989). However, given that candidates may not agree with the median voter in their district on everything, the question of the dissertation is when do legislators get to choose which preference groups are part of their electoral coalition?

3.3 Part II: Politically Exploitable Heterogeneity and Flexibility

To discuss how politically exploitable heterogeneity leads to candidate divergence, I first provide a formal representation of the model. I then provide a concrete example.

3.3.1 Formal Model of Politically Exploitable Heterogeneity and Divergence

Spatial modeling is useful for isolating the effect of conditions by providing precise expectations about the results of modifying certain conditions of a theory while holding other conditions constant. While some of the assumptions may be unrealistic, the usefulness of spatial modeling is in generating clear predictions that can guide measurement and tests. The key for our purpose is to look for which combination of conditions does not produce a single dominant position. If, given certain assumptions and conditions, it is possible to find a single dominant position, it is unlikely that candidates will have the flexibility to create different election constituencies and diverge in their Congressional behavior. Below, I first describe the basic multi-dimensional model of electoral competition. Second, I describe the conditions I modify that represent politically exploitable heterogeneity in the district and how modifying these conditions in the basic model can lead to candidate divergence.

3.3.1.1 The Basic Model

To begin, I lay out the assumptions of the basic electoral competition model.⁵ There are two candidates that compete in a single-round election that chooses one candidate. The election is decided by a single constituency and by a plurality of that constituency. Voters are not forward-looking, all voters participate, and they vote based on policies, represented by multiple dimensions, M . Voters act as if they have a preferred position on each dimension. The set of citizen i 's preferences on M issues is represented by the vector

⁵ The following model and notation comes from Davis Hinich and Ordeshook 1970 and Jackson 1973.

$$X_i = \begin{bmatrix} X_{i,1} \\ \cdot \\ \cdot \\ \cdot \\ X_{i,M} \end{bmatrix}$$

where $X_{i,1}$ is individual i 's preference on issue 1, etc. The full multivariate distribution of voters' preferences is obtained by identifying the percentage of voters who prefer a particular point. We also assume that the distribution is a radially symmetric continuous distribution, causing the median to also be the mean on the issue.

Candidates are also not forward-looking, they care primarily about winning⁶, and they can accurately identify the location of the median voter. The candidates' positions are well defined on the same continuous dimensions as the voters' positions and are known by each voter. Finally, the candidates have perfect spatial mobility. Candidate A 's strategy is represented by the vector

$$X_A = \begin{bmatrix} X_{A,1} \\ \cdot \\ \cdot \\ \cdot \\ X_{A,M} \end{bmatrix}$$

The candidate would like to be able to choose the position that is the preferred position for each voter, but that is unlikely to be possible. Instead, the candidate wants to pick the set of positions that will maximize her probability of getting a plurality of the votes. This probability is determined by the voters' utility loss associated with the candidate. The loss function is

⁶ Davis Hinich and Ordeshook (1970) note that while candidates may be motivated by other incentives, such as policy or benefits from political activity, "winning, at the very least, is instrumental for realizing most such goals" (Davis Hinich Ordeshook 1970, p. 438).

$$L^i = (X_i - X_A)'(A + \varepsilon_i)(X_i - X_A)$$

where $A + \varepsilon_i$ is the matrix of weights voters assign to the M dimensions. A is the average of weights assigned to the M dimensions and ε_i represents the individual deviations in weights from A . We assume that the weight on a given issue is uncorrelated with the position a citizen prefers, meaning that ε_i and X_i are uncorrelated.

3.3.1.2 Modifying the Basic Model

To analyze how politically exploitable heterogeneity (PEH) modifies the above basic model to allow for candidate divergence, we need to first define PEH. There are two aspects to a voter's attitude – position and priority (Kaufmann and Petrocik 1999). Position is where the voter stands on the issue. Do they want more or less spending on social welfare? How much regulation of financial markets do they want? Priority is how salient the issue is to the voter, meaning how important is the issue relative to other issues that are part of the voter's voting calculus. These aspects of attitudes, position and priority, lead to two components of heterogeneity within the district: position disagreement and priority disagreement. Position disagreement is the amount that voters disagree on the position they prefer on an issue. Priority disagreement is the amount that voters disagree on the priority they place on an issue relative to other issues.

This definition of the components of attitude heterogeneity leads us to examine the modification of two conditions in the model - disagreement in the district over issue positions and disagreement in the district over issue priorities. These conditions correspond to two important components of a spatial model that might affect whether we expect there to be a single dominant position for candidates. The first component is the

distribution of preferences on the dimensions. The two types of distributions that are relevant are unimodal and bimodal. The distribution of preferences corresponds with whether there is disagreement over policy positions in the district. A unimodal distribution represents a constituency that agrees on their preference on an issue. As the distribution becomes more bimodal this represents a constituency that is increasingly divided on an issue. The second component is how voters weigh each issue in their evaluation of candidates. This component represents whether voters agree on their issue priorities. If the weight is the same across all voters, then voters agree on their issue priorities. The greater the differences in the weight voters assign to different issues, the more voters disagree on their issue priorities.

These two components lead to four interesting situations. First, voters agree on their priorities and their positions, meaning they have the same weights on each issue and the distribution of preferences is unimodal. Second, voters agree on their priorities but disagree on their positions, meaning they have the same weights on each issue and the distribution of preferences is bimodal. Third, voters disagree on their priorities but agree on their positions, meaning they have different weights on each issue and the distribution of preferences is unimodal. Finally, voters disagree on their priorities and disagree on their positions, meaning they have different weights on each issue and the distribution of preferences is bimodal. In this final situation, because voters disagree on both priorities and position, voters' weight on an issue and voters' position on the issue will be correlated. This means that those who think an issue is important will have a different opinion than those who think the issue is unimportant. While I discuss four discrete

situations here, disagreement among voters on priorities and positions is a matter of degree.

The basic model assumes that all voters have the same relative weighting of the different dimensions. Given the assumptions of the basic model, candidates should converge to the median-like point (DHO 1970). This holds for whether the distribution of the electorate's preferences is unimodal or bimodal. This means that when voters agree on their priorities, regardless of whether they agree or disagree on their positions, the median-like point is the stable equilibrium point for candidates and we should not see candidate divergence.

When voters disagree on the relative weights assigned to issues but agree on their positions, the median-like point is still the dominant position for candidates. In this situation, where voters disagree on priority but agree on preferences, the assumption that voters' weights and positions are uncorrelated is still valid. Jackson (1973) provides the proof that the assumptions of radially symmetric distributions and uncorrelated weights and positions satisfy Plott's (1967) conditions for finding a stable equilibrium point in a multidimensional space. Plott (1967) provides two necessary and sufficient conditions for a stable equilibrium point to exist. First, the stable point must coincide with at least one person's preference on every issue. Second, there must be an equal number of voters on each side of the stable point, meaning that for every X_i , there must be an individual X_j , where $X_j = -X_i$, who would prefer the median to all other points. The assumption that the distribution is symmetric satisfies the first condition that there is at least one voter at the stable point. This assumption also ensures that there are diametrically opposed points, meaning an equal number of voters on each side of the stable point. Finally the

assumption that the weights and positions are uncorrelated ensures that voters prefer the median to all other proposals. For the proof, see Jackson (1973).

Finally, the interesting modification for my theory is when voters disagree on position and priority. In this case, the weights and positions are now correlated and Plott's second condition for finding a stable point is violated. Under these circumstances, since we do not have a stable equilibrium point, we will see the potential for candidate divergence. The direction of this cycling will be between the median and the direction of the correlation of the weights and the positions. For the proof, see Jackson (1973).

In the next section, I provide a concrete example of politically exploitable heterogeneity and the potential for candidate divergence.

3.3.2 Example of Politically Exploitable Heterogeneity and Divergence

To illustrate my definition of and the effects of politically exploitable heterogeneity, I rely on a simple example of a policy space where there are two potential issues voters in a district may use as part of their voting calculus – defense spending and abortion. There are three potential positions on each issue a voter may choose. For defense spending, the positions are more spending, no change in spending, or less spending. For abortion, the positions are ban abortion, allow abortion in cases of rape and incest, or allow abortion in all cases. The examples lay out preferences for three voters (A, B, and C) in the district. For these examples, I assume that the voters have equal weight in the district, thereby representing groups of equal numbers, and that the voters have fixed preferences, meaning they are not changed by framing effects or other campaign tactics. The number of issues that voters use to evaluate the candidates, the

policy preferences of voters A, B, and C, and the voters' relative issue priorities for four different types of districts are outlined in Table 3.1. The issues included in the rows for each district are the issues that are relevant to the voters' voting calculus. Bolded preferences indicate that one issue in a voter's voting calculus is relatively more important to the voter than the other issue in his voting calculus. When a district includes both issues, this indicates that both issues are relevant for the voter's choice between the candidates but the bolded issue holds more weight in the voter's decision.

Table 3.1 Four Types of Districts

<i>District A</i>		<i>Priority Agreement, Position Agreement (hereafter RAOA)</i>		
Issue(s)	Voter A	Voter B	Voter C	
Defense Spending	- Increase Spending	- Increase Spending	- Increase Spending	
Abortion	- Allow Abortion	- Allow Abortion	- Allow Abortion	
<hr/>				
<i>District B</i>		<i>Priority Agreement, Position Disagreement (hereafter RAOD)</i>		
Issue(s)	Voter A	Voter B	Voter C	
Defense Spending	- Increase Spending	- No Change in Spending	- Decrease Spending	
Abortion	- Ban Abortion	- Allow Abortion in Case of Rape, Incest	- Allow Abortion	
<hr/>				
<i>District C</i>		<i>Priority Disagreement, Position Agreement (hereafter RDOA)</i>		
Issue(s)	Voter A	Voter B	Voter C	
Defense Spending	- Increase Spending	- Increase Spending	- Increase Spending	
Abortion	- Allow Abortion	- Allow Abortion	- Allow Abortion	
<hr/>				
<i>District D</i>		<i>Priority Disagreement, Position Disagreement (hereafter RDOD)</i>		
Issue(s)	Voter A	Voter B	Voter C	
Defense Spending	- Increase Spending	- No Change in Spending	- Decrease Spending	
Abortion	- Ban Abortion	- Allow Abortion in Case of Rape, Incest	- Allow Abortion	

As outlined in section 3.1, districts come in four ideal forms. First, the district can agree on the issue priorities and agree on the policy solutions. This is illustrated in district A (RAOA), where voters agree defense spending is the most important issue and everyone agrees there should be increased spending. Second, the district can agree on issue priorities but disagree on the policy solutions. This is illustrated in district B (RAOD), where voters agree defense spending is the most important issue but all three voters disagree on the policy solution. Third, the district can disagree on which issue is relatively more important but agree on the policy solutions. This is illustrated in district C (RDOA), where everyone agrees that there should be increased spending on defense and abortion should be allowed, but Voter A thinks defense spending is more important, Voter C thinks abortion is more important, and Voter B thinks both issues are equally important.

Finally, the district can disagree on which issue is relatively more important and disagree on the policy solution to the issues. This is illustrated in district D (RDOD), where Voter A thinks defense spending is more important, Voter B thinks both issues are equally important, and Voter C thinks abortion is more important and all three voters disagree on the policy solutions to defense spending and abortion. In this situation, the district has what I label “intense preference minorities.” These are groups (here one voter) in the district who prefer a particular policy solution to the issue and think the issue is more important than other issues that the district is concerned about. The key point about these intense preference minorities is that, given the structure of their preferences, they are willing to trade an undesirable policy position on issues they care less about for

the desirable policy position on issues they care more about (Jackson 1973, Tversky 1972).

Now that we have defined politically exploitable heterogeneity, we can identify which districts require candidates to choose the same winning coalition and which districts allow candidates to choose different winning coalitions. If there is only one policy position a candidate can choose to win in the district, there is a dominant winning position in the district. However, if there are multiple policy positions that a candidate can choose to win in the district, there is no dominant winning position. It is in this district where there is no dominant winning position that there is politically exploitable heterogeneity. In this district, candidates can manipulate the available heterogeneity to create a winning coalition of their choice.

To identify why certain districts have a single dominant position and why some do not, I rely on the formal results described earlier. Districts A (RAOA) and B (RAOD) in table 3.1 are examples of the multi-dimensional policy space with different preference distributions. In these districts, the median voter should be a strong determinant of Congressional voting and we should find little candidate divergence on the issue of importance – defense spending. For district A (RAOA) this means all candidates will vote for increased defense spending in Congress. For district B (RAOD), all candidates will vote for no change in defense spending in Congress. District C (RDOA) also, obviously, has a dominant winning position for candidates, which is the position on which all voters agree.

Since districts A and B do not care about the issue of abortion, we can expect to see divergence between candidates on the issue of abortion in these districts (Kingdon 1989). The finding that members of Congress are unconstrained by their district on issues the district cannot be made to care about is prevalent in the legislative behavior literature (Kingdon 1989, Arnold 1990). However, the explanation that legislators only diverge on issues their constituency does not consider important is both theoretically uninteresting and empirically inaccurate. For example, in Chapter 2, gender differences in voting behavior emerged on publicly important issues such as partial-birth abortions and public funding for education. It is divergence on important issues that is truly puzzling given our understanding of Congressional behavior and, I argue, can be explained by the presence of politically exploitable heterogeneity.

District D (RDOD) is different from the other districts. Importantly, in this district, candidates can choose more than one position that is a winning position. This is because voters both disagree on positions and priorities (Jackson 1973). To illustrate this, I outline candidate strategies in table 3.3 for district D (RDOD). As a reminder, I also reproduce in table 3.2 the district's distribution of preferences and priorities.

Table 3.3 includes the candidate positions, voter choices, and winning outcomes of a three period game. In each period, two candidates compete to win the election by placing themselves at the median on both issues (the Median Candidate), the extreme on both issues (the Non-Median Candidate), or at the median on one issue and the extreme on the other issue (the Semi-Median Candidate).⁷ In each period, the voters choose between the candidates and vote for the candidate that provides lower utility loss. Voter A and Voter C choose a candidate based on both defense spending and abortion but

⁷ This naming comes from Jackson 1973.

weight the candidates' position on their prioritized issue more heavily (defense spending for Voter A and abortion for Voter C; Voter B weights both issues equally) (Tversky 1972). Column 1 indicates in which election period the candidates are running and the name of the candidates running. Column 2 identifies the candidates' positions on both issues. Column 3 identifies which voters each candidate would win given their policy position. Whichever candidate wins two voters wins the election and becomes the incumbent in the next period. As incumbent, the candidate is frozen at the positions she chose in the last period. For exposition, it is easiest to discuss this cycling in terms of different election periods. However, this cycling does not have to occur over time and could occur in one election period where candidates are free to move positions.

Table 3.2 District D (RDOD): Multiple Issues, Position Disagreement, Priority Disagreement District

Issue(s)	Voter A	Voter B	Voter C
Defense Spending	- Increase Spending	- No Change in Spending	- Decrease Spending
Abortion	- Ban Abortion	- Allow Abortion in Case of Rape, Incest	- Allow Abortion

Table 3.3 Cycling of Candidate Position in PEH District

	Candidate Position	Voters She Wins
<i>Election 1</i>		
Median Candidate	- No Change in Spending - Allow Abortion in Case of Rape, Incest	Voter B
Non-Median Candidate	- Increase Spending - Allow Abortion	Voter A, Voter C
<i>Election 2</i>		
Non-Median Candidate (Incumbent)	- Increase Spending - Allow Abortion	Voter C
Semi-Median Candidate	- Increase Spending - Allow Abortion in Case of Rape, Incest	Voter A, Voter B
<i>Election 3</i>		
Semi-Median Candidate (Incumbent)	- Increase Spending - Allow Abortion in Case of Rape, Incest	Voter A
Median Candidate	- No Change in Spending - Allow Abortion in Case of Rape, Incest	Voter B, Voter C

In election 1, if one candidate positions herself at the median voter on both issues, she can be beat by a candidate who places herself at a non-median position on both issues, given that the Non-Median Candidate chooses the positions that are preferred by the intense preference minorities. The Median Candidate would win Voter B’s vote. The Non-Median Candidate who offers increased defense spending (Voter A’s position on his prioritized issue) and allowing abortion (Voter C’s position on his prioritized issue) will win Voter A and Voter C’s votes and win the election.

However, the Non-Median Candidate is not immune to a challenger. In election 2, another candidate, the Semi-Median Candidate, can propose to be at the non-median

position on defense spending and to be at the median position on abortion. Voter C will still vote with the Non-Median Candidate because she offers him his preferred position on his prioritized issue, abortion. Voter B will vote with the Semi-Median Candidate because she offers him his preferred position on abortion and he has no choice on defense spending, since both candidates offer increased defense spending. Voter A will also vote for the Semi-Median Candidate because she offers him his preferred position on his prioritized issue, defense spending, and is closer to him on abortion than the Non-Median Candidate. By voting with the Semi-Median Candidate, Voter A has to give up less on the abortion issue while still getting his ideal position on defense spending. The Semi-Median Candidate beats the Non-Median Candidate.

However, the Semi-Median Candidate is also not immune to a challenger. In election 3, a challenger can offer the median position, which is Voter B's ideal policy position on both defense spending and abortion. Voter A will still vote with the Semi-Median Candidate because she offers him his ideal position on defense spending and there is no difference between the Semi-Median Candidate and the Median Candidate on abortion. Voter B will vote for the Median Candidate because she offers his ideal position on both issues. Voter C will also vote for the Median Candidate because she offers policy positions closer to his ideal position on defense spending than the Semi-Median Candidate and there is no difference between the candidates on abortion. Voter C has no option of voting for a candidate that provides him with his ideal position on his prioritized issue, abortion. The Median Candidate wins.

As outlined above, though, a challenger at the non-median position can then challenge and beat the Median Candidate. And so the cycling continues between the three

winning positions. What this means is that candidates can choose any of the above positions – median, semi-median, and non-median – and have a chance at winning the election. I argue that candidates, in this situation, will choose the position that most closely matches their ideal preferences and, by doing so, create an election coalition that supports voting their ideal preferences in Congress. However, this election coalition will be unstable and open to challenges. In summary, we should find candidate divergence only in districts that have both components of heterogeneity: voters disagree on the policy solutions to issues and voters disagree on which issue is a top priority.

The most interesting comparison is between the results of candidate positioning in district B (RAOD) versus district D (RDOD). Both districts have the same median voter on both issues – no change in defense spending and allow abortion in the case of rape and incest. However, district D (RDOD), because of the difference in priorities, allows candidates to choose which winning coalition they cultivate while district B (RAOD) has a single dominant position at the median on both issues. This is the key part of the argument. Despite both districts having the exact same median voter, district B (RAOD) should lead legislators to *converge* in their Congressional voting while district D (RDOD) allows legislators to *diverge* in their Congressional voting.

3.4 Tying it all together: Election Constituencies, Politically Exploitable Heterogeneity, and Candidate Divergence in Congress

Finally, we can bring the two parts of the theory together – one, candidates want to form electoral coalitions consistent with their policy preferences and two, certain types of heterogeneous districts allow candidates flexibility in choosing which groups will be

part of their election coalition. Candidates must form a winning electoral constituency to win office. If candidates have the flexibility to create a different winning coalition than other candidates, they will form a constituency that supports their policy preferences. This flexibility arises in districts where there are intense preference minorities willing to trade a position on other issues to get their preferred position on the issue they care about most. The flexibility in creating a coalition translates into flexibility in Congress. If a candidate can form a coalition consistent with her preferences, she can then vote her preferences in Congress. However, if a candidate is constrained in choosing a certain composition of a coalition in the district, the candidate will follow the preferences of her election constituency. This constraint will occur in districts where there are no intense preference minorities. In these districts, we will not see a difference between candidates from the same party with similar district medians.

The specific puzzle of the dissertation is the systematic gender gap in legislative voting between legislators from the same party and similar districts. The important first step of the argument is that legislators have policy preferences they want to pursue in office. Chapter 4 provides detailed evidence of a gender gap in attitudes, both at the mass public and elite levels. Given these differences, I expect female candidates will want to pursue different policy preferences in office than men. Therefore, as argued in my general theory of candidate divergence outlined in this chapter, these policy preferences should guide women's choice of winning coalitions in the district. This choice will be constrained by whether there is politically exploitable heterogeneity within the district on the issues where women differ from men in their policy preferences.

There are two important caveats to the effect of politically exploitable heterogeneity on the divergence between men and women. First, if the district does not care about women's issues, we will see divergence regardless of politically exploitable heterogeneity. Second, if the district does care about women's issues, we will only see divergence if there is PEH in the district on women's issues. Otherwise, if PEH exists in the district on other issues where there is no gender gap in preference, then we should see no divergence. The hypotheses derived from my theory are outlined below.

Hypothesis 1. If the district is not concerned about women's issues, there will be a gender gap in Congressional behavior, regardless of the level of heterogeneity.

Hypothesis 2. If the district either disagrees on positions or priorities, but not both, there will be no gender gap in Congressional behavior.

Hypothesis 3. If the district disagrees on position and disagrees on priorities, including issues where there is a gender gap in attitudes, there will be a gender gap in Congressional behavior on women's issues.

3.5 Conclusion

My theory presented in this chapter argues that politically exploitable heterogeneity in the district allows legislators to pursue their policy preferences in office and therefore we should find a gender gap among legislators from these types of districts.

While my theory is applied specifically to the gender gap in voting in Congress, it has implications for other aspects of Congressional behavior, for candidates' behavior during campaigns, and for citizens' voting behavior. Most obviously, since the theory is articulated in general terms about legislators following policy preferences, it should apply to other groups in Congress that differ in their policy preferences. The presence of politically exploitable heterogeneity should affect whether legislators of different ethnicities, from different class backgrounds, or of different religions converge or diverge in their voting in Congress. In addition, the theory should help to explain differences in legislators' agendas, meaning on what issues they introduce bills and the content of those bills. Just as legislators from districts with politically exploitable heterogeneity should be able to follow their preferences in voting on the House floor, legislators from these types of districts should also be able to follow their preferences in their bill introductions (Hall, 1996).

Beyond behavior in Congress, my theory has implications for candidates' behavior during campaigns. The presence of politically exploitable heterogeneity in the district should affect both what issues candidates focus on and to whom candidates make appeals. The major implication of my argument is that candidates will vary which groups they appeal to based on the potential in the district for the candidate to put together a winning coalition that is consistent with the candidate's preferences. In districts that do not have politically exploitable heterogeneity, there is no room for candidates to choose among possible groups for their winning coalition. Therefore, across more homogeneous districts with the same median voter and the same set of important issues, we should expect candidates' campaign issues and positions to be similar. However, in districts that

have politically exploitable heterogeneity, candidates should have more freedom to focus on the issues and positions that the candidates care about. We should find that, despite having similar median voters, two districts may differ drastically in what issues are discussed and which positions the candidates take during the campaign based on the level of politically exploitable heterogeneity present.

Finally, the theory may have interesting implications for vote choice. Depending on the composition of the district, candidates should either diverge or converge in their policy platforms. I expect that in districts with intense preference minorities we will see differences between male and female candidates on the issues and positions they address during the campaign. In districts that are more homogeneous, this gender difference in campaign platforms should not appear. Differences in platforms may have implications for which voters will vote for a female candidate. Among more homogeneous districts, where there will be no difference between male and female candidates' platforms, we should also find no difference in whether male or female voters vote for a female candidate. However, among districts with politically exploitable heterogeneity, female candidates may have the flexibility to emphasize issues where there is a gender gap in policy preferences in a way that is different from a male candidate. In these types of districts, we might find a gender gap in voting for a female candidate. Because of the female candidate's emphasis on issues important to women, women may be more likely to vote for the female candidate and possibly cross party lines in their voting than they would if the same party's candidate were male.

While in this dissertation I apply my theory of politically exploitable heterogeneity to the specific question of gender differences in Congressional voting, the theory has implications for a broad range of important topics in political science.

Chapter 4

The Gender Gap in Attitudes Among Elites

A key component of the theory of politically exploitable heterogeneity is that candidates have policy preferences they would like to pursue in office and will create election coalitions based on these preferences when possible. For this theory to explain gender divergence in Congress we must be able to assume there is a gender gap in preferences between male and female legislators. In this chapter, I review the evidence of a gender gap among legislators and present results that suggest we can assume that politically elite men and women differ in their policy preferences. First, I review the evidence of a gender gap in attitudes and present arguments on both sides of whether we should expect a gender gap to emerge among political elites. Second, I discuss my two approaches to assessing whether a gender gap in attitudes exists among political elites – using the 1992 Convention Delegates Study and the 1992-2000 American National Election Study surveys. Third, I present my results from the two surveys. Finally, I discuss my findings that the gender gap persists among political elites, especially on issues of social welfare, where there is a gender gap among non-elites, and emerges on moral issues where there is not.

4.1 Evidence of a Gender Gap in Attitudes

There is strong evidence that men and women in the mass public have different policy preferences on a range of issues. Women are found to be considerably more liberal

than men on areas of government involvement in ensuring employment and government spending on social services generally (Kaufmann and Petrocik 1999; Shapiro and Mahajan 1986; Poole and Ziegler 1985; Chaney, Alvarez, and Nagler 1998; Iversen and Rosenbluth 2006). In addition, some studies find a major difference between men and women on the advocacy of civil rights and anti-discrimination against minorities (Shapiro and Mahajan 1986; Norrander 1999a in Hutchings et al 2004; Kaufman and Petrocik 1999). Finally, some find significant differences over time on the use of force, with women much less likely to support the use of force at home and abroad (Shapiro and Mahajan 1986). Surprisingly, a gender gap on issues relating directly to women, whether it is the Equal Rights Amendment (ERA), women's roles in society, or abortion, has not appeared (Kaufmann and Petrocik 1999; Hutchings et al 2004; Chaney, Alvarez, and Nagler 1998).

The evidence of a gender gap in preferences among legislators is less plentiful. Thomas and Welch (1991) found that male and female legislators differed in their legislative priorities. Female legislators were more likely than men to name women, children and the family, the environment, and welfare as their areas of priority. Dodson (2001) found that women were more likely than men to express attitudinal support for feminist causes among both self-declared feminists and non-feminists.

The most glaring problem with depending on this type of evidence of gender differences in attitudes among legislators is that the reasoning is circular. We expect that male and female legislators will behave differently in the legislature because of their different policy preferences; we know that male and female legislators have different policy preferences because they behave differently in the legislature. Besides the problem

of these actions being on both the right-hand-side and left-hand-side of the model, the actions and expressed attitudes of a legislator are tainted by too many other influences (constituency, party, interest groups) to be reliable indicators of the legislator's personal preferences. However, it is difficult to find direct measures of legislators' personal preferences.

One option is to assume that the gender gap among elites will mirror the gender gap among the mass public. Believing this assumption, though, depends on which explanation for the gender gap is correct. There are three major explanations for why and on what issues a gender gap in policy attitudes will emerge: the socialization of women, the feminist identity of women, and women's self-interest.

The socialization explanation argues that men and women are socialized differently. Women are raised to relate to others and have both care and concern for the well-being of others (Gilligan 1982). Men, on the other hand, are taught to focus more on individuality and the needs of their own family. Given this socialization, women are expected to be more liberal on "compassion" issues than men, such as spending on the poor, the elderly, and children and the needs of minority groups (Hutchings et al 2004; Shapiro and Mahajan 1986).

A second explanation for the gender gap is that as women become more closely identified with the feminist movement, there will be a larger gender gap on issues that relate to women. This expectation is consistent with Converse's research on belief systems. Belief systems that are centered on a group, such as blacks, exhibit high constraint among issues that are directly related to the group (Converse 1964). Conover (1988) found some evidence that the gender gap was mainly due to different preferences

among feminist women. Cook and Wilcox (1991) also find that women who express greater support for feminism also tend to be more liberal.

A final explanation for differences based on gender is self-interest. This explanation comes in two versions. The first is that women are more likely than men to be poor or to face the prospect of poverty. They are also more likely to live longer than men and to have to care for children on their own (Piven 1985; Iversen and Rosenbluth 2006). Because of these realities, women are expected to support greater government spending on the social safety net. The second version of the self-interest argument comes from a recent article by Iversen and Rosenbluth (2006). They argue that the explanation that women are more likely to be economically vulnerable is not sufficient to explain the gender gap on social welfare. Iversen and Rosenbluth cite evidence that even women who are financially secure, in terms of income, are more likely than men in their same situation to support greater public investment in social welfare (Iversen and Rosenbluth 2006). They argue, instead, that women desire government involvement in childcare, caring for the elderly, and health care, among other things, because this relieves women of some of the large amount of unpaid work they do within the home. In this way, women gain stronger bargaining power within the home over the division of labor, such as who will work and how much. This bargaining power is relevant in countries where divorce is likely and women must prepare themselves economically for the possibility of the dissolution of their marriage. Iversen and Rosenbluth find strong evidence for their argument in a cross-national study (Iversen and Rosenbluth 2006).

There are multiple reasons to expect the gender gap to persist among elites. If socialized compassion explains the gender gap, then we might expect the gender gap to

persist among elites. It is possible that gender socialization is similar across class lines. If feminism explains the gender gap, then the gender gap should exist among the political elite. In fact, the gender gap may be larger among the political elite than the non-elite. Those who are politically involved tend to be higher educated (Burns, Schlozman, and Verba 2001) and women with more education express stronger support for feminism (Warner 1991). Finally, if the self-interest explanation based on bargaining in the household over unpaid work explains gender differences in attitudes, we would expect politically elite women to also support a government safety net more than politically elite men.

On the other hand, there are also strong reasons why we might expect the gender gap to disappear among the elite. In general, differences in income, education, and political involvement lead to differences in attitudes. Education can make you more liberal, higher income leads to more conservatism, and political involvement should lead your attitudes to be more consistently constrained. These differences based on education, income, and political involvement should affect women as well as men and might serve to lessen or eliminate the gender gap. Finally, if the explanation for the gender gap is self-interest based on the fact that women tend to be poorer and have fewer resources than men, elite women may no longer differ from elite men. They would not be subjected to these types of experiences that would make them more liberal. In addition, while group identification among African-Americans leads to a racial attitude gap that crosses class lines (Dawson 1994), women are less likely to feel a common fate with other women that might lead to a gender gap regardless of class.

Given these convincing arguments on both sides of the existence of a gender gap among elites, it is unclear whether the gender gap will persist among the political elite. In addition, given evidence that all three explanations of the gender gap (socialization, feminism, self-interest) have some merit, it is not clear how the combination of these influences will affect politically elite women. The more appropriate question that remains unanswered then is on what issues does the gender gap emerge among the political elite?

4.2 Testing for a Gender Gap among Elites

To test for gender differences in attitudes among the political elite, I use two approaches, each with their advantages and disadvantages. First, I analyze the 1992 Convention Delegates Study. This study surveyed the delegates to the Democratic and Republican conventions in 1992, asking questions about their background, career aspirations, and political attitudes. A clear advantage of using this survey is that attendees to these conventions are clearly political elites – they are more politically involved than most Americans and have more constrained belief systems than the mass public (Jennings 1992). In addition, there is a long battery of attitude questions that cover important issue areas such as social welfare, health care, crime, and abortion. The disadvantage of this study is that it is not correct to equate convention delegates with public office holders. Many of the convention delegates were not public office holders and many did not aspire to hold public office. In addition, I find clear attitude differences between those who aspire to political office among the delegates and those who do not. Those who held office or aspire to office are less extreme than those who do not. A second disadvantage is the survey is conducted in the context of the party convention. There are multiple

questions on the survey that ask about party support, commitment to party work, and how candidates affect the party's ticket. With this emphasis on the party, there may be more conformity to the party's platform than otherwise. This may approximate the pressures candidates are under when running for office or may obscure the freedom candidates have when forming their individual campaign in a particular district.

The second approach I use is to analyze the cumulative American National Election Study surveys between 1992 and 2000, the time period during which I find the gender gap in Congress. The ANES includes questions on political participation that allow us to distinguish respondents who are part of the political elite. It is likely that these political elites are part of the pool of people recruited to run for office. In addition, the ANES allows for a direct comparison between the political elite and non-elite, as well as allows us to analyze more years than just 1992. The clear disadvantage of analyzing the ANES is that even the political elite among the mass public are not necessarily the same as the political elite involved in national politics. While there is clear differentiation in attitude structure among the mass public based on political participation, the attendees to the party conventions are still significantly attitudinally different from the most active of the mass public (Jennings 1992). By using these two different surveys, I hope to offset the disadvantages of each and to get a clearer picture of the elite gender gap than using only one survey would provide.

In each dataset, I analyze the issue questions that are comparable between the two datasets. This includes a wide range of issues – government spending, federal spending on child care, federal spending on college, federal spending on public schools, federal spending on social security, federal spending on the poor, federal spending on welfare,

federal spending on the homeless, access to abortion, allowing school prayer, defense spending, government health insurance, federal spending on blacks, government assistance to blacks, equal gender roles, federal spending on the environment, and federal spending on crime. I coded each issue area such that the expected gender gap would lead to a positive difference between women and men. For example, spending on children and education is coded such that support for increased spending is at 1 and support for decreased spending is at 0. All variables run from 0 to 1. I consider a gap to be a difference of 5 percentage points or more that is statistically significant at the 95% level, consistent with other scholars (Shapiro and Mahajan 1986).

4.2.1 Analyzing the 1992 Convention Delegate Study

Because one worry about the Convention Delegate Study is the difference between those who hold public office and those who are party advocates, I analyze the gender difference in attitude only for those who once held public office or who aspired to hold public office. The CDS asked two separate questions about public office. The first was whether the respondent ever held public office. I included anyone who said they currently held or held in the past a public position for national, state, or local office. The second was whether the delegate had any aspirations for public office. I included anyone who said yes to aspirations for public office at the national, state, or local level. As mentioned above, those who held or aspired to public office tend to be less extreme than the delegates who were uninterested in public office.

Because party is so influential in Congress and is an indication of an individual's core preferences, I analyze whether the gender difference arises within each party.

Because women are more likely to be Democrats than men, if we analyze the gender differences without respect to party, the results may be driven just by the fact that Democrats differ from Republicans. Instead, we are interested in whether, within each party, women differ from men. To identify the party of the delegates, I created a dummy variable for party with Republicans coded at 0 and Democrats coded at 1.

I estimate the following model using standard OLS for each policy opinion question:

$$Policy = \beta_0 + \beta_1 Female + \beta_2 Dem + \beta_3 Female \times Dem + \varepsilon$$

Female is a dummy variable with men coded at 0 and women coded at 1. Dem is the dummy variable for party with Republicans coded at 0 and Democrats coded at 1. Female x Dem is the interaction of the two variables.

4.2.2 Analyzing the 1992-2000 American National Election Studies

To identify the political elite, I created a measure of political involvement from a respondent's political participation, political interest, and political knowledge. Political participation is a combination of six questions in the ANES: try to influence others' vote choices, attend political meetings or rallies, work for a party or candidate, display a candidate button or sticker, and donate money to a party or candidate. I also included whether the respondent voted in the most recent general election. Political interest is a question of how much the respondent follows what's going on in government and public affairs. The response options run from hardly at all to most of the time. The political knowledge variable is based on the interviewer's observation of the respondent's knowledge. The options run from very high to very low. I combined all four variables

(participation, vote, interest, and knowledge) into one scale variable. I then designated as political elite the top 15 percent of this variable (Jennings 1992).

The distinction between the political elite and the political non-elite is stark. The average level of participation among the top fifteen percent is 2.6 political acts and all voted, while the average level among the rest of the respondents is .4 political acts and “only” 60% voted. All of the political elites completed at least one act of participation, whereas 68% of the political non-elite completed no act. The average interest level of the political elites is .95, equivalent to saying “follow public affairs most of the time”, and the average knowledge level is .86, equivalent to somewhere between “fairly high” and “very high”. The average interest level among the political non-elites is .56, equivalent to somewhere between “follow public affairs now and then” and “some of the time”, and the average knowledge level is .48, equivalent to “average”.

To make the analysis of gender differences using the NES comparable to the analysis of the CDS, I also analyze the gender difference by party. I look at Democrats and Republicans only. To identify Democrats and Republicans, I used the 7-point party identification variable. I coded as party identifiers partisan leaners, weak partisans, and strong partisans. The only category excluded from the analysis is pure independents.

I estimate the following model using standard OLS for each policy opinion question, pooled over the five surveys, separately by party:

$$Policy = \beta_0 + \beta_1 Female + \beta_2 PE + \beta_3 Female \times PE + \beta_{4-7} Year + \varepsilon$$

Female is a dummy variable with men coded at 0 and women coded at 1. PE is the political elite dummy variable with the top 15 percent of political participants coded at 1

and everyone else coded at 0. Female x PE is the interaction of the two variables. Year represents dummy variables for each year of the survey, with 1992 as the reference.

4.3 Results

The results are presented in tables 4.1 to 4.6 at the end of the chapter. First are the results for Democrats in the NES (Tables 4.1 and 4.2). Second are the results for Republicans in the NES (Tables 4.3 and 4.4). Third are the results for the CDS (Tables 4.5 and 4.6). Also included is a graph of the gender differences for each issue area. The graph is the marginal effect of gender with 95% confidence intervals by party and by elite/non-elite for the NES and by party for the CDS.

Among the political non-elites, I find a gender gap in areas that are mostly consistent with earlier studies of the gender gap in attitudes. Women are more liberal than men in areas of social welfare. They want more spending than men on services generally and specifically on child care, public schools, social security, welfare, the poor and the homeless. This gender gap holds for both Democrats and Republicans on social security and the homeless. Republicans are mostly driving the gender gap in other areas. I did not find gender differences overall or in either party on other issue areas – defense spending, government health care, government aid to blacks, women’s equal role, abortion, school prayer, or federal spending on college aid, crime, and the environment.

Similar to non-elites, elites differ by gender over social welfare issues. In both the NES and the CDS, Democratic women are more liberal than Democratic men on spending on social security, child care, and the homeless; Republican women are more liberal than Republican men on spending on the homeless. In the NES only, Republican

women are also more liberal than Republican men on government health care and just miss the threshold on a gender difference on federal spending on public schools. In the CDS only, Democratic women are more liberal than Democratic men on government services spending generally and federal spending specifically on college aid. Altogether, it appears that women among the political elite are more liberal than elite men on social welfare issues, though the particular issue and the particular party where differences arise depend somewhat on which survey you analyze.

Among the elite, there are two issues where consistent differences from the non-elite arise – school prayer and abortion. In both surveys, women are more liberal on the issue of school prayer – in the NES the difference appears among Democrats and in the CDS the difference appears among Republicans. A more striking difference emerges on the issue of abortion. Elite women are consistently and significantly more liberal than elite men on allowing access to abortion. In the NES, this difference persists only among Democrats but in the CDS the difference is larger among Republicans than Democrats, though both groups exhibit significant gender differences. There is a clear difference among elites on the issues of school prayer and abortion that does not exist among non-elites.

4.4 Conclusion

First, these results provide evidence that the assumption that elite men and women differ in their attitudes on policy issues is valid. The results also guide us as to where we should expect differences in behavior in Congress to arise. We should see men and

women in Congress voting differently on social welfare issues, school prayer, and abortion.

Second, the results in this chapter present a striking problem for the literature on descriptive representation. As discussed in Chapter 2, many scholars who study the effect of women in Congress assume that because female members of Congress vote differently, they represent women. When scholars find gender differences on health care, abortion, and spending on children, they argue that this is evidence of elite women sharing the preferences of non-elite women and representing those preferences in office. However, as shown in this chapter, elite women and non-elite women do not always share the same preferences. We are alerted to this potential problem by the difference in the gender gap on abortion between elites and non-elites. While non-elite men and women do not differ on the issue of abortion, elite women are more liberal than elite men. Of course, this could be true and elite women could have the same attitudes as non-elite men and women. However, this is not necessarily the case. In the NES, elite Democratic women's mean on the abortion scale is .90; In the CDS, the Democratic women's mean is very similar at .92. The non-elite Democratic women's mean is .66. For Republicans, though, elite women are closer to non-elite women. In the NES, elite Republican women's mean on the abortion scale is .57; In the CDS, again, the Republican women's mean is similar at .59. The non-elite Republican women's mean is .57. Here, we find that elite and non-elite women have similar preferences.

What this highlights is that we cannot assume, just because we find gender differences in Congress, that female members of Congress are representing the preferences of their female constituents. Instead, female members of Congress are

representing their own preferences in Congress, which sometimes mirror the preferences of non-elite women and sometimes do not. The question for the next chapter is whether politically exploitable heterogeneity in the district can explain when elite men and women follow their personal preferences in office.

Table 4.1 NES Gender Differences, Democrats I

	Govt Services	FS: Child Care	FS: College Aid	FS: Public Schools	FS: Social Security	FS: Poor	FS: Welfare	FS: Homeless	Abortion	School Prayer
Female	0.040*** (0.009)	0.035*** (0.010)	0.013 (0.014)	0.019* (0.008)	0.058*** (0.009)	0.036** (0.011)	0.023 (0.013)	0.045*** (0.012)	-0.010 (0.012)	0.026* (0.011)
PE	0.012 (0.018)	0.049* (0.022)	0.090** (0.030)	0.017 (0.018)	-0.095*** (0.021)	0.004 (0.024)	0.036 (0.029)	0.015 (0.026)	0.158*** (0.026)	-0.092*** (0.025)
Female *PE	0.001 (0.029)	0.049 (0.033)	0.008 (0.045)	-0.009 (0.027)	0.014 (0.031)	-0.001 (0.036)	0.060 (0.043)	0.006 (0.039)	0.078* (0.039)	-0.091* (0.038)
Cons.	0.570*** (0.009)	0.749*** (0.010)	0.796*** (0.012)	0.850*** (0.009)	0.747*** (0.010)	0.810*** (0.011)	0.427*** (0.013)	0.879*** (0.011)	0.683*** (0.013)	0.444*** (0.011)
R ²	0.030	0.017	0.010	0.006	0.037	0.012	0.016	0.034	0.024	0.023
N	3504	3777	2089	3806	3798	2953	3747	2080	4404	3224

Table 4.2 NES Gender Differences, Democrats II

	Defense Spending	Govt Health Insurance	FS: Blacks	Govt Aid to Blacks	Equal Gender Roles	FS: Environment	FS: Crime
Female	0.015 (0.010)	0.022 (0.011)	0.010 (0.016)	0.019 (0.010)	0.010 (0.009)	-0.026** (0.010)	0.027** (0.009)
PE	0.089*** (0.020)	0.049* (0.025)	0.055 (0.033)	0.097*** (0.023)	0.068** (0.021)	0.028 (0.022)	-0.101*** (0.021)
Female *PE	0.021 (0.031)	-0.015 (0.038)	0.017 (0.051)	0.029 (0.035)	0.029 (0.031)	0.048 (0.033)	0.042 (0.031)
Cons.	0.612*** (0.010)	0.672*** (0.012)	0.585*** (0.014)	0.428*** (0.011)	0.799*** (0.010)	0.839*** (0.010)	0.845*** (0.010)
R ²	0.078	0.019	0.012	0.019	0.015	0.034	0.017
N	3005	3105	2016	3736	3933	3791	3794

Table 4.3 NES Gender Differences, Republicans I

	Govt Services	FS: Child Care	FS: College Aid	FS: Public Schools	FS: Social Security	FS: Poor	FS: Welfare	FS: Homeless	Abortion	School Prayer
Female	0.078*** (0.010)	0.066*** (0.014)	0.014 (0.018)	0.069*** (0.013)	0.097*** (0.012)	0.073*** (0.015)	0.055*** (0.012)	0.087*** (0.019)	-0.018 (0.013)	0.023* (0.010)
PE	-0.145*** (0.017)	-0.147*** (0.024)	-0.140*** (0.032)	-0.197*** (0.022)	-0.151*** (0.020)	-0.122*** (0.026)	-0.106*** (0.021)	-0.204*** (0.033)	-0.045 (0.023)	-0.001 (0.019)
Female *PE	-0.055 (0.029)	-0.055 (0.043)	0.023 (0.055)	-0.022 (0.039)	-0.053 (0.036)	-0.079 (0.045)	-0.026 (0.037)	0.023 (0.057)	0.046 (0.041)	-0.021 (0.033)
Cons.	0.403*** (0.010)	0.584*** (0.014)	0.710*** (0.015)	0.730*** (0.013)	0.619*** (0.011)	0.592*** (0.013)	0.251*** (0.012)	0.708*** (0.015)	0.615*** (0.014)	0.457*** (0.011)
R ²	0.096	0.047	0.031	0.061	0.076	0.051	0.052	0.080	0.004	0.008
N	2847	2931	1548	2979	2957	2222	2962	1536	3390	2509

Table 4.4 NES Gender Differences, Republicans II

	Defense Spending	Govt Health Insurance	FS: Blacks	Govt Aid to Blacks	Equal Gender Roles	FS: Environment	FS: Crime
Female	0.032*** (0.009)	0.027* (0.013)	0.019 (0.017)	0.027** (0.010)	-0.011 (0.011)	0.025* (0.013)	0.040*** (0.011)
PE	-0.033* (0.015)	-0.179*** (0.022)	-0.085** (0.029)	-0.053** (0.017)	-0.005 (0.019)	-0.160*** (0.022)	-0.117*** (0.020)
Female *PE	-0.018 (0.027)	0.043 (0.039)	0.093 (0.055)	-0.024 (0.029)	-0.051 (0.033)	-0.025 (0.039)	0.015 (0.035)
Cons.	0.518*** (0.009)	0.485*** (0.012)	0.400*** (0.014)	0.308*** (0.010)	0.760*** (0.011)	0.725*** (0.013)	0.812*** (0.011)
R ²	0.090	0.068	0.013	0.020	0.006	0.069	0.026
N	2469	2458	1543	2965	3024	2965	2975

Table 4.5 CDS Gender Differences I

	Govt Services	FS: Child Care	FS: College Aid	FS: Public Schools	FS: Social Security	FS: Poor	FS: Welfare	FS: Homeless	Abortion	School Prayer
Female	0.028 (0.021)	-0.005 (0.021)	-0.022 (0.021)	0.039 (0.021)	-0.010 (0.019)	0.020 (0.021)	0.006 (0.021)	0.058** (0.021)	0.120*** (0.025)	0.045 (0.035)
Dem	0.392*** (0.016)	0.320*** (0.016)	0.283*** (0.016)	0.377*** (0.016)	0.048** (0.014)	0.288*** (0.016)	0.241*** (0.016)	0.354*** (0.016)	0.398*** (0.019)	0.460*** (0.027)
Female* Dem	0.030 (0.025)	0.051* (0.026)	0.067** (0.025)	-0.015 (0.025)	0.055* (0.023)	0.019 (0.025)	0.022 (0.026)	0.007 (0.026)	-0.068* (0.030)	-0.035 (0.042)
Cons.	0.136*** (0.013)	0.525*** (0.013)	0.527*** (0.012)	0.502*** (0.012)	0.575*** (0.011)	0.476*** (0.012)	0.329*** (0.013)	0.444*** (0.013)	0.474*** (0.015)	0.204*** (0.021)
R ²	0.424	0.337	0.309	0.393	0.036	0.292	0.215	0.365	0.330	0.243
N	1542	1531	1533	1532	1532	1530	1530	1537	1483	1538

Table 4.6 CDS Gender Differences II

	Defense Spending	Govt Health Insurance	FS: Blacks	Govt Aid to Blacks	Equal Gender Roles	FS: Environment	FS: Crime
Female	-0.042* (0.019)	-0.009 (0.023)	-0.003 (0.022)	0.036 (0.023)	0.059*** (0.017)	-0.028 (0.021)	-0.023 (0.020)
Dem	0.276*** (0.014)	0.568*** (0.017)	0.263*** (0.017)	0.368*** (0.018)	0.146*** (0.013)	0.274*** (0.016)	0.010 (0.015)
Female* Dem	0.055* (0.023)	0.042 (0.027)	0.036 (0.026)	-0.025 (0.028)	-0.021 (0.020)	0.070** (0.025)	0.039 (0.024)
Cons.	0.481*** (0.011)	0.198*** (0.013)	0.407*** (0.013)	0.280*** (0.014)	0.797*** (0.010)	0.501*** (0.012)	0.823*** (0.012)
R ²	0.324	0.561	0.244	0.314	0.136	0.295	0.005
N	1553	1544	1522	1541	1537	1527	1522

Figure 4.1 Government Services

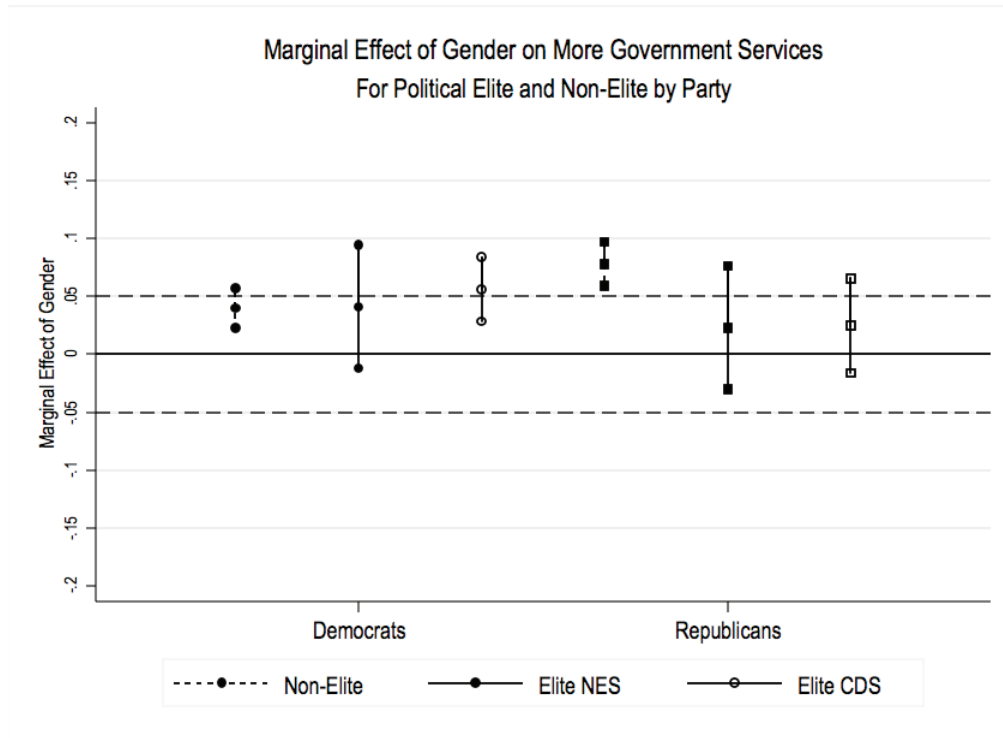


Figure 4.2 Spending on Child Care

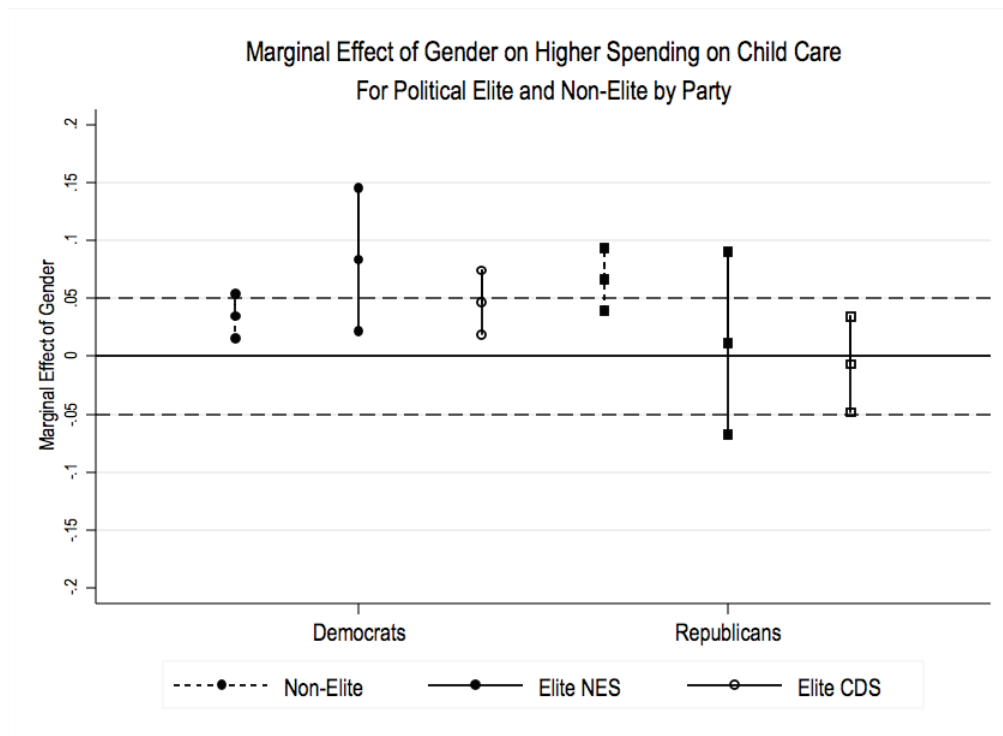


Figure 4.3 Spending on College Aid

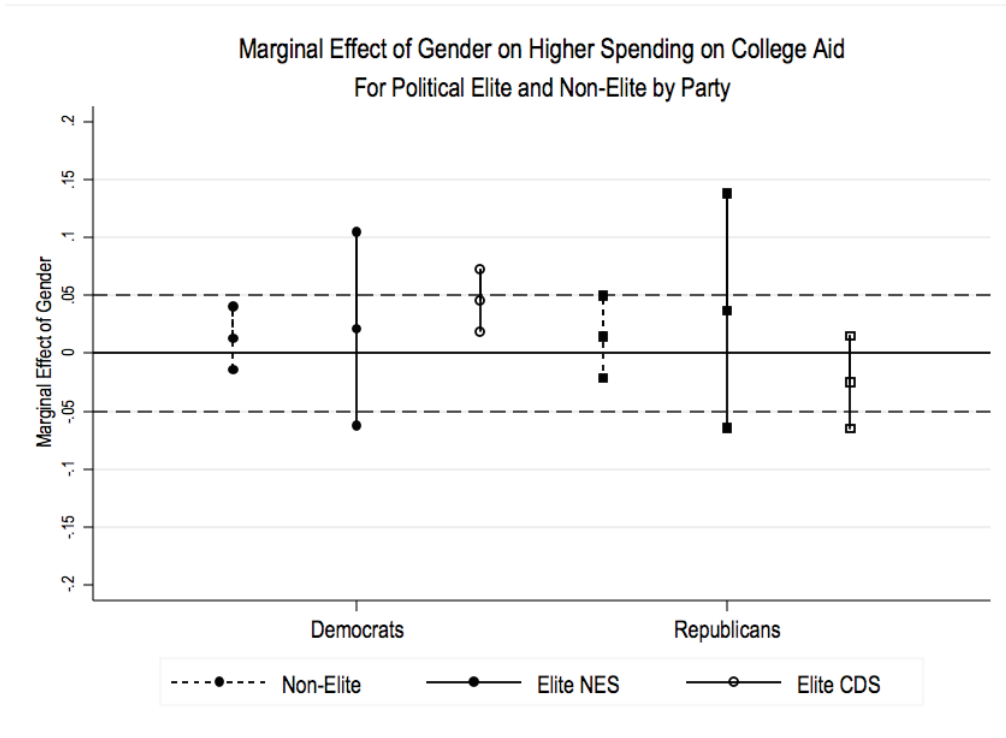


Figure 4.4 Spending on Public Schools

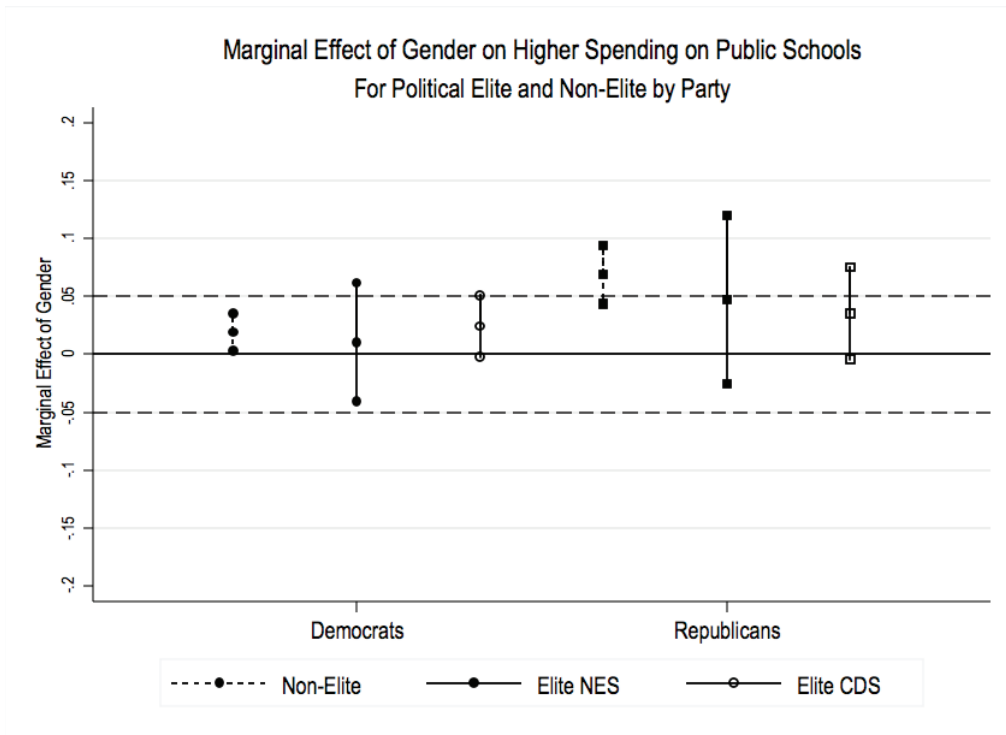


Figure 4.5 Spending on Social Security

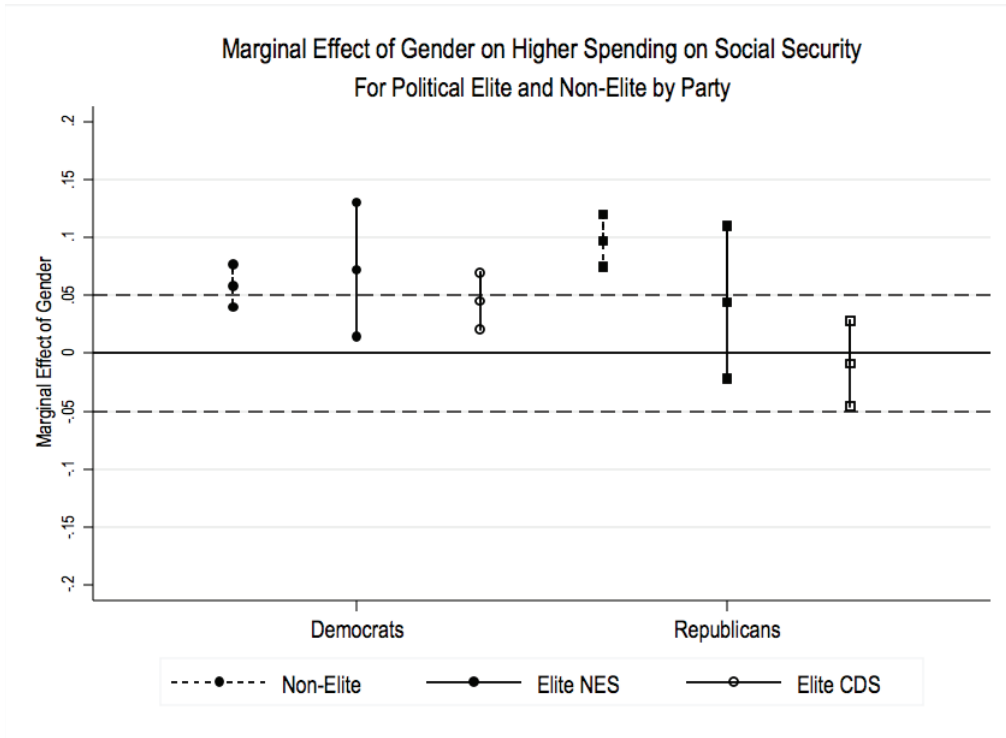


Figure 4.6 Spending on the Poor

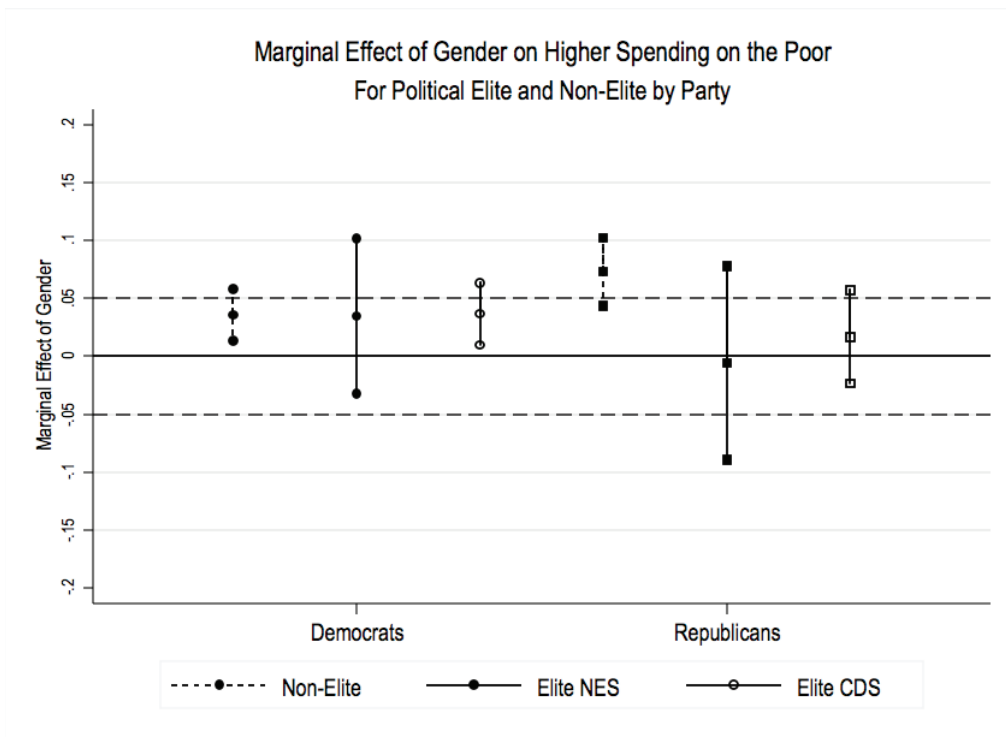


Figure 4.7 Spending on Welfare

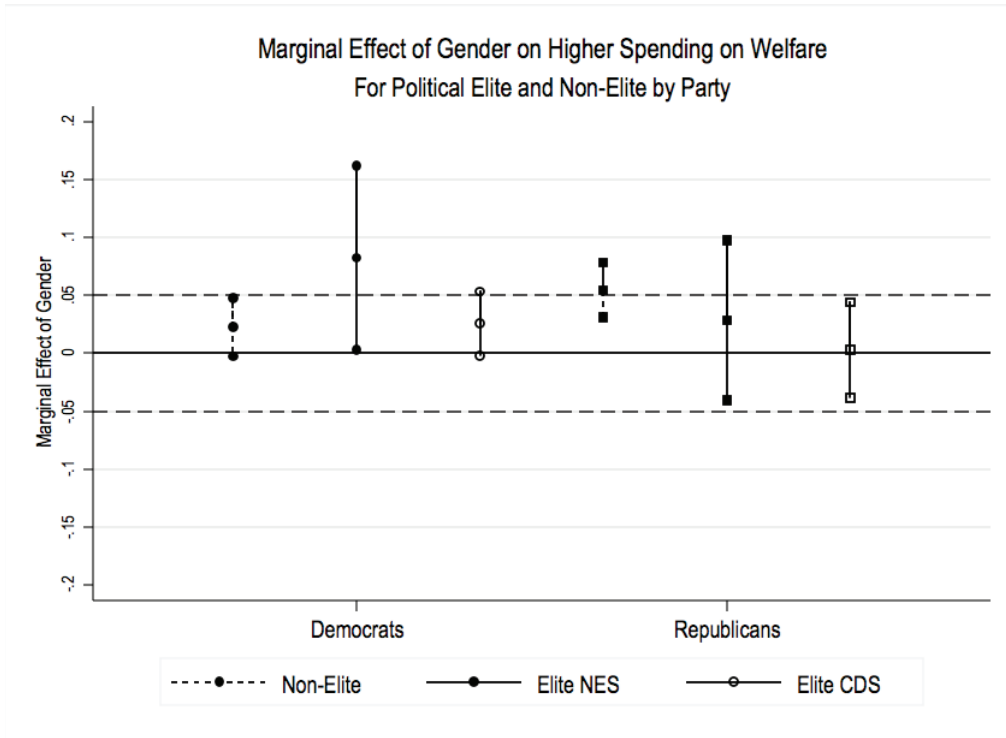


Figure 4.8 Spending on the Homeless

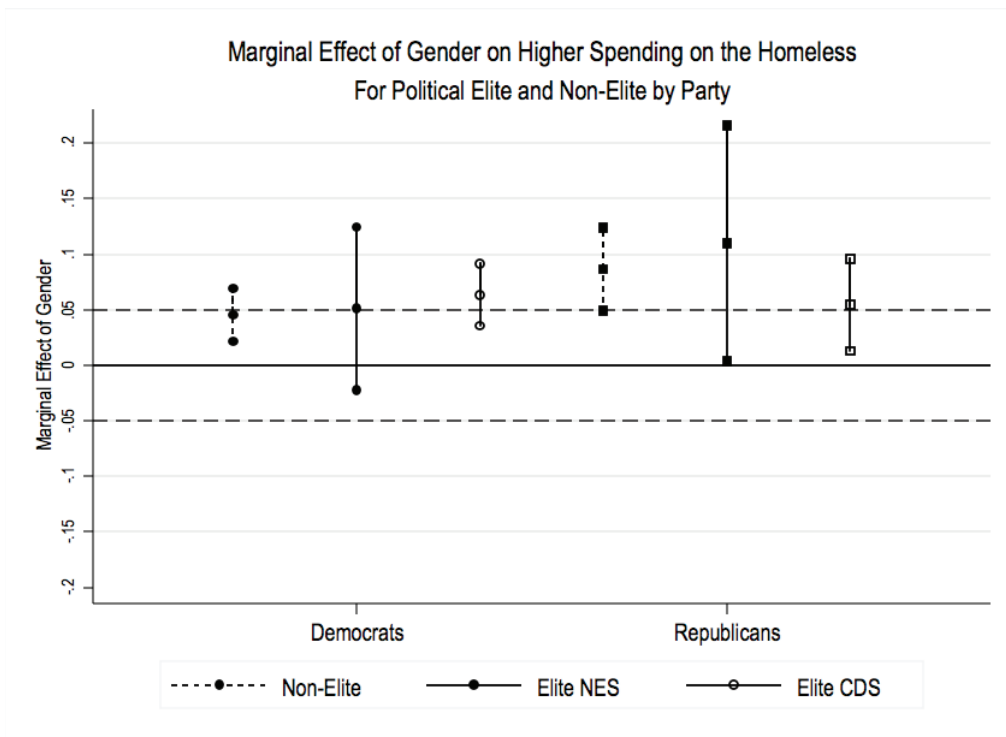


Figure 4.9 Abortion

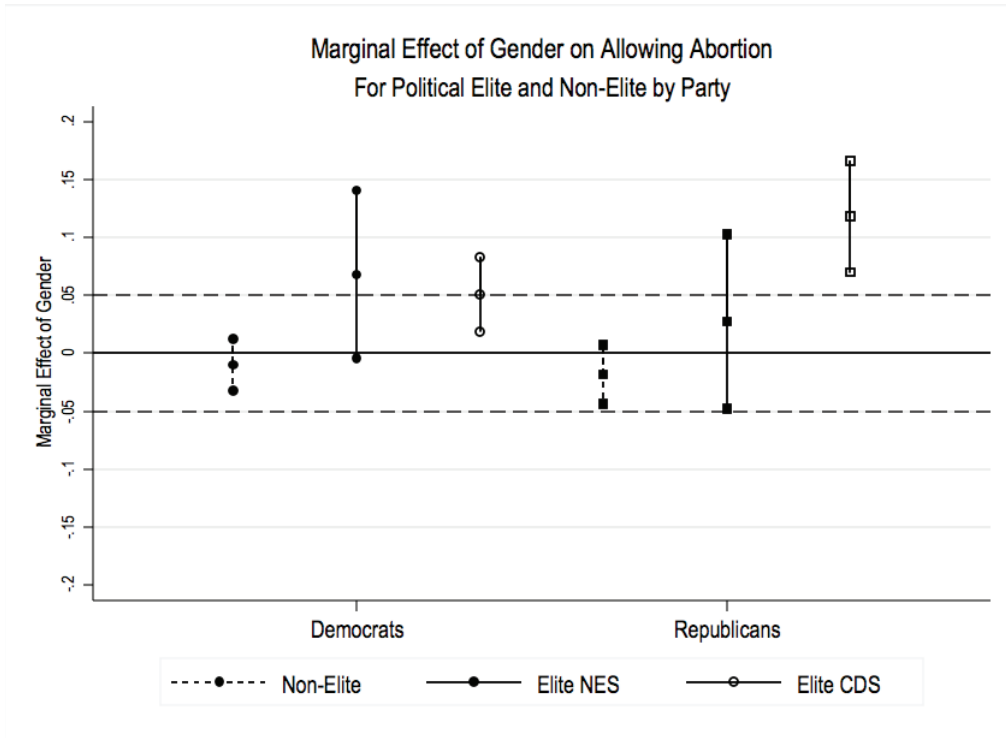


Figure 4.10 School Prayer

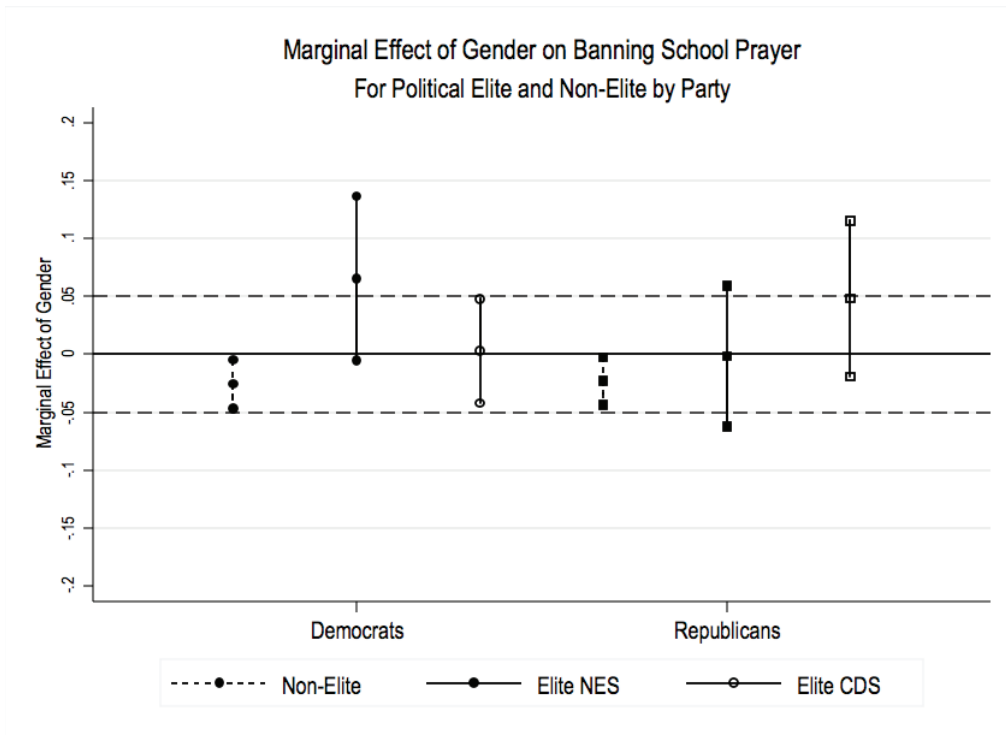


Figure 4.11 Defense Spending

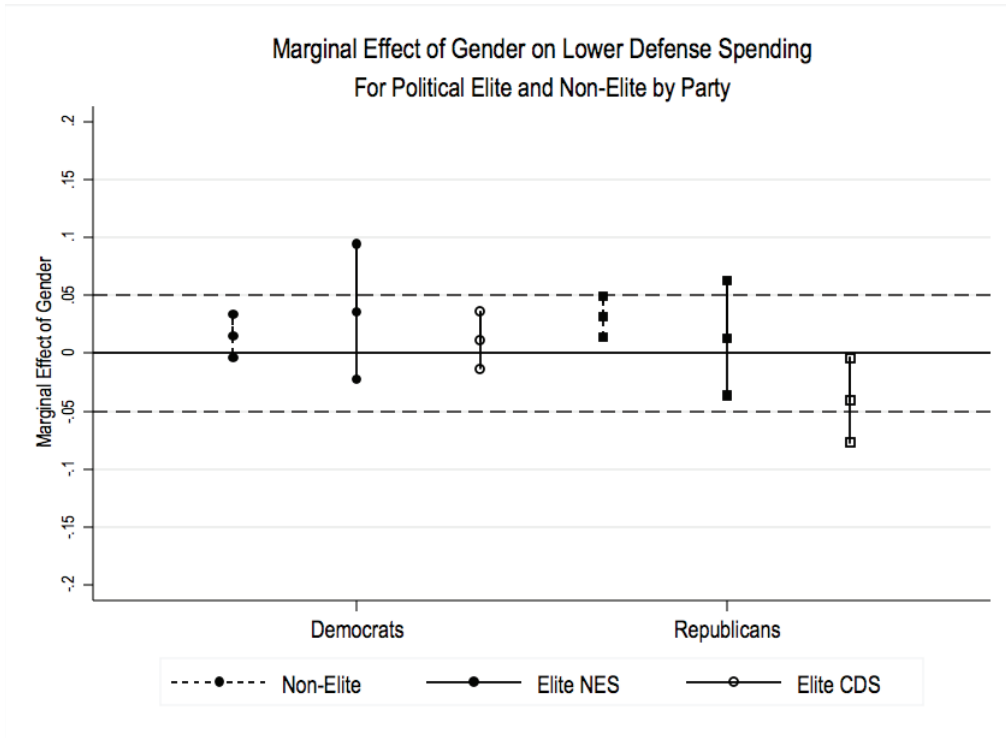


Figure 4.12 Government Health Care

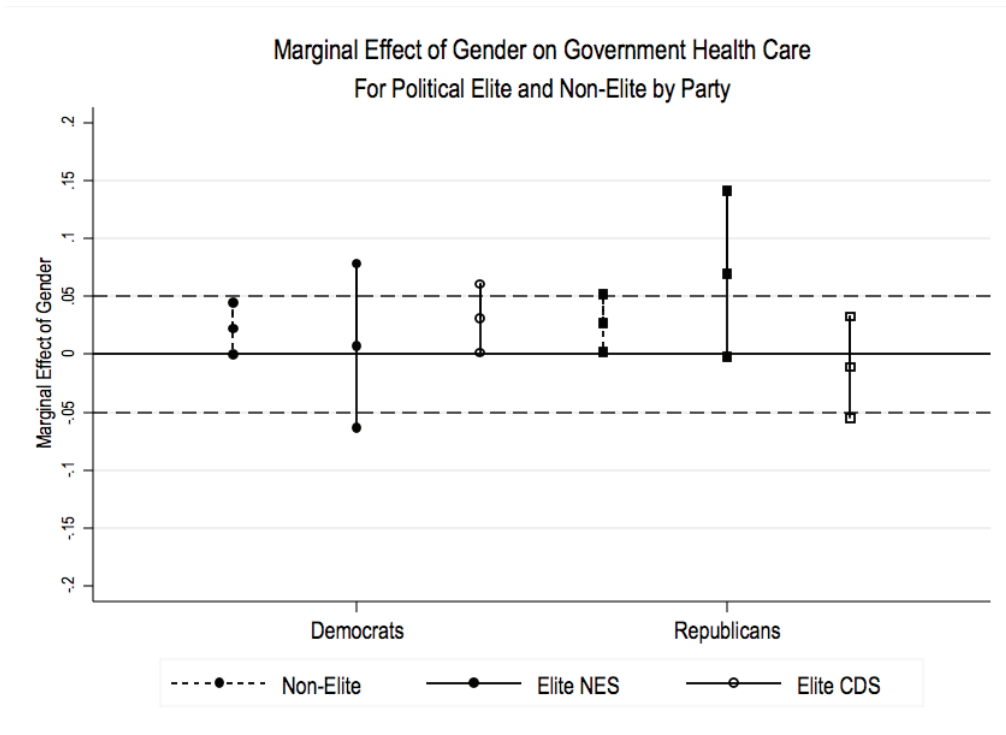


Figure 4.13 Spending on Blacks

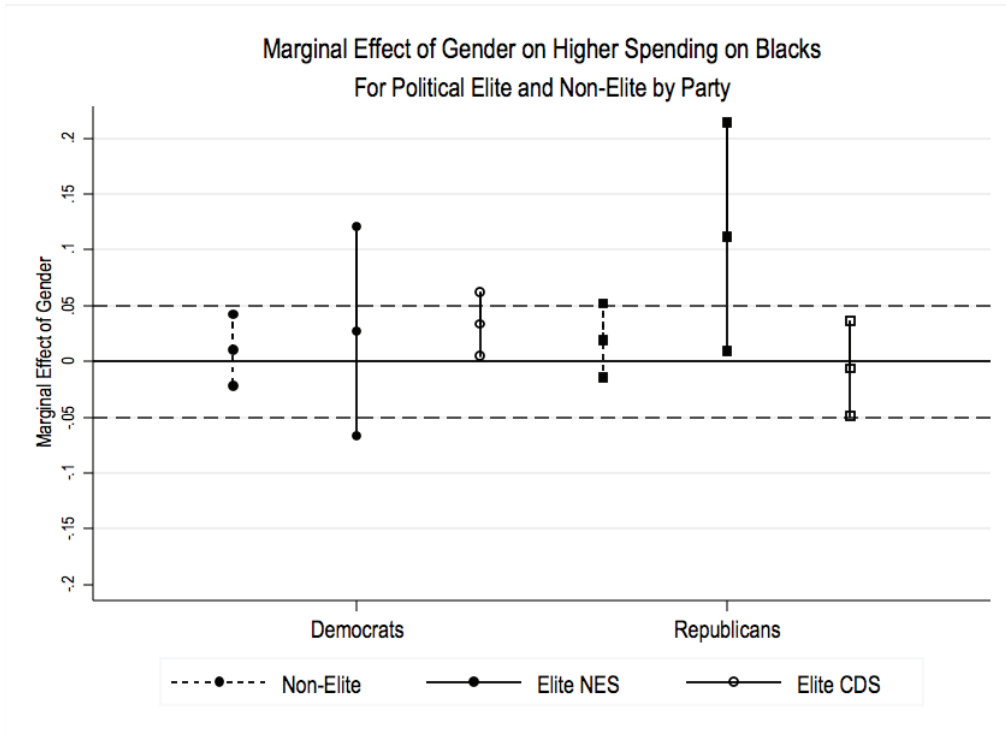


Figure 4.14 Government Aid to Blacks

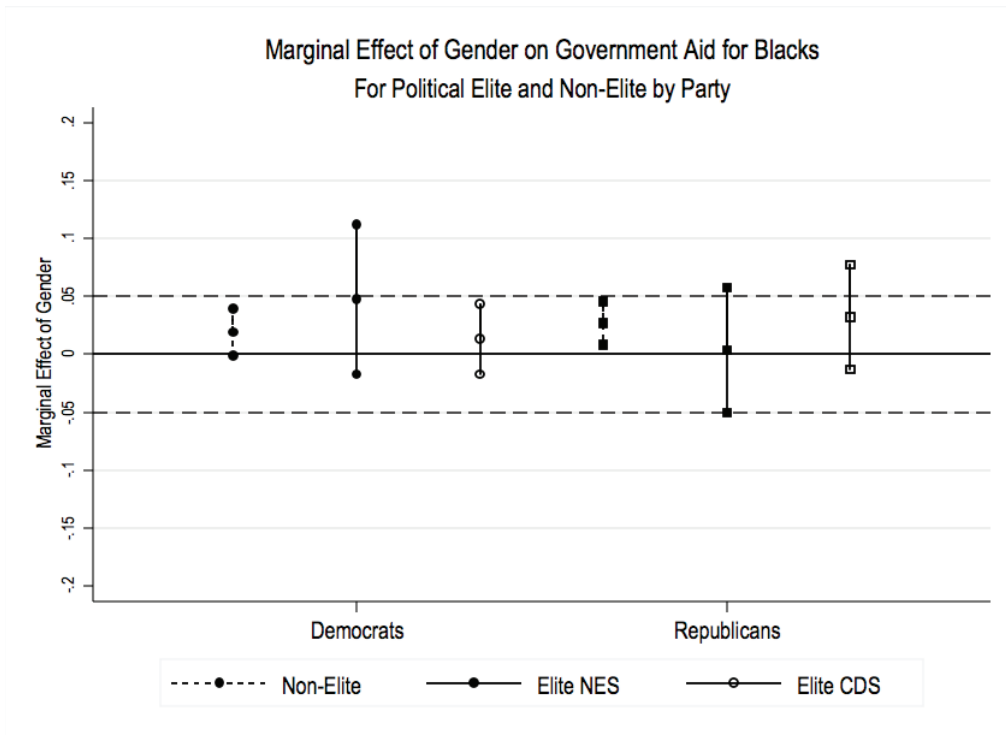


Figure 4.15 Equal Gender Roles

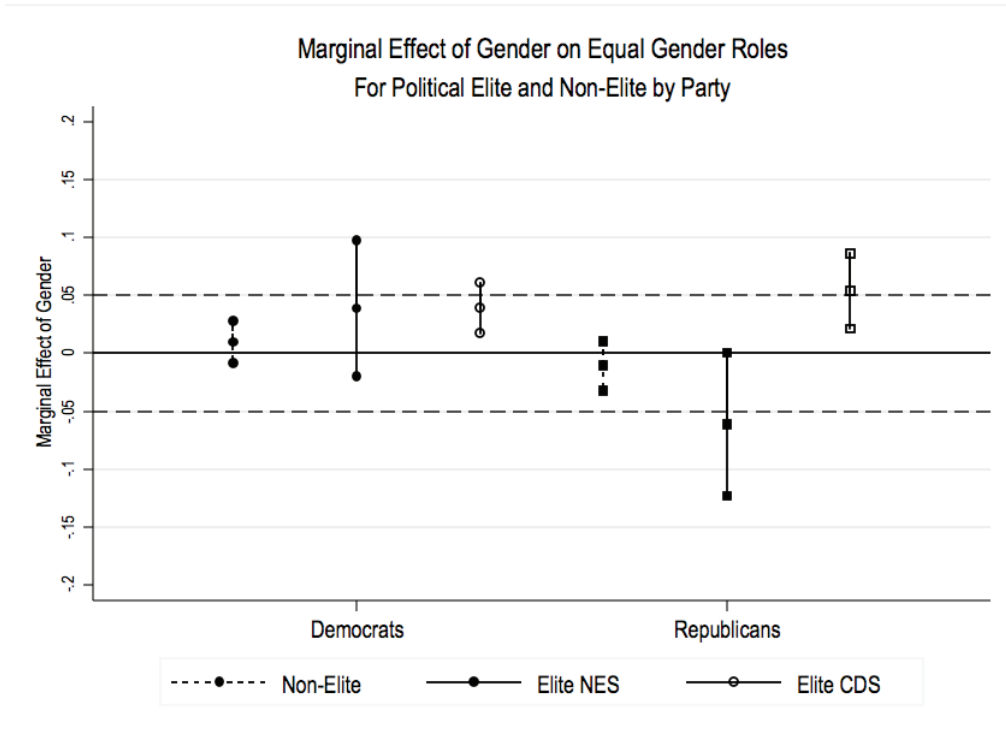


Figure 4.16 Spending on the Environment

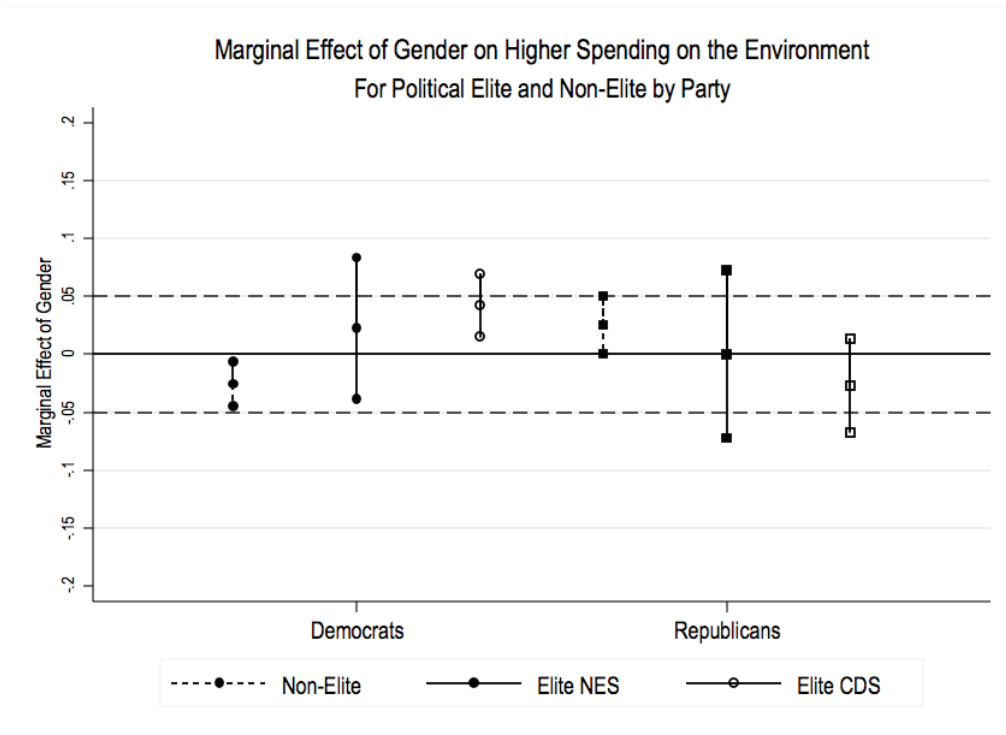
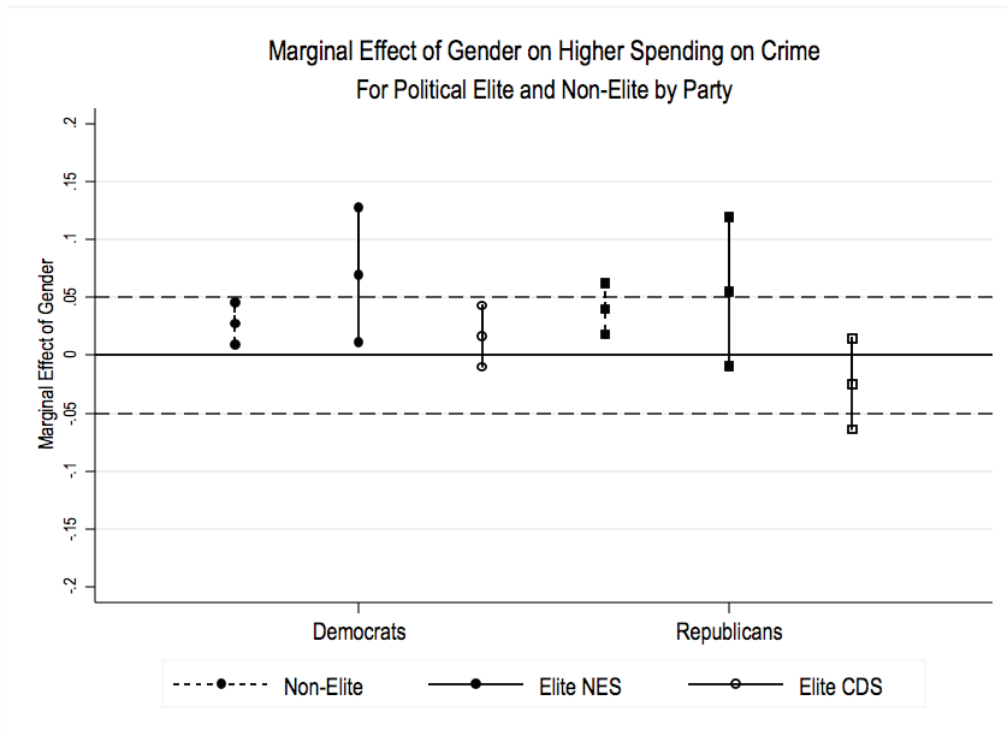


Figure 4.17 Spending on Crime



Chapter 5

Measuring Politically Exploitable Heterogeneity

Measuring politically exploitable heterogeneity is difficult because it is a complicated theoretical concept with multiple components. In this chapter, I propose two ways of measuring it. First, I use a standard way of measuring preferences – using national survey data. Second, I propose a new way of measuring preferences that, to my knowledge, has not been used before to measure preferences in the district. This new measure is based on individual contributions in the district to political action committees (PACs). The chapter is organized as follows. First, I discuss the concept of politically exploitable heterogeneity and how we would ideally measure the components of the concept. Second, I discuss the national survey measure, highlighting the advantages and disadvantages of the measure. Third, I discuss the individual contributions measure, also discussing the advantages and disadvantages. The next chapter presents the results from each measure as a test of the effect of politically exploitable heterogeneity on legislator divergence in Congress.

5.1 Measuring Politically Exploitable Heterogeneity

Politically exploitable heterogeneity occurs in a district where there is disagreement over priorities of issues and preferences on issues. When constituents disagree on both priorities and preferences, intense preference minorities form in the district, meaning groups who care about an issue and have a particular preference on the

issue. These groups are willing to trade a non-preferred position on an issue they care less about for their ideal position on the issue they care most about. Referring to our formal model discussion, when those who care about the issue have a particular preference on the issue, preferences and priorities are correlated. When preferences and priorities are correlated on multiple issues, intense preference minority groups exist in the district across multiple issues and a legislator can choose which groups to cultivate for an election coalition consistent with the legislator's preferences.

The important components to measure are whether an intense preference minority exists on an issue and whether these groups exist on multiple issues in the district. To measure these two components of politically exploitable heterogeneity, within each district, we would ideally need a measure of everyone's priorities over every possible issue. We would also need everyone's position on all issues that are important in the district. Using this information, we could then get a measure of the correlation of priorities and preferences on each issue in the district. As the correlation increases on two or more issues, the level of politically exploitable heterogeneity should also increase. Unfortunately, this exact type of data does not exist.

Because these ideal measures do not exist, we need to set up some guidelines for what a good measure will look like. To translate these two components to measurement, it is easier to focus on one issue. I use the topic of education, which was discussed in Chapter 2 as an issue where there are gender attitude differences among both non-elites and elites and as an issue where we find gender differences in Congressional voting.

First, we want to know whether there is an intense preference minority in the district on education. As mentioned above, this means we would like to know whether

those who prioritize education have a particular preference on education (e.g. more spending on public education). An intense preference minority on education may not exist for two reasons. First, there will not be an intense preference minority in the district if education is not important in the district. As we know from Kingdon (1989), if the district does not care at all about education and cannot be convinced to care about education, the legislator is free to follow her preferences on the issue. In this case, we would find legislator divergence on the issue. Second, a preference minority may not exist when education is important but the constituents who prioritize education do not agree in their position on the issue, meaning, for example, some want less spending on education and others want more. In this case, the lack of an intense preference minority should lead legislators to converge on the median of the issue. In our measurement of the presence of intense preference minorities, we need to take these two possibilities into account.

Second, we need to measure whether intense preference minorities exist on multiple issues. This aspect of the concept is particularly hard to capture without knowing the entire universe of issues relevant in the district as well as having a measure of the existence of an intense preference minority on every issue. Even if we do have a measure of an intense preference minority on every possible issue, it is difficult to create a useful summary measure of the presence of these minorities on other issues that accounts for differences in which issue these minorities appear on across districts. Finally, it is also difficult to know on which issues a particular candidate would be willing to trade.

One way to approximate this concept is with a measure of how important the issue of interest, education, is relative to other issues. The more dominant the issue of

education is in the district, according to our available measures, the less important other issues are. The less dominant the issue of education, the more likely it is there are other relevant issues. This approximation, however, requires us to make two assumptions. First, we need to assume that if education is only one of many issues important in the district, that at least one of the other important issues also has an intense preference minority. I present some evidence for this assumption. Second, we need to assume that the other issue(s) on which there is an intense preference minority is also an issue on which the legislator wants to make a trade for their preferences. This is more difficult to provide evidence for but, on average, violating this assumption should cause us to underestimate the effect of politically exploitable heterogeneity on candidate divergence, since the lack of a desirable trade should cause less divergence, not more. With these guidelines for measurement, I now discuss the two measures I propose – survey data and individual contributions data – and how these measures match up to these guidelines.

5.2 National Survey Data

My first measure is based on national survey data. Using survey data is a standard way to measure attitudes in the district (Clinton 2006), second only to demographic statistics. An advantage of surveys over demographic statistics is they include questions that cover a broad array of issue areas without having to assume that the relationship between demographics and issue positions is constant across Congressional districts. However, there are disadvantages to using survey data to measure district-level attitudes, which I discuss more thoroughly below. For my purposes, I use the American National Election Surveys (ANES) because they cover the time period with which I am concerned

(1992-1998), have position questions on multiple issue areas, and have a question about issue priorities. The ANES cover 117 Congressional districts between 1992 and 1998 with 10 or more respondents (Achen 1978).

5.2.1 Measuring the Presence of Intense Preference Minorities on Education

As discussed above, the presence of an intense preference minority on the issue of education is measured by the correlation between prioritizing the issue of education and preference on the issue of education. To measure issue priority, I used the most important national issue question in the ANES. The question first asks respondents to name the most important problems the country faces and allows them to give multiple answers. Respondents are then asked of the issues they mentioned, what is the “single most important problem the country faces” (ANES). Responses to this last question are the ones I used to measure which issue is most important to respondents. If a respondent names education as the single most important issue, they are likely to prioritize that issue when assessing a candidate for national office. The priority questions are coded as dummy variables, with 0 representing the respondent did not mention the particular issue as their most important issue and 1 representing the respondent did mention the issue. Respondents who said “don’t know” to the most important issue question are excluded.

Next we need a measure of respondents’ positions on the issues. Using the coding of the most important issue question available from the ANES, I matched attitude questions to the issue areas mentioned by respondents. Appendix A has a full list of which important issue codes were matched to which position questions. The issues covered are health care, social welfare spending, education, regulating the environment,

race, crime, and abortion. The two most popular issues on this list were social welfare and crime. The position questions are coded from 0 to 1, with 1 representing the more liberal position on the issue. As with the priority question, I excluded “don’t know” responses.

Now that we have measured priority and position, we need to get a measure of the correlation between these two components in each district. To do this, I estimated the correlation between the priority on an issue and the position on an issue for each issue in each of the 117 Congressional districts in the ANES between 1992 and 1998 with an n-size greater than 10. Higher absolute values of the correlations indicate the presence of intense preference minorities who prioritize an issue and have a specific policy position on the issue.

A key decision was whether to use the absolute value of the correlation or the signed correlation. The absolute value of the correlation of preference and priority indicates that there is an intense preference minority in the district, regardless of whether that minority prefers the conservative or liberal position on the issue. This correlation indicates the possibility of cycling, meaning the possibility that there is flexibility in the district to form different election coalitions. The signed correlation, running from negative correlations to positive correlations, indicates the direction of the preference of the minority. Positive correlations indicate the preference minority prefers the liberal position on the issue, and negative correlations, the conservative position. The directional correlation indicates the direction in which cycling will occur. If there is an intense preference minority that prefers greater spending on education, it is unlikely the candidates in the district will cycle to a position of lower spending on education.

Since the direction of the gender gap in Congress is women in favor of greater public spending on education, I wanted a measure of areas where there was a possibility for cycling in the direction of greater education spending. In these areas, men would place themselves at the median voter on education spending, while women would move in the direction of the preference minority. However, I also wanted a measure of areas where there was a possibility for cycling in the direction of less education spending. In these areas, women would place themselves at the median voter on education spending and men would move in the direction of the preference minority. Either way, either because women were moving away from the median voter or because men were, there should be a gender gap in Congressional voting. To measure this possibility, I took the absolute value of the correlation on all issues. The higher the value of these correlations, the more likely there is an intense preference minority in the district willing to trade positions on other issues for their ideal position on the issue they care about, and the greater the possibility of cycling.

5.2.2 Measuring the Presence of Other Important Issues

To measure whether the issue of education is the only important issue in the district, not important at all, or just one of many issues, I use the most important issue question. As discussed earlier, the ideal measure would capture whether there are intense preference minorities on more than one issue in the district. However, without an adequate measure of the presence of these groups on each issue, we need to approximate this ideal by measuring the relative importance of education within the district. To do so, I used the proportion of most important responses that mentioned education.

When this proportion approaches one there will be less candidate divergence because education is the only important issue in the district and there will be no other issues on which to trade. When this proportion approaches zero there will be greater candidate divergence because education is unimportant in the district and legislators will have the freedom to vote as they please. In the middle range of this proportion, education is an important issue, but only one of many. In this situation, the presence of an intense preference minority will determine whether the legislator has freedom in their voting. If there is not an intense preference minority, there is no one willing to trade on the issue and legislators will move towards the median voter. If there is an intense preference minority, there is someone willing to trade on the issue and legislators will have more freedom.

As mentioned earlier, using this approach to measure the number of important issues in the district assumes that if education is only one issue among many in the district, then there is likely to be an intense preference minority on one of the other issues. This is a key assumption. One way to assess whether this assumption is feasible is to look at my measure of the correlation between priorities and preferences on other issues. If on other issues the correlation is usually low, then we should doubt this assumption. However, if there are multiple districts with at least one other high correlation on another issue, then we can have more confidence in this assumption. In the data, I have correlations between the most important issue question and attitude positions on the issues of health care, social welfare/government spending, abortion, the environment, and race. In general, the correlations for these variables range from 0 to a high of .8 on the issue of social welfare spending. The means range from .03 on the

environment to .19 on health care. At least on the issue of health care or social welfare spending, there is likely to be an intense preference minority. The mean correlation on these issues is .18 and .16, respectively, in districts where education is also an important issue. Both of these issues are important issues in all of the districts where education is also important. This data provides some evidence for the assumption that when education is only one of many important issues, there is likely to be an intense preference minority on another issue.

5.2.3 Validity

While the survey measures described above appear to have good face validity, another way to assess the quality of a measure is to analyze its predictive validity. A key theoretical correlate of politically exploitable heterogeneity is a competitive district. While politically exploitable heterogeneity allows a legislator more flexibility in how she represents her district, it also creates an opportunity for an opponent to form an alternative winning coalition of interests in the district. This opportunity should mean these types of districts are more competitive than other districts. In districts where there is not politically exploitable heterogeneity there are no other winning coalitions available, so as long as the incumbent keeps her coalition happy, there is little opportunity for an opponent to challenge the incumbent.

The simplest way to measure competition is to look at the actual vote total in the district. The closer the margin between the two opposing candidates, the more competitive the district was. As a first cut at assessing the predictive validity of the survey measures, I regressed actual vote margin in the district on the level of correlation

on the issue of education for districts where education is neither the only important issue nor an unimportant issue between 1992 and 1998. The results of this regression are in the first column of table 5.1.

Table 5.1 Predictive Validity of Survey Measure

	Survey Data 1	Survey Data 2
Bias	.013 (.105)	.027 (.127)
Incumbent	--	-.154** (.053)
R2	0	.04
N	284	213

Note: ^ p < .1 * p < .05 ** p < .01

There is a modest positive effect of a correlation on education on competition in the district. Obviously, this is an overly simplified model of competition, though this should be where the effect shows up strongest. However, other aspects of a district can drive down competition. One such aspect is the presence of an incumbent. Incumbents have the opportunity to appeal to constituents through constituency service in a way that has nothing to do with their issue positions. This opportunity can temper the effect of other aspects of the district on level of competition. When we include a variable controlling for the presence of an incumbent, the effect of correlation on education does not change. For this second analysis, I had to exclude 1992 because the elections that year were after a major redistricting and it is difficult to identify incumbents. The results of this estimation are in the second column of table 5.1.

This poor showing of the survey measure on predictive validity is discouraging for this measure. It means one of two things. One possibility is the theory is incorrect and politically exploitable heterogeneity, as I have defined it, does not lead to greater

competition, though we have strong reasons to believe it should. The second possibility is the measure is a poor approximation of the theoretical concept.

5.2.4 Advantages and Disadvantages

One major advantage of using national survey data is the face validity of the measure. The ideal measure was one that captured both constituents' priorities over issues and positions on issues. The survey does capture those two concepts. However, the weak predictive validity of the measure is a cause for alarm. In addition, there are multiple problems with the ANES survey as a measure of district attitudes besides the obvious caveat that any survey measures of priorities and positions measure these aspects of attitudes with error.

The first set of problems with using the ANES is the sample of respondents. We have a small number of non-random Congressional districts, a small number of respondents in most districts, and respondents that are not randomly sampled within the Congressional district. The included districts tend to be more urban and demographically heterogeneous, which may lead to higher levels of politically exploitable heterogeneity and therefore capture less of the actual variation in the concept. In addition, without large samples in each district, we will not have very precise estimates of the actual position/preference correlation in the district. Finally, non-random samples within each Congressional district mean we cannot make good estimates about the precision of our estimates.

The second problem is less serious but still important. The question about which issue is most important does not match directly to the questions about the respondent's

position on an issue. There is only one year in this time period, 1996, that includes questions about priority and position that are worded similarly about the exact same issue. However, these questions that map priorities and position with the same question wording do not allow us to identify which question is “most important” to the respondent. In matching preference questions to priorities named in the “most important” question, we run the risk of misinterpreting the preference of respondents on their issue priorities. For example, an attitude question on government spending on goods and services may not bring to mind the issue of the government’s budget deficit (a common concern listed as a most important issue in the early 1990’s).

Besides not asking importance questions in the same format as the preference questions, we also do not have preference questions on every issue that respondents mention as important. For example, the most important issue between 1992 and 1998 was the economy, with 16 percent of respondents saying it was the most important issue. However, we have no consistent measure of preferences on economic policy across the time period. Even if we believe that we can identify the universe of important issues in the district, the missing preference questions prevent us from measuring the presence of an intense preference minority on each issue.

5.3 Individual Contributions Data

The second measure I use is individuals in the districts’ contributions to political action committees (PACs). PACs are committees, either connected to organizations such as a corporation or labor union or not, that contribute money to candidates and parties to further their cause, whether it is ideological, such as in the case of the National Rifle

Association, or the interests of their organization, such as the issue of trade policy for labor unions. Individuals who contribute money to political causes tend to be more politically aware, interested, and active (Grant and Rudolph 2002). How these individuals pick which PAC to donate money to is most likely influenced by whether they support the PAC's particular issue or cause. If so, knowing which PACs receive money in a district, we then have a measure of which issues the district is active on and cares about. An important note on the influence of this active citizenry who contributes to PACs is that not only do contributions as a measure of attitudes appear to be valid, legislators are more likely to register the policy demands of those who contribute (Miler 2007).

To gather data on contributions within the district, I used data from the Federal Election Commission (FEC) on individual contributions of \$200 or more to non-party qualified committees for 1992 and 1998. In the FEC data, individuals must identify their zip code. To get a measure of contributions by Congressional district, I matched contributors' zip codes to the appropriate Congressional district (Missouri Census Data Center). This geographic matching data was only available for 1992 and 1998 and the analysis using this measure is therefore restricted to these two years.

The relationship between zip codes and Congressional districts unfortunately is not one to one. While 70 percent of contributors live in a zip code entirely encompassed in one congressional district, another 30 percent of contributors live in a zip code that overlaps two congressional districts. To account for this overlap, I created two measures – one measure that excludes individuals from zip codes that overlap two districts and a second measure with the contributions in these overlapping zip codes weighted by the proportion of population in the zip code in each Congressional district. For the analyses I

use the weighted data but check the results for robustness with the data that excludes the overlapping zip codes.

5.3.1 Measuring the Presence of Intense Preference Minorities on Education

As before, to measure the presence of intense preference minorities, we need to know which issues are important and the positions of constituents on those issues. To identify the issues that are important, I coded the issues the PACs advocate on using the industry coding by the Center for Responsive Politics. The CRP codes the industry of each PAC in three detailed levels. First, they code the PACs into 13 sectors, which identifies whether the PAC advocates on behalf of a particular business area, a labor union, an ideological/single issue, or other. The next two levels provide more detailed explanation of the PAC's issue area. For example, the National Rifle Association is coded as 1. Ideological/Single Issue, 2. Gun Rights, 3. Pro-Gun. I used this coding to identify which PACs would advocate on the issue area of education. The list of industries coded as advocating on education is included in Appendix B.

After identifying the PACs that advocate on education, I calculated the proportion of contributions, both by the number of contributions and the total amount of contributions, that were given by individuals within each district. The higher this proportion, the more constituents within the district that are concerned about the issue of education. Theoretically, if this proportion approached 1, then education would be the only issue of importance in the district. If the proportion is 0, then constituents within the district are relatively unconcerned about the issue of education.

The second aspect of measuring the presence of intense preference minorities is measuring the distribution of preferences on the issue. We want to know whether those who are interested in the issue of education in the district also have a particular preference on the issue. To assess this, I created a measure of bias in the district on the issue of education. First, I created a measure of the ideology of the PACs to which individuals donated money. To get the ideology of the PACs, I used FEC data on which candidates the PACs gave money to in a given election cycle and calculated the percentage of the PAC's money given to Democratic candidates as an indication of the PAC's ideology. On its face, it appears to be a good measure. For example, labor PACs gave over 85 percent of their money to Democratic candidates. I then folded this measure in half so that PACs that gave half of their money to Democrats and half to Republicans were considered unbiased, at 0, and PACs that gave all of their money only to Democrats or only to Republicans were considered highly biased at .5. I then created an average of the bias across the PACs that received contributions in the issue area in the district, weighted by the share of the number (or amount) of contributions to the PAC. Table 5.2 provides a stylized example of how I calculated the bias measure.

Table 5.2 Calculating the Bias Measure

District	Issue	PAC	%Bias	# Contributions	%Bias*#	Bias Measure
1	Education	A	.5	5	2.5	
1	Education	B	.4	3	1.2	
1	Education	C	.1	2	.2	
Total				10	3.9	.39
2	Education	A	.5	2	1	
2	Education	B	.4	2	.8	
2	Education	C	.1	6	.6	
Total				10	2.4	.24

The higher the bias measure in a district on the issue of education, the more correlated priorities and preferences are on the issue in the district. When the proportion of contributions on education is greater than zero and the bias measure in the district on education is high, we should have an intense preference minority on the issue of education in the district.

5.3.2 Measuring the Presence of Other Important Issues

As with the survey measure, I used the proportion of contributions in the district that are given to education PACs as an indication of the relative importance of the issue of education in the district. Also as before, using this measure we need to assume that at least on some of the other issues that are important in the district there is an intense preference minority. To provide evidence for this assumption, I calculated the bias measure described above for other issue areas identified by the industry coding from the CRP. The mean level of bias for other issue areas when education is one of many issues important in the district is .22 on a scale of 0 to .5 in 1992 and .26 in 1998. As with the survey data, this indicates that when education is one of multiple important issues, there is likely to be an intense preference minority on one of the other issues.

5.3.3 Validity

As with the survey measure, I test the predictive validity of the individual contributions measure by estimating the relationship between the bias measure and competition in the district. The contributions measure performs better than the survey measure. In the first and third columns of table 5.3 are the results of regressing actual

vote margin in the district on the level of bias on the issue of education for districts where education is neither the only important issue nor an unimportant issue for 1992 and 1998. For both versions of the measure (based on the amount of contributions versus the number of contributions), there is a significant positive effect of a bias on education on competition in the district. I also estimated the effect of bias when we include the variable indicating the presence of an incumbent. For this second analysis, I had to exclude 1992, which reduces the analysis to just 1998. The results of this estimation are in the second and fourth columns of table 5.3. The effect of the bias is less statistically significant than before but still positive.

Table 5.3 Predictive Validity of Contributions Measure

	Number Contrib. Data 1	Number Contrib. Data 2	Amount Contrib. Data 1	Amount Contrib. Data 2
Bias	.193* (.093)	.199^ (.119)	.163^ (.090)	.156 (.114)
Incumbent	--	-.301** (.073)	--	-.302** (.073)
R2	.01	.07	.01	.07
N	466	253	466	253

Note: ^ p < .1 * p < .05 ** p < .01

5.3.4 Advantages and Disadvantages

There are multiple advantages to the individual contributions measure. First, the measure is available for all Congressional districts within a given year. Second, the measure appears, on its face, to be a good direct measure of constituent concern about an issue. It is highly likely that those who contribute to PACs that advocate on the issue of education care very much about the issue of education. Finally, unlike the survey measure, the individual contributions measure performs relatively well in the predictive

validity test. We have a modestly strong relationship between bias on education and competition in the district.

There is one significant problem with a measure based on monetary contributions. Individual income directly affects whether someone contributes and indirectly affects who contributes by affecting who is solicited for contributions (Grant and Rudolph 2002). In poorer communities, we may have active and intense preference minorities that are not captured by my measure. In the next chapter, I try to account for this bias in the measure by controlling for median income in the district in my analyses. Importantly, this problem with the measure should affect our estimates by depressing the effect of politically exploitable heterogeneity (PEH), since those poorer districts with high levels of PEH will be lumped together with richer districts that have low levels of PEH, instead of exaggerating the effect.

5.4 Conclusion

In this chapter I discussed two ways of measuring politically exploitable heterogeneity. Each measure has advantages and disadvantages and by using both measures we can be more confident in the results. The next chapter tests the effect of politically exploitable heterogeneity on legislator divergence using these two measures.

Appendix A

Policy Questions and Important Issue Codes

Issue	Policy Question (ANES CDF)	Important Issue Codes (ANES CDF Appendix)
Health	<p>VCF0806: “There is much concern about the rapid rise in medical and hospital costs. Some people feel there should be a government insurance plan which would cover all medical and hospital expenses for everyone. (1996: Suppose these people are at one end of a scale, at point 1). Others feel that (1994-1996: all) medical expenses should be paid by individuals, and through private insurance plans like Blue Cross (1984-1994: or [1996:some] other company paid plans). (1996: Suppose these people are at the other end, at point 7. And of course, some people have opinions somewhere in between at points 2,3,4,5 or 6.) Where would you place yourself on this scale, or haven't you thought much about this?”</p>	<p>40: HEALTH PROBLEMS/COST OF MEDICAL CARE; quality of medical care; medical research/training of doctors and other health personnel; hospitals; National Health insurance program</p>

Soc. Welf 1	<p>VCF0839: “Some people think the government should provide fewer services, even in areas such as health and education, in order to reduce spending. Other people feel that it is important for the government to provide many more services even if it means an increase in spending. Where would you place yourself on this scale, or haven't you thought much about this?”</p> <p>VCF9046: “If you had a say in making up the federal budget this year, for which programs would you like to see spending increased and for which would you like to see spending decreased: Should federal spending on [ITEM] be increased, decreased or kept about the same?” “Food stamps”</p> <p>VCF0886: federal spending “poor/poor people”</p> <p>VCF0893: federal spending “the homeless”</p> <p>VCF0894: federal spending “welfare programs”</p> <p>VCF9049: federal spending “social security”</p>	<p>60: POVERTY; aid to the poor/underprivileged people; help for the (truly) needy; welfare programs (such as ADC); general reference to anti-poverty programs; hunger/help for hungry people in the U.S.</p> <p>90: SOCIAL WELFARE PROBLEMS; "welfare"--NFS</p> <p>415: AGAINST (increased) government spending; balancing of the (national) budget; against government stimulation of the economy; the size of the budget deficit</p> <p>30: AGED/ELDERLY; social security benefits; administration of social security; medical care for the aged; medicare benefits; insuring against catastrophic illness</p> <p>92: Against general or other social welfare programs; "too many give away programs for the people who don't deserve it"</p> <p>6: DAY CARE; child care</p> <p>35: Social Security won't be around in the future; paying into a system which won't benefit me/them</p> <p>91: For general or other social welfare programs; "we need to help people more"</p>
Soc. Welf 2	Same as above	Same as above, excluding code 415
Education	<p>VCF0890: federal spending “public schools”</p> <p>VCF0891: federal spending “financial aid for college students”</p>	<p>20: EDUCATION; financial assistance for schools/colleges/students; quality of education/the learning environment/teaching</p>

Abortion	<p>VCF0838: “There has been some discussion about abortion during recent years. Which one of the opinions on this page best agrees with your view? You can just tell me the number of the opinion you choose. 1. By law, abortion should never be permitted. 2. The law should permit abortion only in case of rape, incest, or when the woman's life is in danger. 3. The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been clearly established. 4. By law, a woman should always be able to obtain an abortion as a matter of personal choice.”</p>	<p>45: PRO-ABORTION; pro-choice; the right of a woman to control her body 46: ANTI-ABORTION; pro-life; "abortion"--NFS</p>
Environment	<p>VCF9047: federal spending “improving and protecting the environment” VCF0842: “Some people think we need much tougher government regulations on business in order to protect the environment. (Suppose these people are at one end of a scale, at point 1.) Other think that current regulations to protect the environment are already too much of a burden on business. (Suppose these people are at the other end of the scale, at point 7.) And, of course, some other people have opinions somewhere in between, at points 2,3,4,5 or 6. Where would you place yourself on this scale, or haven't you thought much about this?”</p>	<p>151: Controlling/REGULATING GROWTH or land development; banning further growth/development in crowded or ecologically sensitive areas; preserving natural areas 153: POLLUTION; clean air/water 154: Disposal of RADIOACTIVE/TOXIC waste (dumps, landfills) 160: DEVELOPMENT OF NATURAL RESOURCES /ENERGY SOURCES; harbors, dams, canals, irrigation, flood control, navigation, reclamation; location, mining, stock-piling of minerals; water power, atomic power; development of alternative sources of energy (includes mentions of solar or nuclear power) 150: CONSERVATION OF NATURAL RESOURCES; conservation, ecology; protecting the environment/endangered species</p>

Crime	VCF0888: federal spending “dealing with crime”	340: CRIME/VIOLENCE; too much crime; streets aren't safe; mugging, murder, shoplifting; drug related crime 320: NARCOTICS; availability of drugs; extent of drug/alcohol addiction in the U.S.; interdiction of drugs coming to the U.S. from foreign countries; alcohol or drug related crime 360: LAW AND ORDER; respect for the law/police; support for the police; death penalty; tougher sentences for criminals; need for more prisons
Race	VCF0830: “Some people feel that the government in Washington should make every (prior to 1996 only: possible) effort to improve the social and economic position of blacks. (1996-LATER: Suppose these people are at one end of a scale, at point 1). Others feel that the government should not make any special effort to help blacks because they should help themselves. (1996-LATER: Suppose these people are at the other end, at point 7. And, of course, some other people have opinions somewhere in between, at points 2,3,4,5 or 6). Where would you place yourself on this scale, or haven't you thought much about it?” VCF9050: federal spending “programs that assist blacks”	300: CIVIL RIGHTS/RACIAL PROBLEMS; programs to enable Blacks to gain social/economic/educational/political equality; relations between Blacks and whites 304: Discrimination against whites; preferred treatment given to minorities 302: PROTECTION (expansion) OF WHITE MAJORITY; maintenance of segregation; right to choose own neighborhood; right to discriminate in employment

Appendix B

List of Industry Codes for Education Political Action Committees

1st Category: Industry	2nd Category: Sector	3rd Category: Catname
Education	Other	Education
Education	Other	Law schools
Education	Other	Medical schools
Education	Other	Public school teachers, administrators & officials
Education	Other	Schools & colleges
Education	Other	Technical, business and vocational schools & svcs
Public Sector Unions	Labor	Teachers unions

Chapter 6

Empirical Results: Politically Exploitable Heterogeneity and Legislator Divergence

In this chapter, I present the results from testing the effect of politically exploitable heterogeneity (PEH) on the gender difference in Congress using two separate measures of PEH. I find that PEH does not affect the gender gap in the way I expected. Instead, when an issue is important and the interested constituency is biased in their opinion on the issue, the gender gap disappears. In addition, the results are impressively consistent across the two measures. The chapter is organized as follows. First, I discuss the model and method I use to estimate the effect of PEH. Second, I present the results for the survey data measure of PEH. Third, I present the results for the measure that relies on individual contributions to political action committees. Finally, I conclude with a discussion of the results, suggesting reasons why PEH, as measured and construed here, had the opposite result than expected.

6.1 Model and Estimation

To estimate the impact of politically exploitable heterogeneity on the gender gap in Congress, I use the scale of education votes I first introduced in Chapter 2. As discussed earlier, I chose to look at education because I find a persistent gender difference in attitudes on the issue. The voting scale I use in this chapter are the votes rated by the National Education Association, the American Association of University Women, and the Americans for Democratic Action. The scale runs from zero to one. One

indicates a vote with the interest groups on all bills. Given the platforms of these interest groups, high values on this vote scale indicate a more liberal position on education, including greater support for more funding for public education.

The key independent variables are the representative's gender, the relative importance of education in the district, and the bias of interested constituents' attitudes on education in the district. The gender variable is a dummy variable, where 1 represents a woman. The importance and bias variables were described in great detail in the last chapter. Both variables for the survey data and the importance variable for the contributions data theoretically run from 0 to 1, however in the dataset they are much more truncated. For the survey data, the bias variable runs from 0 to .58, where this is the correlation between whether respondents name education as the nation's most important issue and respondents' position on the education scale. The importance variable runs from 0 to .35. This is the percentage of respondents in the district who named education as the nation's most important issue. For the contributions data, the importance variable runs from 0 to .29. This is the percentage of contributions in the district given to education political action committees. While the importance variable runs to .29, it is highly skewed towards 0. The mean is .01 and the median is .0002. The bias variable from the contributions data runs from .02 and .5. This is the folded percentage of contributions that education PACs in the district gave to one political party weighted by the number (or amount) of contributions each PAC received in the district. A 0 would mean that the education PACs gave equally to Republican and Democratic candidates. A .5 means that the PACs gave all of their money to one party only.

The control variables are the representative's party, the district's liberalness, the representative's seniority, and congressional dummies. The party variable is for whether the legislator is a Republican (1) or not (0). For constituency attitudes, I use the estimated constituency attitude using the relationships between demographics and attitudes from the NES and census data from the district. The measure runs from 0 to 1. A 1 indicates a more liberal district. Representative's seniority is measured by the number of years the member has been in Congress. This runs from 0 to 48. The congressional dummies are dummy indicators for each Congress, with the 103rd Congress as the excluded category.

In addition to these controls, I also include the median income in the district for the estimations using the contributions data measures. As discussed in the last chapter, personal income is both directly and indirectly related to whether someone contributes to a political cause. Because of this relationship, I control for median income to account for the fact that poorer districts with higher PEH may not be included in these measures.

Ideally, I would like to estimate a full three-term interaction model with the sex variable, the issue importance variable, and the issue bias variable included. There are two reasons this full model cannot be fully estimated with my data. First, the small number of female representatives in my dataset means that at any intersection of the importance and bias variable, there are very few observations to estimate the gender gap. In fact, at many combinations of the importance and bias variables there are no women. Second, given the way I measured bias in the district, we have no estimate of bias in districts where the issue of education is unimportant. Once the measure of bias is included in the model, because this measure is missing for districts where no one cares about education, we have a smaller number of women in the sample. For example, for the

survey data, we have 62 women in the sample of districts for which we have the issue importance measure, but only 41 women in the sample that has both the importance and bias measure. There is a similar drop-off for the contributions data – 103 women and 80 women, respectively.

For these reasons, I begin each section of the results by estimating the effect of issue importance and issue bias on the gender gap in Congress separately. However, I also estimate the full three-term interaction model as well. For all versions of the model, I estimate the model using standard OLS. The three models are as follows.

$$\text{Eq.1} \quad Ed = \beta_0 + \beta_1 \textit{Female} + \beta_2 \textit{Impt} + \beta_3 \textit{Fem} * \textit{Impt} + \beta_n \textit{Controls} + \varepsilon$$

Ed is the scale of NEA/AAUW/ADA rated education bills. *Female* is the legislator's sex. *Impt* is the issue importance in the district. *Fem*Impt* is the interaction between legislator's sex and issue importance in the district. As noted above, the controls are party, district liberalness, seniority, and the congressional term dummies. I expect the effect of female when the issue of education is completely unimportant (β_1) to be positive because women are more likely to support greater public spending on education than men. Traditionally, we expect that as an issue rises in importance in the district, legislators should be more beholden to their constituency (Kingdon). Therefore, we should expect the effect of issue importance on the gender gap (β_3) to be negative because as the issue of education becomes more important, men and women from similar districts will be less likely to vote differently from each other. However, as I argued in Chapter 3, the level of bias in the district should modify this relationship, and therefore I expect β_3 to not be significant.

$$\text{Eq 2} \quad Ed = \beta_0 + \beta_1 \textit{Female} + \beta_2 \textit{Bias} + \beta_3 \textit{Fem} * \textit{Bias} + \beta_n \textit{Controls} + \varepsilon$$

In equation 2, *Bias* represents the level of bias on the issue of education in the district. *Fem*Bias* is the interaction of representatives' gender and bias in the district. Because the measure of bias only exists when education is an issue people in the district care about, the number of districts used to estimate this model will be smaller than in the model with just importance. When bias is low, the effect of gender (β_1) should be zero. This is because when the issue of education is important but there is no intense preference minority on the issue, the legislator cannot create a different coalition from someone else on the issue of education. As bias in the district on education increases, the effect on the gender gap (β_3) should be positive, as the presence of bias indicates the presence of an intense preference minority available for a legislator to make a unique election coalition on the issue of education.

$$\text{Eq. 3 } Ed = \beta_0 + \beta_1 \textit{Female} + \beta_2 \textit{Impt} + \beta_3 \textit{Bias} + \beta_4 \textit{Impt} * \textit{Bias} + \beta_5 \textit{Fem} * \textit{Impt} \\ + \beta_6 \textit{Fem} * \textit{Bias} + \beta_7 \textit{Fem} * \textit{Impt} * \textit{Bias} + \beta_n \textit{Controls} + \varepsilon$$

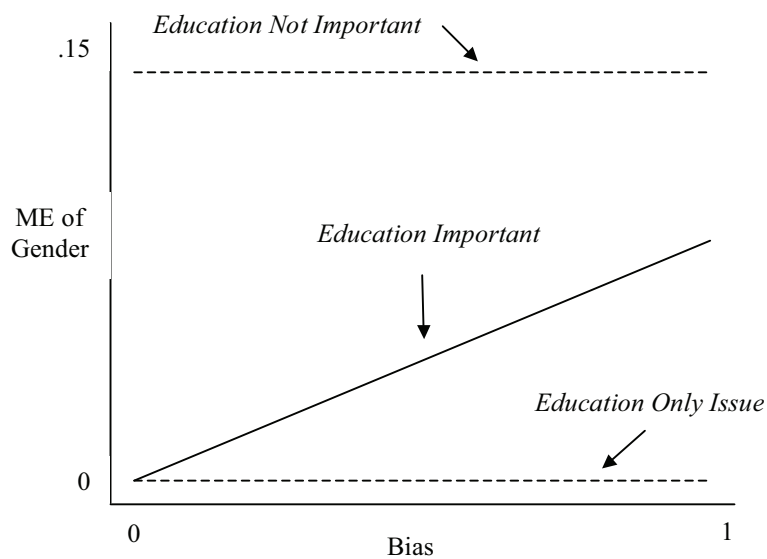
As before, because the bias measure is included in this model, the model is estimated only for districts where the issue of education is important. β_1 represents the effect of gender when the importance of education and bias is low in the district. Because the district does not care about the issue of education, I expect there to be a large gender difference. β_1 should be positive and significant. β_2 is the effect of the importance of education on voting for men when bias in the district is low. The importance of education should not affect the position of legislators and therefore β_2 should be zero. β_3 is the effect of bias in the district on voting for men when issue importance is low. Again, the bias in the district (since it is not directional but absolute) should not affect the position of legislators and therefore β_3 should also be zero. Increasing either bias or importance

should have no effect on the position of legislators and therefore β_4 should also be zero. β_5 represents the effect of issue importance on the gender gap in Congress when bias in the district is low. As issue importance increases we should see a smaller gender gap, on average. β_5 should be negative. β_6 is the effect of bias on the gender gap when the issue of education is unimportant. Bias should not make a difference in these districts because education is relatively unimportant and the gender gap should remain large. β_6 should also be zero. Finally, β_7 is the effect on the gender gap of both increasing bias in the district and the importance of education. I expect that when the district cares about education and bias increases the gender gap should get larger, as these districts allow legislators to take advantage of an intense preference minority on the issue education to pursue their own policy preferences on education. β_7 should be positive and significant.

Many of these expectations also lead us to a prediction about the combination of some of the important estimated effects. First, the gender gap on the issue of education should decrease as the importance of education increases while bias is low. This effect is represented by the combination of β_1 and β_5 . I expect $\beta_1 + \beta_5$ to be smaller than β_1 . Second, the gender gap on the issue of education as bias increases when education is unimportant is represented by the combination of β_1 and β_6 . Because I expect bias to be irrelevant when the issue of education is relatively unimportant, β_1 plus β_6 should be approximately equal to β_1 . Finally, I expect that the gender gap will increase as bias increases and the issue of education is important. This situation is represented by the combination of β_1 , β_5 , β_6 , and β_7 . The sum of these four estimated effects when bias and importance are high should be larger than β_1 . These expectations are represented in the graph below. The graph is the effect of bias on the marginal effect of gender for three

levels of issue importance. The line for when education is not important is dotted because I do not have a measure of bias when education is unimportant. The marginal effect of gender decreases as education becomes more important. When education is the only issue in the district, there should be no gender gap. However, because this situation does not occur in the data, this line is also dotted. The key to testing the theory is the middle line where education is important, though not the only issue. Here, an increase in bias should increase the gender gap.

Figure 6.1 Expectations Graph



6.2 Results with Survey Data

In this section I present the results of the effect of politically exploitable heterogeneity on the gender gap in Congress using my measure based on survey data. First, I estimate the model with just issue importance. Second, I estimate the model with just issue bias. Finally, I estimate the model with the full three-term interaction.

6.2.1 Model with Issue Importance

The results of the interaction of gender and issue importance are in the first column of table 6.1 below.

Table 6.1 Effect of Politically Exploitable Heterogeneity with Survey Data

	Issue Importance	Issue Bias	Full Three-Term
Female	0.079 [^] (0.042)	0.217** (0.051)	0.307** (0.111)
Importance	-0.111 (0.147)	--	0.186 (0.273)
Bias	--	0.059 (0.096)	0.121 (0.186)
Impt*Bias	--	--	-0.480 (1.015)
Fem*Impt	-0.250 (0.498)	--	-1.100 (1.281)
Fem*Bias	--	-0.807** (0.274)	-1.061 [^] (0.590)
Fem*Impt*Bias	--	--	2.723 (3.724)
Republican	-0.724** (0.020)	-0.740** (0.025)	-0.739** (0.025)
District Liberalness	0.259 (0.301)	-0.190 (0.400)	-0.218 (0.409)
Seniority	0.002 (0.001)	0.002 (0.002)	0.002 (0.002)
104 th Congress	-0.068* (0.032)	-0.098* (0.041)	-0.100* (0.042)
105 th Congress	-0.152** (0.028)	-0.133** (0.035)	-0.135** (0.036)
106 th Congress	-0.174** (0.027)	-0.167** (0.034)	-0.166** (0.034)
Constant	0.853** (0.148)	1.043** (0.200)	1.036** (0.203)
R ²	0.777	0.794	0.795
N	471	285	285

Note: [^] p < .1 * p < .05 ** p < .01

As discussed above, we expect β_1 (the effect of sex) to be positive and the effect on the interaction of sex and issue importance (β_3) to be negative, though insignificant. This expectation is borne out in the table. The effect of gender when the issue of education is unimportant (β_1) is positive and very close to significance. The effect of issue importance on the gender gap (β_3) is also in the expected direction – negative – and statistically insignificant, though may be substantively significant. Because the distribution of issue importance is so truncated, it is helpful to look at a table of predicted values for the mean and one standard deviation above and below the mean of importance. These values are in table 6.2 below.

Table 6.2 Predicted Values for Issue Importance Model for Survey Data

Level of Importance	Predicted for Men	Predicted for Women	Difference: Women-Men
-1 SD: 0	0.26	0.34	0.08
Mean: 0.06	0.25	0.32	0.07
+1 SD: 0.13	0.24	0.29	0.05
Difference: +1SD - -1SD			-0.03

As importance increases the gender gap decreases almost by half – from .08 on a 0 to 1 scale to .05. While increasing importance does not cause the gender gap to disappear, it does have a substantively important effect on the magnitude of the gap.

6.2.2 Model with Issue Bias

The results of the model with sex and issue bias interacted is in the second column of table 6.1. To reiterate, we expect β_1 , the effect of sex when bias is zero, to be zero. With no intense preference minorities on the issue of education, men and women should have similar election coalitions on the issue of education and therefore vote

similarly in Congress. β_3 , on the other hand, should be positive and significant.

Increasing bias should create the opportunity for different election coalitions and increase the gender gap on education. The effects of sex and bias are the opposite of my expectations. When bias is zero, the effect of sex is large and significant. Increasing bias *decreases* the effect of gender on voting, instead of increasing the effect. This change in the gender gap as bias increases is statistically significant. As with issue importance, our measure of bias is truncated. To get a better idea of the magnitude of the effect of bias on the gender gap, I produced predicted values for the mean and one standard deviation above and below the mean of bias in table 6.3.

Table 6.3 Predicted Values for Issue Bias Model for Survey Data

Level of Bias	Predicted for Men	Predicted for Women	Difference: Women-Men
-1 SD: 0.01	0.23	0.44	0.21
Mean: 0.14	0.24	0.34	0.1
+1 SD: 0.27	0.25	0.25	0
Difference: +1SD - -1SD			-0.21

Increasing bias from one standard deviation below the mean to one standard deviation above causes the gender gap in voting to disappear. This is opposite of my predictions for the effect of bias on the gender gap.

6.2.3 Model with Full Three-Term Interactions

At first glance, the full three-term interaction model does not appear to be far from my expectations. The results are in column three of table 6.1. The important expectations were: β_1 (sex) would be positive and significant, β_5 (sex interacted with importance) would be negative, β_6 (sex interacted with bias) would be zero, and β_7 (the

full three term interaction) would be positive and significant. The results show that β_1 is positive and significant, β_5 is negative, and β_7 is positive, though not significant. The real difference is that β_6 is negative and very close to statistically significant. This is key for assessing the theory. Earlier, I pointed out that the effect of sex when bias is high and education is important should be higher than the effect of sex when bias is low and education is less important. The effect of sex in the three-term interaction model is:

$$\beta_1 + \beta_5 Impt + \beta_6 Bias + \beta_7 Impt * Bias$$

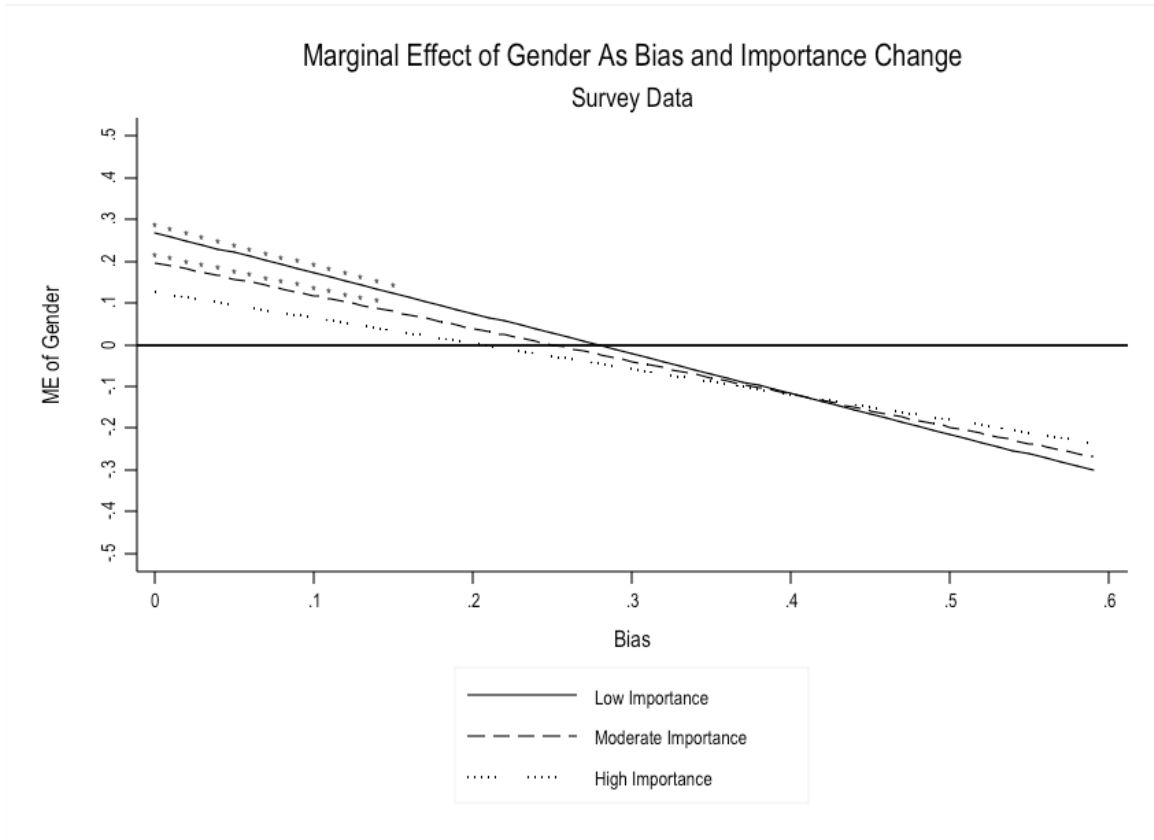
Substituting the estimated effects, we get

$$.31 - 1.10 Impt - 1.06 Bias + 2.72 Impt * Bias$$

Calculating the effect of sex when importance and bias are one standard deviation below the mean (.04 and .01, respectively), we get an effect of sex of .26. This is a large, substantively significant gender gap. When we increase importance and bias to one standard deviation above the mean (.17 and .27, respectively), the effect of sex decreases to -.04. This is a large decrease in the effect of sex and contrary to my expectations.

To further illustrate the full three-term interaction model, I graphed the marginal effect of gender as bias changes for three levels of issue importance – at the mean and one standard deviation below and above the mean. This graph is in figure 6.2. The majority of observations are between .01 and .27 on the bias measure, though the graph includes the full range of the bias measure – 0 to .58. The stars indicate areas where the effect of sex is statistically significant at the .05 level. At low levels of bias, the effect of sex is positive and significant, though it decreases as the importance of education increases. As bias increases, the effect of sex decreases to zero.

Figure 6.2 Marginal Effect of Gender as Bias Changes for Survey Data⁸



6.3 Contributions Data

In this section I present the results of estimating the effect of politically exploitable heterogeneity with the individual contributions measure. As discussed earlier, the models now include median income as a control due to the strong relationship between income and contributions. The results with the contributions data are similar to the results with the survey data, though not exactly the same. While bias as measured with the survey data had a larger effect on the gender gap than issue importance, the opposite is true with the contributions data. Despite this difference, the substantive interpretation of the results is the same.

⁸ The coding for these graphs comes from Brambor, Clark, and Golder (2006).

6.3.1 Model with Issue Importance

The results for the model with the interaction of sex and issue importance are in the first column of table 6.4 below.

Table 6.4 Effect of Politically Exploitable Heterogeneity with Contributions Data

	Issue Importance	Issue Bias	Full Three-Term
Female	0.075** (0.021)	0.090 (0.060)	0.076 (0.073)
Importance	0.032 (0.393)	--	-0.147 (0.684)
Bias	--	0.024 (0.064)	0.024 (0.072)
Impt*Bias	--	--	-0.084 (2.844)
Fem*Impt	-2.064 (1.651)	--	2.354 (9.763)
Fem*Bias	--	-0.053 (0.170)	0.011 (0.195)
Fem*Impt*Bias	--	--	-10.102 (21.990)
Republican	-0.585** (0.013)	-0.582** (0.018)	-0.583** (0.018)
District Liberalness	0.262 (0.189)	0.016 (0.263)	0.003 (0.264)
Seniority	0.002 (0.001)	0.002^ (0.001)	0.002^ (0.001)
Median Income	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)
106 th Congress	-0.176** (0.015)	-0.183** (0.021)	-0.183** (0.021)
Constant	0.885** (0.092)	1.034** (0.136)	1.039** (0.137)
R ²	0.759	0.767	0.768
N	865	464	464

Note: ^ p < .1 * p < .05 ** p < .01

As discussed, I expect the effect of sex (β_1) to be positive and β_3 (the interaction of sex and importance) to be negative though not significant. These expectations are supported by the results, though to assess whether the interaction is substantively significant we need to check the predicted values because the importance variable is very truncated. Below in table 6.5 are the predicted values for the mean and one standard deviation above and below the mean for the issue importance variable.

Table 6.5 Predicted Values for Issue Importance Model for Contributions Data

Level of Importance	Predicted for Men	Predicted for Women	Difference: Women-Men
-1 SD: 0	0.35	0.43	0.08
Mean: 0.01	0.35	0.41	0.06
+1 SD: 0.03	0.35	0.37	0.02
Difference: +1SD - -1SD			-0.06

The effect of increasing importance is substantively significant. Increasing the importance of education from one standard deviation below the mean to one standard deviation above reduces the gender gap to close to zero.

6.3.2 Model with Issue Bias

The results for the model with an interaction between sex and issue bias is in the second column of table 6.4. While I expected β_1 (the effect of sex when bias is zero) to be close to zero and β_3 (the interaction of sex and bias) to be positive, the results are the opposite. The effect of sex when bias is zero is substantively significant and increasing the issue bias decreases the effect of sex on educational voting. These results are very similar to the ones with the survey data. The predicted values for the mean and one standard deviation above and below the mean of bias are below in table 6.6.

Table 6.6 Predicted Values for Issue Bias Model for Contributions Data

Level of Bias	Predicted for Men	Predicted for Women	Difference: Women-Men
-1 SD: 0.19	0.37	0.45	0.08
Mean: 0.34	0.37	0.45	0.08
+1 SD: 0.49	0.38	0.44	0.06
Difference: +1SD - -1SD			-0.02

As we can see from the predicted values, the substantive difference in the gender gap from increasing the issue bias is very small. Increasing the level of bias from one standard deviation below the mean to one standard deviation above the mean decreases the gender gap by only two points. As discussed above, this pattern is opposite the pattern we found with the survey data where the effect of increasing bias in the district had a larger impact on the gender gap than increasing importance in the district. However, both with the contributions data and the survey data, increasing the importance of education in the district and the bias on education in the district decreases the effect of gender on voting, contrary to expectations.

6.3.3 Model with Full Three-Term Interactions

Unlike the full three-term interaction model with the survey data, the full interaction model with the contributions data does not match at all the expectations outlined in the first section of this chapter. The results are in column three of table 6.4. Again, the expectations were: β_1 (sex) would be positive and significant, β_5 (sex interacted with importance) would be negative, β_6 (sex interacted with bias) would be zero, and β_7 (the full three term interaction) would be positive and significant. The results show that β_1 is positive but statistically insignificant, β_5 is positive, and β_7 is

negative. Only β_6 conforms to expectations, with the effect very close to zero. This is unsurprising given the results we just discussed. The effect of sex in the three-term interaction model is:

$$\beta_1 + \beta_5 Impt + \beta_6 Bias + \beta_7 Impt * Bias$$

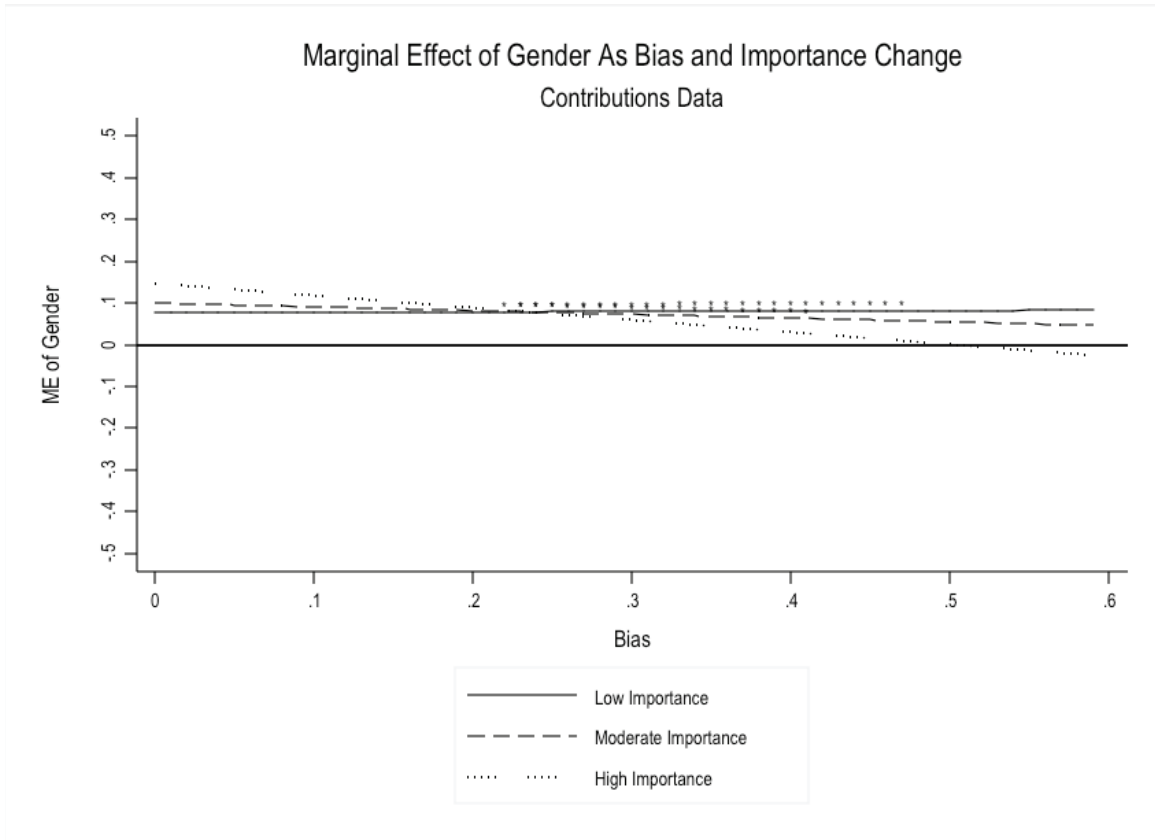
Substituting the estimated effects, we get

$$.08 + 2.35 Impt + .01 Bias - 10.10 Impt * Bias$$

Calculating the effect of sex when importance and bias are one standard deviation below the mean (.000002 and .19, respectively), we get an effect of sex of .08. This is a modest but still substantively significant gender gap. When we increase importance and bias to one standard deviation above the mean (.03 and .49, respectively), the effect of sex decreases to .004. This is a substantively significant decrease in the effect of sex and contrary to my expectations, as we found with the survey data.

To further illustrate the full three-term interaction model, I graphed the marginal effect of gender as bias changes for three levels of issue importance – at the mean and one standard deviation below and above the mean. This graph is in figure 6.3. The majority of observations are between .19 and .49 on the bias measure, though the graph includes the full range of the bias measure – 0 to .5. The stars indicate areas where the effect of sex is statistically significant at the .05 level. At low levels of bias (around .19), the effect of sex is positive and significant, though it decreases slightly as the importance of education increases. As bias increases, the effect of sex decreases to zero, especially for districts where education is more important.

Figure 6.3 Marginal Effect of Gender as Bias Changes for Contributions Data



6.4 Conclusion

While the fact that my results are substantively similar across two very different measures suggests high robustness, I also completed a round of robustness checks on the models. The robustness checks include:

1. using a different measure of district attitudes based on the NES survey question about federal spending for schools,
2. using a different measure of district attitudes that consisted of including census demographic statistics: percent white, percent poverty, percent over 65, percent urban, percent with a college degree, Southern region, Western region

3. because the education scale is clustered at 0 and 1, using a different version of the dependent variable broken into three categories and estimating the models with ordered probit
4. estimating each of the models by year instead of pooling the years
5. excluding the interaction terms that I expect to have no effect because of the large demand the full models place on my data
6. for the survey data models, estimating the models for districts with 20 or more respondents only
7. for the survey data models, including the number of respondents in the district as a control variable
8. for the contributions data models, estimating the models with the measures based on the amount of contributions instead of the number of contributions
9. for the contributions data models, estimating the models with the measures based on zip codes that are fully encompassed in a Congressional district instead of the weighted data

In all, this list of robustness checks led to 10 re-estimations of each model for the survey data and 8 re-estimations of each model for the contributions data. Of these 54 re-estimations, only 2 of the new estimations changed the substantive interpretation of the coefficients – in 1994 for the survey data for the issue importance model and the full three-term interaction model. However, these results are highly suspect because of the small number of observations in 1994 for the survey data. For the issue importance model, the total number of observations is 114 and the number of women is 14. For the

full three-term interaction model, the total number of observations is 69 and the number of women is 10. Because of the small number of observations and the complex nature of these models, I consider these two deviations to be unreliable. For the most part, the results reported in this chapter appear to be very robust.

In addition to these robustness checks, I also checked the models for influential outliers. In the simpler models with just the two-term interactions there were no outliers for either the survey data or the contributions data. However, for the survey data for the full three-term interaction model there were two outliers – Congressional districts 5502 and 5301. These districts were both represented by a Democratic female in one Congress and a Republican male in another. These cases would be the ideal demonstration of politically exploitable heterogeneity. Dropping these outliers did change the estimated coefficients but the substantive interpretation is the same. As bias increases and issue importance increases, the effect of sex decreases. In addition, dropping these two outliers leads to two more districts becoming outliers, and so on. The small number of women in my dataset makes both estimating a full three-term interaction model and dropping outliers perilous (Granato, Ingelhart, Leblang 1996). For the contributions data, the full three-term interaction model had one outlier, though dropping this outlier did not change the results.

If the results are robust, what do they mean? First, they are contrary to my expectations given my theory. According to my results, the presence of intense preference minorities, meaning when an issue is important in the district and constituents who care about the issue have a biased view on the issue, does not increase the gender gap. This could occur for two reasons. First, the theory may be wrong. Intense preference

minorities may not lead to politically exploitable heterogeneity and therefore to larger voting gaps between legislators. While this is a strong possibility, the theory is based on established theoretical results and is compelling. Second, the measurement of the theory may be wrong. Whether or not the theory is correct, this second reason is very likely. The concept of politically exploitable heterogeneity is extremely complex and, while measured here based on one issue, involves complex interactions in the district among issues. In the next chapter I suggest a couple ways to further investigate the concept of politically exploitable heterogeneity as defined in this dissertation.

Finally, in line with the suggestion that the theory of politically exploitable heterogeneity is incorrect, the results in this chapter are impressively consistent with the theory of legislative voting developed by Fiorina in his 1974 book, *Representatives, Roll-Calls, and Constituencies*. In this book, Fiorina argues that when a constituency cares about an issue, a legislator is going to attempt to please their constituency on the issue, as a displeased constituency is more harmful than a pleased constituency is helpful. Second, Fiorina also argues that when there are two constituency groups that care about an issue, whether they agree on their position or not is key for how a legislator behaves. If the groups agree, the legislator will vote in lockstep with the group. This expectation corresponds with the situation in my data when those who care about the issue are biased. While I argue bias should increase the gender gap, Fiorina would disagree and argue that bias should decrease the gender gap. According to Fiorina, it is when there is disagreement between groups on the issue, when there is low bias in my data, that legislators cannot win by choosing one group over another and therefore vote how they want.

Clearly, the results in this chapter more strongly support Fiorina's expectations than my own. However, Fiorina argues that legislators vote issue-by-issue, disregarding how they will vote on other issues or other legislation. This emphasis on issue-by-issue, I argue, ignores the electoral arena in which legislators are elected and make promises to their constituency on multiple issues in a single platform. Because there is evidence that these promises matter for how legislators later behave in Congress (Sulkin 2005), I argue in the next chapter that politically exploitable heterogeneity in the district is a useful concept that we should continue to pursue, despite these early discouraging results.

Chapter 7

Conclusion

In this chapter, I conclude the dissertation with a summary of the theory and results, highlighting the contributions of the project to political science. I also discuss in greater detail the implications of the results for the theory. Finally, I propose some avenues for further research.

7.1 Summary of Dissertation

This dissertation was motivated by the puzzling persistence of a gender gap in Congressional voting. While descriptive representation scholars argue that the gender gap is a result of female legislators' unique policy preferences, traditional studies of legislative behavior and formal models of candidate competition argue that legislators' preferences are insufficient to drive legislator divergence on important issues. In chapter 2, I investigate some alternative explanations for the gender gap, including biased partisan voters, systematically different primary voters, and differential information.

Biased partisan voters might lead to divergence if they are biased towards a particular candidate based on party identification, regardless of issue preferences. This bias should allow candidates who benefit from the bias the freedom to move away from the median voter in the direction of their policy preferences. However, in Chapter 2, we find that partisan bias in the district has no effect on the gender gap in Congress. I then tested whether male and female legislators have systematically different primary median

voters. If candidates are elected through primary and general elections, the candidates will have to place themselves at the policy point in between their primary median voter and their general election median voter. Therefore, if men and women have the same general election median voter, differences in legislative voting may be explained by differences in the primary median voter. As with biased voters, the evidence on systematically different primaries shows that men and women tend to be elected by similar primary median voters and differences in primaries cannot explain the gender gap in Congress. Finally, I tested whether differential levels of voter information can explain the gender gap. The argument was that if female candidates made an effort to selectively inform female citizens, the female median voter would have more influence in districts with female candidates. This differential in information could lead to differences in Congressional voting. Again, the results in Chapter 2 lend little support to this argument, with female candidates for the House having little effect on female citizens' levels of political information or political participation. The failure of these three plausible explanations to account for the gender gap in Congress emphasized the puzzle. If preferences are insufficient and other modifications to the traditional median voter theory do not explain the persistent gender gap, we are left with the question, under what conditions will legislators pursue their preferences instead of the preferences of the median voter?

To answer this question, I proposed a theory of politically exploitable heterogeneity and legislator divergence. The theory has two components. The first component argues that legislators must form an electoral coalition in the district in order to win office. When creating this coalition, I argue legislators will want to choose groups

in the district that agree with their policy preferences in order to build electoral support for voting their preferences once in office. However, the composition of the district will constrain when legislators have a choice among groups in the district. Since I argue that legislators prioritize winning over voting their policy preferences, if a district does not allow legislators to choose which groups are part of the coalition, the legislator will form the coalition that helps her to get elected and vote with this coalition's preferences once in office.

The second component of the theory addresses when legislators will be able to choose the groups they include in their electoral coalition. Multiple scholars have argued that district heterogeneity, usually measured as demographic diversity, should lead to legislator divergence. I argue in Chapter 3 that these results provide us with little theoretical guidance as to how to conceptually define heterogeneity. I propose that demographic diversity may sometimes lead to politically exploitable heterogeneity and at other times may lead to politically non-exploitable heterogeneity. Only when politically exploitable heterogeneity is present in the district will legislators be able to choose which groups to include in their electoral coalition and therefore diverge from legislators from similar districts.

I define politically exploitable heterogeneity as when constituents in the district disagree on the relative priority of issues and disagree on the policy solutions to these issues. When this occurs, then constituents form intense preference minorities who are willing to trade less-preferred positions on issues they care less about for their ideal position on the issue they care most about. When these minorities form, this creates the opportunity for candidates to cultivate some groups with whom they agree while another

candidate can cultivate other groups in the district. While this allows candidates to form an electoral coalition consistent with their policy preferences and therefore vote with their policy preferences in office, this opportunity should also lead to more electorally competitive districts because an opponent can also form a different winning coalition. When this type of heterogeneity does not exist in the district, candidates have no choice in whom to cultivate for their electoral coalition and we should not see divergence in these types of districts.

A key assumption of the theory is that male and female legislators have different policy preferences they would like to pursue in office. There is strong evidence for this assumption. Across two different surveys, the American National Election Surveys and the Convention Delegates Survey, I find that elite women are more liberal than elite men on issues of social welfare and social issues, such as abortion and school prayer. In regards to social welfare, these differences between elite men and women mirror the differences we find among the political non-elite. However, on issues of abortion and school prayer, elite women's preferences do not necessarily correspond with non-elite women's preferences. Among non-elites, men and women tend to agree on social issues. This difference between elites and non-elites highlights a key empirical contribution of the dissertation. A common claim among descriptive representation scholars is that if female legislators pursue their preferences in office, they are representing women generally. However, as pointed out in Chapter 4, the differences that arise between elites and non-elites call into question any assumption of "automatic" representation of women by female legislators.

To test directly the effect of politically exploitable heterogeneity on the gender gap in Congress I relied on two distinct measures of the concept, each with their advantages and disadvantages. The first measure was based on national survey data. Respondents' most important issue was used to measure the relative priority of the issue of education and the correlation between issue importance and respondents' policy position on education was used to measure the level of bias on the issue of education. The key disadvantage of the survey measure was the lack of predictive validity; the level of bias in the district was uncorrelated with the level of electoral competition in the district. The second measure was based on individual contributions to political action committees (PACs). The percentage of individual contributions given to PACs that advocate on the issue of education was used to measure the relative importance of education. The partisan bias of these PACs in their contributions to candidates was used to measure the level of bias in the district on the issue of education. Unlike the survey measure, the contributions measure had a moderately strong correlation with electoral competition.

Measuring politically exploitable heterogeneity is difficult due to the complexity of the concept and both the survey measure and the contributions measure involved serious compromises. The biggest compromise was on measuring the presence of intense preference minorities. Ideally we would like to measure the presence of intense preference minorities across all issues in the district that each legislative candidate would like to trade on to create an electoral coalition. However, this was impossible to do for multiple reasons. First, the survey data did not ask policy preferences on more than a handful of important issues. Second, even if we do have the level of bias on all issues in the district, we do not know which issues each candidate would prefer to include in their

electoral coalition. The unsatisfying compromise was to try to measure whether there is an intense preference minority present on the issue of education and to assume that there is a minority available on another issue the legislator would like to trade for the issue of education.

Despite these problems with the measures, I find consistent results on the effect of issue importance and issue bias on the gender gap across the two measures. I estimate the modifying effect of issue importance and issue bias on the gender gap on education votes using a standard OLS model pooling across four Congresses from 1992 to 2000. I expected the modifying effect of issue importance to be negative, but substantively insignificant, and the modifying effect of bias to be positive and substantively significant. I find that as issue importance increases in the district, the gender gap decreases and the decrease is substantively significant for the contributions data. Contrary to expectations, issue bias also decreases the size of the gender gap. This decrease is substantively significant, especially for the survey data. In Chapter 6, I briefly discussed a possible interpretation of these results; below I discuss in more detail the implications of the results for the theory.

7.2 Implications of Results

As discussed in Chapter 6, my results are consistent with Fiorina's (1974) model of legislative behavior. He argues that as issue importance increases, legislators will be more tied to the opinion of the constituency that cares about the issue. He also argues that when two groups in the constituency care about the issue legislators will be especially responsive to their demands when the two groups agree, a situation that corresponds with

the presence of an intense preference minority in my theory. The key difference between Fiorina's model and my model hinges on the effect of an intense preference minority on legislator divergence. The effect of bias in the district on the gender gap seems to support Fiorina's expectations.

Despite these early discouraging results for my theory of politically exploitable heterogeneity, I argue the theory makes two important contributions to political science and deserves further exploration. First, the problems with Fiorina's model, as discussed in Chapter 3, remain. Fiorina assumes that legislators vote in Congress on an issue-by-issue basis because, he argues, they cannot predict which issues will come up for a vote. However, this assumption ignores the electoral arena in which political promises are made. Candidates generally do not make promises on only one issue during a campaign and constituents do not only care about one issue. In Fenno's seminal book on Congressional behavior at home, he argues that representatives create coalitions in the district and work very hard to balance these interests (Fenno 1978). The question then becomes, how do representatives translate their coalition activities in the district to their voting behavior in the Congress? Sulkin (2005) finds that legislators are not only looking forward to their next election when determining their behavior. Instead, the issues the opposing candidate raised during the last election find their way onto a representative's agenda. In this dissertation, I have suggested another possible connection between the electoral arena and Congressional behavior. I argue it is important to understand the connection between how legislators form their electoral coalitions and how legislators behave in office.

Second, Fiorina, among many others, argue that heterogeneity in the district leads to legislator divergence. However, the conceptual definition of heterogeneity is rarely spelled out to guide measurement of the concept and most scholars have reverted to demographic diversity as a proxy. Using demographic diversity, however, has lead to inconsistent results. It is unclear from the current theoretical literature why diversity in income should lead to legislator divergence but diversity in racial background should not. While the results in this dissertation are not supportive of my theory of politically exploitable heterogeneity, I have begun to define the concept in a way that can help us to measure heterogeneity in the future and possibly resolve the inconsistent results in the literature.

7.3 Further Research

As discussed, it is possible the theoretical definition of politically exploitable heterogeneity is wrong. Before making this assessment, it is important to give the measurement of the theory one more attempt given the difficulty of translating concept to measure and the current inadequacies of the measures available. Moving forward, I would start smaller with a qualitative look at some key districts. An important comparison would be to study high diversity districts where, according to current measures, some have low bias on the issue of education and some have high bias on the issue of education and some are represented by men while others are represented by women. This comparison would enable us to distinguish between politically exploitable heterogeneity and politically non-exploitable heterogeneity and begin to differentiate

among demographically diverse districts as to which would lead to legislator divergence and which would not.

This smaller qualitative comparison would allow us to create a more in-depth measure. Ideally, we would begin by getting a fuller picture of the issues that are relevant in the district as well as an understanding of the distribution of constituent preferences on the issues. Next, we could match up this characterization of the district's interests with the actual platforms of each of the candidates. An interesting comparison would be between districts with similar sets of important issues but appear to differ on the presence of intense preference minorities and analyze whether candidates have different electoral platforms. Finally, it would be necessary to then connect the platforms during election season to the actual behavior of these representatives in Congress. While this research plan would be an extensive and in-depth look at only a few districts, and therefore not necessarily generalizable to other districts, it would provide a foundation for pursuing measurement of the theory of politically exploitable heterogeneity.

7.4 Conclusion

This dissertation was originally motivated by a desire to understand when women behave differently than men in Congress and whether this difference meant better representation for women generally. Women have historically been excluded from political office at the national level and have only made real in-roads to these arenas of political power in the last decade. Even now, the increase in the number of women in national office has stagnated, with merely twenty percent of our national legislature occupied by women. While this dissertation has not yet been able to fully explain how

women negotiate the constraints of political office to bring a unique voice to the legislature, what is clear is that women make a difference in office. There are substantive and persistent gender differences in Congressional voting. Whether this difference necessarily means that women generally are better represented is a thorny question, highlighted by the difference I find between elite and non-elite women in their attitudes. However, what is certain is that having women in political office has the potential to have an important effect on our political outcomes. Understanding how this is possible given our political institutional structure is a key question for political science.

Bibliography

- Achen, C. H. (1978). "Measuring Representation." *American Journal of Political Science* 22: 475-510.
- Adams, J. (2001). "A Theory of Spatial Competition with Biased Voters: Party Policies Viewed Temporally and Comparatively." *British Journal of Political Science* 31(1): 121-158.
- Aiken, L. S., and S. G. West. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage Publications.
- American Association of University Women. *Congressional Voting Record*.
<<http://www.aauw.org/>>.
- Americans for Democratic Action. *Congressional Voting Record*.
<<http://www.adaction.org/>>.
- Ansolabehere, S. (2006). "Voters, Candidates, and Parties." In B. R. Weingast and D. A. Wittman, *The Oxford Handbook of Political Economy* (pp. 29-49). Oxford: Oxford University Press.
- Ansolabehere, S., J. M. Snyder, Jr., and C. Stewart, III. (2001). "Candidate Positioning in U.S. House Elections." *American Journal of Political Science* 45(1):136-159.
- Arnold, R. D. (1990). *The Logic of Congressional Action*. New Haven: Yale University Press.
- Barone, M. and R. E. Cohen. (2004). *The Almanac of American Politics, 2004*. Washington, DC: National Journal Group.
- Barone, M. and G. Ujifusa. (1992-2000). *The Almanac of American Politics*. Washington, DC: National Journal Group.
- Brambor, T., W. Clark, and M. Golder. (2006). "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14: 63-82.
- Burns, N., K. L. Schlozman, et al. (2001). *The Private Roots of Public Action*. Cambridge, Harvard University Press.

- Calvert, R.L. (1985). "Robustness of the Multidimensional Voting Model: Candidate Motivations, Uncertainty, and Convergence." *American Journal of Political Science* 29(1): 69-95.
- Cameron, C., D. Epstein, S. O'Halloran. (1996). "Do Majority-Minority Districts Maximize Substantive Black Representation in Congress?" *The American Political Science Review* 90(4): 794-812.
- Campbell, A., P. E. Converse, W. E. Miller, and D. E. Stokes. (1960). *The American Voter*. New York: Wiley.
- Carey, J. M., R. G. Niemi, et al. (1998). "Are Women State Legislators Different?" in *Women and Elective Office: Past, Present, and Future*. S. Thomas and C. Wilcox. New York, Oxford University Press: 87-102.
- Carroll, S. J. (2001). "Representing Women: Women State Legislators as Agents of Policy-Related Change." in *The Impact of Women in Public Office*. S. J. Carroll. Bloomington, Indiana University Press: 3-21.
- Center for Responsive Politics. <<http://www.opensecrets.org/index.php>>.
- Chaney, C.K., R.M. Alvarez, and J. Nagler. (1998.) "Explaining the Gender Gap in U.S. Presidential Elections, 1980-1992." *Political Research Quarterly* 51(2): 311-39.
- Chappell, H. W., and W. R. Keech. (1986). "Policy Motivation and Party Differences in a Dynamic Spatial Model of Party Competition." *The American Political Science Review* 80(3): 881-899.
- Clark, J. (1998). "Women at the National Level: An Update on Roll Call Voting Behavior." in *Women and Elective Office: Past, Present, and Future*. S. Thomas and C. Wilcox. New York, Oxford University Press: 118-129.
- Clinton, J. D. (2006). "Representation in Congress: Constituents and Roll Calls in the 106th House." *The Journal of Politics* 68(2): 397-409.
- Coleman, J. S. (1971). "Internal Processes Governing Party Positions in Elections." *Public Choice* 11(1): 35-60.
- Conover, P.J. (1988). "Feminists and the Gender Gap." *The Journal of Politics* 50(4): 985-1010.
- Cook, E.A., and C. Wilcox. (1991). "Feminism and the Gender Gap – A Second Look." *The Journal of Politics* 53(4): 1111-1122.
- Converse, P. E. (1962). *The Nature of Belief Systems in Mass Publics*. Ann Arbor, Survey Research Center, Univ. of Michigan.

- Davis, O.A., M.J. Hinich, and P.C. Ordeshook. (1970). "An Expository Development of a Mathematical Model of the Electoral Process." *The American Political Science Review* 64(2): 426-448.
- Dawson, M. (1994). *Behind the Mule: Race and Class in African-American Politics*. Princeton, NJ: Princeton University Press.
- Dodson, D. L. (2001). "Acting for Women: Is What Legislators Say, What They Do?" in *The Impact of Women in Public Office*. S. J. Carroll. Bloomington, Indiana University Press: 225-242.
- Downs, A. (1957). *An Economic Theory of Democracy*. New York: Harper & Row.
- Fenno, R. F. (1978). *Home Style: House Members in their Districts*. Boston, Little, Brown.
- Fiorina, M. P. (1974). *Representatives, Roll Calls, and Constituencies*. Lexington, D.C. Heath and Company.
- Gerber, E. R. and J. B. Lewis. (2004). "Beyond the Median: Voter Preferences, District Heterogeneity, and Political Representation." *Journal of Political Economy* 112(6): 1364-1383.
- Gilligan, C. (1982). *In a Different Voice: Psychological Theory and Women's Development*. Cambridge, MA: Harvard University Press.
- Goff, B. L. and K. B. Grier. (1993). "On the (Mis)measurement of Legislator Ideology and Shirking." *Public Choice* 76: 5-20.
- Granato, J., R. Ingelhart, and D. Leblang. (1996). "The Effect of Cultural Values on Economic Development: Theory, Hypotheses, and Some Empirical Tests." *American Journal of Political Science* 40(3): 607-631.
- Grant, J.T., and T. J. Rudolph. (2002). "To Give or Not to Give: Modeling Individuals' Contribution Decisions." *Political Behavior* 24(1): 31-54.
- Grofman, B. (2004). "Downs and Two-Party Convergence." *The American Review of Political Science* 7: 25-46.
- Hall, R.L. Unpublished Manuscript.
- Hall, R.L. (1996). *Participation in Congress*. New Haven, CT: Yale University Press.

- Huddy, L. and N. Terkildsen. (1993). "The Consequences of Gender Stereotypes for Women Candidates at Different Levels and Types of Office." *Political Research Quarterly* 46(3): 503-525.
- Hutchings, V. L., N. A. Valentino, et al. (2004). "The Compassion Strategy: Race and the Gender Gap in American Politics." *Public Opinion Quarterly* 68: 512-541.
- Iversen, T. and F. Rosenbluth (Jan. 2006). "The Political Economy of Gender: Explaining Cross-National Variation in the Gender Division of Labor and the Gender Voting Gap." *American Journal of Political Science* 50(1): 1-19.
- Jackson, J. E. (1990). "An Errors-In-Variables Approach to Estimating Models with Small Area Data." *Political Analysis* 1.
- Jackson, J. E. (1974). *Constituencies and Leaders in Congress*. Cambridge, Harvard University Press.
- Jackson, J.E. (1973). "Intensities, Preferences, and Electoral Politics." *Social Science Research* 2: 231-246.
- Jennings, M. K. (1992). "Ideological Thinking Among Mass Publics and Political Elites." *The Public Opinion Quarterly* 56(4): 419-441.
- Kathlene, L. (1998). "In a Different Voice: Women and the Policy Process." in *Women and Elective Office: Past, Present, and Future*. S. Thomas and C. Wilcox. New York, Oxford University Press: 188-202.
- Kaufmann, K.M. and J.R. Petrocik. (1999). "The Changing Politics of American Men: Understanding the Sources of the Gender Gap." *American Journal of Political Science* 43(3): 864-887.
- Key, V.O. (1949.) *Southern Politics in State and Nation*. New York, A.A. Knopf.
- Kingdon, J. W. (1989). *Congressman's Voting Decisions*. Ann Arbor, University of Michigan Press.
- Little, T. H., D. Dunn, et al. (2001). "A View from the Top: Gender Differences in Legislative Priorities Among State Legislative Leaders." *Women & Politics* 22(4): 29-50.
- Lublin, D. (1999.) "Racial Redistricting and African-American Representation: A Critique of 'Do Majority-Minority Districts Maximize Substantive Black Representation in Congress?'" *The American Political Science Review* 93(1): 183-186.
- Mansbridge, Jane. (1999). "Should Blacks Represent Blacks and Women Represent Women? A Contingent 'Yes'." *Journal of Politics* 3:628-657.

- Mayhew, D. R. (1974). *Congress: The Electoral Connection*. New Haven, Yale University Press.
- McKelvey, R. D. (1986). "Covering, Dominance, and Institution-Free Properties of Social Choice." *American Journal of Political Science* 30(2): 283-314.
- Miler, K. C. (2007). "The View from the Hill: Legislative Perceptions of the District." *Legislative Studies Quarterly* 33(4): 597-628.
- Miller, N. R. (1980). "A New Solution Set for Tournaments and Majority Voting: Further Graph-Theoretical Approaches to the Theory of Voting." *American Journal of Political Science* 24(1): 68-96.
- Missouri Census Data Center. <<http://mcdc2.missouri.edu/websas/geocorr2k.html>>
- National Education Association. *Congressional Report Card*. <<http://www.nea.org/>>.
- The National Election Studies (www.electionstudies.org). Ann Arbor, MI: University of Michigan, Center for Political Studies [producer and distributor]. Studies: 1992, 1994, 1996, 1998, 1948-2004 Cumulative Data File.
- Norrander, B. (1999.) "Is the Gender Gap Growing?" in *Reelection 1996: How Americans Voted*, ed. Herbert F. Weisberg and Janet M. Box-Steffensmeier, pp. 145-61. New York: Chatham House.
- Osborne, M.J. (1995). "Spatial Models of Political Competition under Plurality Rule: A Survey of Some Explanations of the Number of Candidates and the Positions They Take." *The Canadian Journal of Economics* 28(2): 261-301.
- Peltzman, S. (1984). "Constituent Interest and Congressional Voting." *Journal of Law and Economics* 27(1): 181-210.
- Phillips, A. (1995). *The Politics of Presence*. New York: Clarendon Press.
- Piven, F. F. (1985). "Women and the State: Ideology, Power, and the Welfare State." In Alice S. Rossi, ed., *Gender and the Life Course*, pp. 265-287. New York: Aldine.
- Plott, C. R. (1967). "A Notion of Equilibrium and Its Possibility under Majority Rule." *American Economic Review* 57: 787-806.
- Policy Agendas Project. *Congressional Roll-Call Votes Data*. <<http://www.policyagendas.org/index.html>>
- Poole, K. T. *Vote View*. <<http://voteview.com/>>.

- Poole, K.T. and L.H. Zeigler. (1985). *Women, Public Opinion, and Politics: The Changing Political Attitudes of American Women*. New York, Longman.
- Reingold, B. (Nov. 1992). "Concepts of Representation among Female and Male State Legislators." *Legislative Studies Quarterly* 17(4): 509-537.
- Sanbonmatsu, K. (2002). "Political Parties and the Recruitment of Women to State Legislatures." *The Journal of Politics* 64(3): 791-809.
- Saint-Germain, M. A. (Dec. 1989). "Does Their Difference Make a Difference? The Impact of Women on Public Policy in the Arizona Legislature." *Social Science Quarterly* 70(4): 956-968.
- Shapiro, R. Y. and H. Mahajan (Spring 1986). "Gender Differences in Policy Preferences: A Summary of Trends from the 1960s to the 1980s." *The Public Opinion Quarterly* 50(1): 42-61.
- Sullivan, J.L. (1973). "Political Correlates of Social, Economic, and Religious Diversity in the American States." *The Journal of Politics* 35(1): 70-84.
- Sulkin, T. (2005). *Issue Politics in Congress*. New York: Cambridge University Press.
- Swers, M. L. (Aug. 1998). "Are Women More Likely to Vote for Women's Issue Bills than Their Male Colleagues?" *Legislative Studies Quarterly* 23(3): 435-448.
- Swers, M. L. (2002). *The Difference Women Make: The Policy Impact of Women in Congress*. Chicago, The University of Chicago Press.
- Tamerius, K. L. (1995). "Sex, Gender, and Leadership in the Representation of Women." in *Gender Power, Leadership, and Governance*. G. Duerst-Lahti and R. M. Kelly. Ann Arbor, University of Michigan Press.
- Thomas, S. and S. Welch (Jun. 1991). "The Impact of Gender on Activities and Priorities of State Legislators." *The Western Political Quarterly* 44(2): 445-456.
- Tversky, A. (1972). "Choice by Elimination," *Journal of Mathematical Psychology* 9: 341-367.
- Warner, R. L. (1991). "Does the Sex of Your Children Matter? Support for Feminism among Women and Men in the United States and Canada." *Journal of Marriage and the Family* 53(4): 1051-1056.
- Welch, S. (Feb. 1985). "Are Women More Liberal than Men in the U.S. Congress?" *Legislative Studies Quarterly* 10(1): 125-134.

Wittman, D. (1983). "Candidate Motivation: A Synthesis of Alternative Theories." *The American Political Science Review* 77(1): 142-157.

Wood, G. S. (1969). *The Creation of the American Republic, 1776-1787*. New York: Norton.