

**Representation in Congressional Campaigns:
Evidence for Discounting/Directional
Voting in U.S. Senate Elections**

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Abstract

Several recent studies suggest that voters may prefer candidates who propose policies that are similar to, but more extreme than, the voters' sincere policy preferences. This may arise either because voters vote *directionally* based on the direction and intensity of candidates' proposals or, alternatively, because voters recognize that elected officials face obstacles to implementing their policy agenda and therefore *discount* the candidates' policy promises. Using data from the Pooled Senate Election Study, we evaluate the discounting/directional hypothesis versus the alternative proximity hypothesis, by conducting individual-level and aggregate-level analyses of voting in 95 Senate races held in 1988-90-92. Our results support the discounting/directional hypothesis, that voters reward candidates when they present distinctly non-centrist positions on the side of the issue (liberal or conservative) favored by their constituency. These findings have important implications for understanding voting behavior, policy representation, and candidate strategies in Senate elections.

Perhaps no concept is more central to democracy than the idea that candidates for office appeal to voters through their words and deeds. Precisely because incumbents are accountable for their behavior, elections and the campaigns that precede them are democracy enhancing. Elections condition the elected to remain faithful to the mandate of the people, thereby strengthening the tie between the represented and the representative (Arnold 1993). Consequently, the process through which politicians take issue positions in order to appeal to the citizenry exhibits an important aspect of representation. As Richard Fenno states “...there is no way that the act of representing can be separated from the act of getting elected.” (1978: 233).

Understanding candidate positioning in election campaigns focuses our attention on the criteria voters use to evaluate the candidates’ policy proposals. Until recently the nearly universally accepted view was that voters employ a *proximity* criterion, i.e. that centrist voters prefer centrist candidates, that moderately conservative voters prefer moderately conservative candidates, and so on. The proximity metric plausibly motivates office-seeking candidates contesting general elections to converge to the center of the distribution of voter preferences, along the ideological and policy dimensions that are salient in their constituencies (Downs, 1957; Enelow and Hinich, 1984; Hinich and Munger, 1997).

In recent years a wide-ranging, often heated debate has developed over the empirical status of alternatives to the proximity metric, that have been proposed as superior models of voter preferences over candidates’ policies. This controversy includes scores of articles devoted to the *directional model* (Rabinowitz and Macdonald, 1989), which posits that voters evaluate candidates according to the direction and intensity of their policy proposals (Macdonald et al., 1998; Iversen, 1994; Merrill and Grofman, 1997, 1999; Westholm, 1997, 2001, 2002; Lewis and King, 2000; Lewis, 2002). Other studies propose and test models in which voters *discount* the candidates’ policy positions (Lacy and Paolino 1998, 1999; Kedar, 2002; Merrill and Grofman, 1999). These latter studies explore the possibility that voters evaluate the candidates not according to their actual policy declarations but according to the voters’ projections of the policies that elected candidates could successfully implement, where these projected policies are typically discounted versions of the candidates’ proposals. This argument rests on the idea that voters recognize that checks-and-balances and legislative compromise will moderate the influence of their legislator. Downs (1957, p. 39)

appears to motivate policy discounting by noting, “[The voter] knows that no party will be able to do everything it says it will do. Hence he cannot merely compare platforms; instead he must estimate in his own mind what the parties would actually do if they were in power.”

A motivating thread in these literatures is the empirical observation that while proximity voting theory implies that successful candidates contesting general elections will locate near the center of the voter distribution – the Median Voter Result¹ – candidates and parties in most elections do not locate at the center of this distribution (we present empirical evidence on this point below). Rather, the distribution of candidates and parties relative to voters is consistent with what Merrill and Grofman (1999, pp. 3-4) characterize as “mildly but not extremely divergent policy platforms.” This observation encourages scholars to develop individual-level theories of voting and voter preferences that predict and account for the *moderate extremism* observed in candidates’ and parties’ positions in realworld elections.

In this paper we evaluate both the individual-level and aggregate-level implications of the discounting and directional voting theories, vis-à-vis proximity theory, in U.S. Senate elections. At the individual level, the proximity model implies that voters prefer Senate candidates whose policies mirror the voters’ own beliefs and, at the aggregate level, that state electorates should elect Senate candidates who advocate centrist positions relative to the voter distribution. Discounting and directional theories predict that voters prefer candidates who propose non-centrist positions that have the potential to shift government policies in the voter’s preferred direction, so that moderately liberal voters prefer should very liberal candidates, slightly conservative voters should prefer very conservative candidates, and so on. Discounting motivations may be especially pronounced in legislative elections – such as the Senate elections we study here – where candidates can be expected to only modestly influence government policies. Individual senators have considerable power to block or delay legislation, further limiting the influence of legislators to enact campaign promises. Consequently, voters will likely discount legislative promises made by senate candidates

¹ The median voter result applies to two-candidate elections in which voters choose deterministically based upon their proximities to the competing candidates along a unidimensional continuum (Black, 1958), while probabilistic voting with quadratic policy losses motivates convergence to the mean voter position (Enelow and Hinich, 1982).

because they are aware that other members of the chamber may derail these. To obtain his or her preferred policy outcomes a voter may reasonably prefer a Senate candidate espousing relatively intense or noncentrist views, after taking into account the moderation induced by the legislative process.

Previous empirical studies of the discounting and directional models, which have focused on individual voting behavior in the context of a single election, have been hampered by both methodological and data-related problems. Distinguishing between discounting and proximity motivations, for example, requires that the researcher have access to survey data which explicitly asks respondents to distinguish – for each candidate – between the candidate’s policy proposals and expected government policy outputs if the candidate is elected. These questions are rarely asked in election surveys.² With respect to directional voting theory, the problem is that – in the context of a single election – voters’ policy motivations may be confounded with non-policy-related considerations relating to comparisons of the candidates’ levels of competence and leadership ability, their levels of name recognition, incumbency effects, and so on. This methodological issue has prompted heated debate over the appropriate specification for distinguishing between the proximity and directional models (see Westholm, 1997, 2001, 2002; Macdonald et al., 1998, 2001).

Our analyses of the Pooled Senate Election Study, which provides survey data from voters in nearly 100 Senate elections held between 1988 and 1992, provides an opportunity to sidestep these data-related and methodological problems. Using an approach developed by Merrill and Grofman (1999) – one that depends on comparing voting behavior across *multiple* elections – we explore the linkages between Senate candidates’ ideological positions, the ideologies of state voters, and the outcomes of 95 Senate elections. We ask the question: Did Senate candidates systematically benefit when they located near the center of their states’ voter distributions, as the proximity model implies, or did candidates benefit when they presented distinctly non-centrist ideologies on the majority-preferred side of the ideological spectrum, as the discounting/directional models suggest? Our individual-level

² To our knowledge, the only surveys which explicitly ask such questions are those analyzed by Lacy and Paolino (1998, 1999), on Texas voters’ perceptions of the 1996 presidential candidates Clinton and Dole, and on Texas and Ohio voters’ perceptions of the candidates in the 1998 gubernatorial elections.

analysis asks corresponding questions by estimating a voter choice model that incorporates both a policy discounting/directional component along with a proximity component.

Both our aggregate level and our individual level findings consistently support discounting/directional theory, while they suggest a more modest role for proximity voting. Specifically, at the aggregate level we conclude that Senate candidates benefited when they were perceived as presenting distinctly non-centrist positions that reflected the policy direction (liberal or conservative) that was majority-preferred by their state electorates, while we find no evidence that candidates benefited from presenting centrist policies, as the proximity model predicts. At the individual level, we also find consistent policy discounting/directional effects, while our analyses provide only mixed support for proximity motivations. In toto, our findings strongly suggest that policy discounting/directional motivations influence individual voting behavior and aggregate election outcomes in U.S. Senate races, an effect that office-seeking candidates should take into account.

As a caveat, we note that while our findings consistently support directional/discounting motivations, we are unable to distinguish between the directional and discounting models using the data and methods available to us. As we argue below, both models generate substantively similar predictions about individual-level voting behavior and aggregate outcomes in Senate elections. At the individual level both theories imply that slightly liberal voters should prefer very liberal Senate candidates, and that slightly conservative voters should prefer very conservative candidates. At the aggregate level each theory implies that, *ceteris paribus*, state electorates should elect Senate candidates who take distinctly non-centrist positions on the side of the ideological spectrum favored by the majority. Since we cannot use our data or methods to reliably distinguish between these theories of voter choice, we make no claims about the individual-level decision-making that gives rise to our observed results.

The above caveat notwithstanding, we believe our results have important implications for candidate strategies and for political representation in Senate elections. For regardless of whether voters are moved by policy discounting or directional considerations, both considerations reward office-seeking Senate candidates for shifting *away* from the center of the voter distribution in their constituencies, in the majority-preferred (liberal or conservative) direction. This result challenges the conventional wisdom derived from the proximity

model, that candidates benefit from presenting centrist policies in general elections. Furthermore, both discounting and directionally-motivated voting behavior suggest an alternative criterion for assessing political representation: namely, that Senators represent their state electorates' interests by advocating distinctly noncentrist positions, that shift government policy outputs in the state electorate's majority-preferred direction.

The second section provides an overview of the Pooled Senate Election data. The third section describes the problems that arise in evaluating discounting/directional voting theory in the context of a single election, and then outlines a solution – originally proposed by Merrill and Grofman (1999) – based upon analyses of voting across multiple elections. The fourth section reports applications of this strategy to individual-level and aggregate-level voting data from 95 Senate races covered in the Pooled Senate Study, while the fifth section discusses the implications of our findings.

Analyzing U.S. Senate elections, 1988-92: The Pooled Senate Study

Our data on candidate and voter positioning in U.S. Senate elections are drawn from the *American National Election Study: Pooled Senate Election Study*, which contains data from over 6000 interviews with citizens residing in states that had recently held Senate elections. Specifically, in the periods following the 1988, 1990, and 1992 Senate elections, approximately 60-70 interviews were conducted in each state, with respondents providing information about their ideological self-placements and their perceptions of the Senate candidates' ideologies, as well as the standard battery of questions relating to party identification, socio-demographic characteristics, and so forth. These data allow us to compare Senate candidates' ideological positions (as perceived by the respondents) against the distributions of their state electorates' ideological self-placements, for Senate elections held between 1988 and 1992.

Figure 1 shows the distribution of the U.S. Senate candidates' (mean perceived) positions on the standard 1-7 Liberal-Conservative scale, along with the mean respondent ideological position stratified by state³, for each of the Senate elections included in the

³ The mean state positions are computed using the ideological self-placements of respondents who were interviewed in the year a particular Senate election was held, so that there are typically two mean positions reported for each state – one for each Senate election held in the period 1988-92.

Pooled Senate Study. As expected Democratic candidates were perceived as taking somewhat liberal positions while Republican candidates were typically perceived as conservative, and the mean state voter positions were typically located between the positions of the Democratic and Republican candidates (although these state means are mostly to the conservative side of the scale midpoint, which reflects the conservative tilt of the U.S. electorate in the period 1988-1992). Figure 2, which plots the Democratic candidate's perceived position against the Republican candidate's perceived position in each election, reveals that in virtually every contest the Republican candidate was seen as more conservative than the Democratic candidate. The candidate positions reported in Figures 1-2 are consistent with previous studies of U.S. House and Senate races (see Ansolabehere et al., 2001; Burden, 2001; Erikson and Wright, 1993, 1997). We also note that the respondents' ideological placements (both their self-placements and their candidate placements) in the Pooled Senate data have been extensively validated in previous empirical studies.⁴

[FIGURES 1-2 ABOUT HERE]

Distinguishing between discounting/directional voting and proximity Voting: Methodological problems and a proposed solution

The implications of proximity motivations versus directional/discounting motivations

Figure 3 presents an example that illustrates the conflicting predictions of proximity voting vis-à-vis directional/discounting motivations. In this example a Senate candidate D (who is slightly liberal) and a rival candidate R (who is very conservative) are placed along the 1-7 Liberal/Conservative scale. Under the proximity voting model, a voter's utility for each candidate is expected to increase with the voter's proximity to the candidate's position. Behavioral researchers and spatial modelers frequently represent voters' policy utilities in terms of quadratic losses, or squared distances, so that a voter i 's comparison between the candidates' ideological positions can be represented as

⁴ Burden et al. (2000) report that the candidates' mean perceived ideological positions, as computed from respondents' placements in the Pooled Senate Election Study, correlate highly with alternative measures of candidate ideology including interest group ratings, roll-call analyses, and legislator and candidate interviews. In addition Gershtenson (2001a) provides extensive validation of the respondents' ideological self-placements relative to their candidate placements.

$$U_i(D) - U_i(R) = (x_R - x_i)^2 - (x_D - x_i)^2 \quad (1)$$

where $U_i(D)$ and $U_i(R)$ represent the voter's utilities for candidates D and R, respectively, x_i represents the voter's preferred ideological position, and x_D and x_R represent the ideological positions of the candidates D and R, respectively. Figure 3A, which plots $[U_i(D) - U_i(R)]$ along the vertical axis as a function of x_i (the horizontal axis), shows that this utility differential is a linear function of the voter's position and that the voter is indifferent between the candidates when $x_i = (x_D + x_R)/2$. This proximity model implies that the hypothetical voter V, who is pictured in Figure 3A as holding slightly conservative beliefs, should support candidate D.

In contrast to proximity voting, Rabinowitz and Macdonald's (1989) directional model posits that voters evaluate candidates according to the *direction* and *intensity* of the candidates' positions. In the directional formulation the center point of the ideological continuum represents neutrality, and the voter or candidate favors neither side; as one moves away from the neutral point in either direction, the voter or candidate becomes increasingly intense in favor of that side of the ideological spectrum. The voter's utility for a candidate's ideology is proportional to both the voter's and the candidate's intensity, and this utility is positive if the voter and candidate agree on direction, and negative if they disagree, so that a voter i 's directional comparison between the candidates' ideological positions can be represented as

$$U_i(D) - U_i(R) = (x_D - N)(x_i - N) - (x_R - N)(x_i - N) \quad (2)$$

where N represents the neutral point along the ideology scale, which empirical researchers typically locate at 4 – the midpoint of the 1-7 scale – in their empirical analyses of NES data (see Rabinowitz and Macdonald, 1989; Merrill and Grofman, 1999). Figure 3B plots the value of $[U_i(D) - U_i(R)]$, as specified in equation 2, against the voter's preferred ideological position. As with proximity voting, this directional utility differential is a linear function of the voter's position x_i , but now the voter's indifference point is $x_i = N$, i.e. all voters to the right of the neutral point $N=4$ prefer R's conservative policy, while all those to the left of $N=4$ prefer D's slightly liberal position. Thus the directional model implies that the voter V should support candidate R, since R advocates an intense ideological position in V's preferred conservative direction.

Finally, we note that voters in Senate elections who discount the candidates' policy proposals by projecting the candidates' likely effects upon government policy outputs – and who vote based on their proximities to these projected outputs – may behave in a manner that is observationally equivalent to directional voting. The reason is that such voters plausibly project that individual Senators have quite modest effects on government policy, so that liberal Senate candidates are projected to shift government policy in a slightly liberal direction while conservative candidates will shift government policy slightly to the right, with the magnitude of this policy shift plausibly depending on how extreme the candidate's position is. In this case, as Lacy and Paolino (1999) have noted, policy discounting considerations and directional considerations can motivate identical voting decisions (see also Grofman, 1985). Thus the hypothetical voter V in Figure 3 may vote for candidate R if she projects that R's election will shift government policy to the right – in V's preferred direction – while projecting that the slightly liberal candidate D will shift government policy very slightly to the left, away from V's preferred positions.⁵ Recent empirical research by Lacy and Paolino (1998, 1999) suggests that voters in U.S. presidential and gubernatorial elections decide based upon their projections of the candidates' likely policy influence in government, while Kedar (2002) presents analyses suggesting that voters in several European electorates similarly account for political parties' expected impacts on government policies.

[FIGURES 3A-3B ABOUT HERE]

Methodological problems in distinguishing between proximity voting and directional/discounting motivations.

Although proximity and discounting/directional theories generate conflicting predictions about which candidates purely policy-oriented voters should support, a methodological difficulty arises when attempting to distinguish between these models via analyses of voting behavior in a single election: namely, that real-world voters are motivated in part by non-policy-related factors that vary across candidates, including the candidates' levels of name

⁵ As Lacy and Paolino (1999, page 23) note, this argument assumes that the neutral point in the directional model is somewhere close to the status quo. This seems reasonable in the context of U.S. Senate elections in the period 1988-92 – a period of divided government – when the status quo was plausibly located near the center point (4) of the 1-7 Liberal-Conservative scale.

recognition, voters' retrospective evaluations of incumbent performance, and voters' comparative evaluations of the candidates' personal qualities (charisma, competence, integrity, etc.). These factors may obscure the relative impacts of directional/discounting policy motivations vis-à-vis proximity motivations. For instance, in Figure 3B the hypothetical voter V who prefers candidate R's policy due to directional/discounting motivations may nevertheless vote for candidate D, if D has greater charisma or benefits from incumbency-related advantages. Therefore empirical voting analyses that omit nonpolicy-related influences may produce biased estimates of the salience of proximity motivations versus directional/discounting motivations.

While it is often feasible, in empirical analyses of voting in a single election, to control for nonpolicy influences that vary across *voters* (such as party identification and socio-demographic characteristics), it is not easy to accurately estimate the impact of nonpolicy influences that vary across *candidates*. This is because such influences – which are best modeled as candidate-specific intercepts – may be confounded with directional/discounting motivations. To appreciate this point, which has been stressed repeatedly in the empirical literature on directional versus proximity voting (see Lewis and King, 2000; Macdonald et al., 1998, 2001; Merrill and Grofman, 1999), note that – as Figures 3A-3B make clear – the candidate utility differential [$U_i(D) - U_i(R)$] is a linear function of the voter's ideological position for *both* proximity voting and for directional/discounting motivations. Hence the functions are linear transformations of each other, so that the relative salience of proximity versus directional/discounting motivations may be confounded with the nonpolicy-related intercept. This means that no crucial test distinguishing the models is possible on the basis of voting behavior in a single election. The omission of the intercept term produces biased estimates of the relative impact of proximity versus directional/discounting motivations, while inclusion of the term makes the model unidentified.⁶

A solution based on the analysis of multiple Senate elections

⁶ Westholm (2001) has argued that this problem may be alleviated by controlling for respondent-specific evaluations of the candidates' (or party leaders') personal qualities, items which are frequently included in election surveys. While promising, this approach cannot control for the many additional candidate-specific factors that influence voters in Senate elections, such as the candidates' name recognition, campaign spending, incumbency effects, and so forth (Jacobson 2001).

In the context of a single two-candidate election, there may be no satisfactory way to address the methodological problem described above.⁷ However Merrill and Grofman (1999, Appendix 7.1) propose a solution that can be applied to both a single multicandidate election and to the analysis of multiple two-candidate elections, such as the set of Senate elections covered in the Pooled Senate Study. The Merrill-Grofman approach rests on the insight that while the comparison between a single pair of candidates may find the more extreme (moderate) candidate holding a large nonpolicy-related advantage, analyses of multiple paired candidate comparisons are less likely to be contaminated by this problem. Thus analyzing voters' preferences over multiple paired candidate comparisons may make it possible to omit candidate-specific intercepts without significantly biasing estimates of the true influences of proximity and directional motivations. Indeed, Merrill and Grofman report simulation results suggesting that in multicandidate elections involving as few as seven candidates – which permit 21 possible paired candidate comparisons – the degree of bias introduced by the omission of candidate intercepts is relatively small, thus producing reliable estimates of the mixture of proximity versus discounting/directional voting.

We apply the Merrill-Grofman insight to the analysis of voting in the 95 U.S. Senate elections described earlier. Specifically, we pool the voting data across elections, estimating – at the individual level – the parameters for a model of voting behavior which incorporates both the respondent's proximity-related and discounting/directional-related evaluations of the candidates' ideologies, while omitting candidate-specific intercepts. (As discussed below, we also control for numerous measured voter-specific and candidate-specific influ-

⁷ One possible solution involves distinguishing between the proximity and directional/discounting theories using *voter-specific* placements for the candidate locations, rather than mean placements. We report the results of such tests below, although we note that voter-specific candidate placements may be contaminated by projection bias (see Merrill and Grofman, 1999; Markus and Converse, 1979; Page and Jones, 1972; but see Westholm, 2002, for a proposed solution to this problem). That the substantive results we report below are valid for both voter-specific and mean candidate placements strengthens our conclusions.

A second approach employed by Westholm (1997, 2001, 2002) involves estimating the proximity component of voters' policy evaluations using linear losses (the city-bloc metric) as opposed to quadratic losses. We have replicated all of the empirical analyses presented below using linear losses for the proximity metric, and find that these analyses produce identical substantive conclusions to those we report for the quadratic loss model.

ences on the vote). At the aggregate level, we estimate the parameters of a corresponding model in which the dependent variable is the Democratic candidate's share of the two-candidate vote in the Senate election, and the key independent variables are the competing candidates' proximities to the mean state voter, and the mean state voter's directional/discounting evaluation of the candidates' positions. This approach should permit an accurate evaluation of the central individual-level and aggregate-level hypotheses associated with directional/discounting theory.⁸

Proximity motivations versus directional/discounting motivations: Empirical results

Individual-level analysis

We use the Merrill-Grofman approach to estimate the relative impacts of proximity versus directional/discounting motivations in the set of all elections in the Pooled Senate Elections dataset for which the relevant data was available, 95 elections in all.⁹ To test for the relative impact of directional versus proximity motivations at the individual level, we use logit regression to estimate a model of voter choice that includes as independent vari-

⁸ Given that we control for several measured sources of candidate strength, our application of the Merrill-Grofman approach will generate unbiased estimates of the impact of voters' directional/discounting motivations *unless* Senate candidates' policy centrism correlates with unmeasured election advantages. To determine whether such incentives were likely to bias our conclusions we devised the following test. We reasoned that if nonpolicy-related advantages give candidates systematic incentives to present either centrist or extreme positions, then using a two tailed test, there should be a significant relationship between candidate extremity and the *measured* variables included in our study. Accordingly, we computed the correlations between Senate candidate extremity and these measured sources of election strength. These analyses (which are available upon request) suggest that candidates who benefited from measured nonpolicy-related advantages took very slightly more centrist positions than did weaker candidates. To the extent that this finding extends to the relationship between *unmeasured* sources of candidate strength and ideological extremity, our approach should introduce minimal bias in the estimation of proximity versus directional effects, and to the extent that bias is present it should favor the proximity model. Since the empirical estimates we report below favor the discounting/directional model even without adjusting for this bias, they would certainly favor this model were we to take this bias into account.

⁹ Our analysis does not include the few uncontested senate races (1990 Arkansas, Georgia, Mississippi and Virginia) as well as the 1988 Nevada senate election where there were problems in the survey interview protocol

ables both a proximity component (based on equation 1) and a directional/discounting component (based on equation 2, and with the neutral point set at $N=4$). The dependent variable records whether the respondent voted for the Democratic candidate, where the sample is limited to respondents who reported voting for either the Democratic or Republican candidate in the election. In combination, the two spatial variables capture discounting/directional effects and proximity effects in that if both are statistically significant with expected signs, the voter's policy utility is increasing in direction but not without bound. Spatial proximity in effect serves as a weight that limits the extent to which voter utility increases in distance from the voter's ideal point. Consistent with directional/discounting theory, the party or candidate spatial location that maximizes voter utility will not be at the voter's ideal point, but rather at a more extreme location.

Our model includes a number of respondent-specific control variables common to studies of voter choice, including party identification, race, education, and income. In addition, we control for several candidate-specific variables that have been found to systematically influence Senate election outcomes: these include incumbency effects, the quality of non-incumbent candidates (i.e. whether such candidates had held previous elected office), and candidate spending (see Burden, 2001; Ansolabehere et al., 2001). The resulting specification is given by equation 3:

$$\begin{aligned}
U_i(\text{D}) - U_i(\text{R}) = & b_1 + b_2[(x_R - x_i)^2 - (x_D - x_i)^2] + b_3[(x_D - 4)(x_i - 4) - (x_R - 4)(x_i - 4)] \\
& + b_4(i\text{'s income}) + b_5(i\text{'s education}) + b_6(i\text{'s race}) + b_7(i \text{ is a Democratic partisan}) \\
& + b_8(i \text{ is a Republican partisan}) + b_9(\text{Democrat's incumbency advantage}) \\
& + b_{10}(\text{Democrat's quality advantage}) + b_{11}(\text{Democrat's spending advantage}) \quad , \quad (3)
\end{aligned}$$

where x_i represents the respondent's ideological self-placement, and x_D and x_R represent the ideological positions of the Democratic and the Republican candidate, respectively. We label the expression $[(x_D - x_i)^2 - (x_R - x_i)^2]$ the *Democratic candidate's proximity advantage*, which increases in value as the respondent self-places closer to the Democratic candidate (or further away from the Republican candidate); similarly, the expression $[(x_D - 4)(x_i - 4) - (x_R - 4)(x_i - 4)]$ represents the *Democrat's directional advantage*, which increases in value as the respondent approves more strongly of the Democratic candidate's proposed ideological direction (or less strongly of the Republican candidate's proposed direction). Note that in equation 3 the variables relating to pol-

icity proximity, policy direction, income, education, race, and party i.d. (the variables associated with the parameters $b_2 - b_8$) vary across respondents *and* across elections, while the variables for incumbency, candidate quality, and campaign spending (parameters $b_9 - b_{11}$) vary across elections but are constant for all respondents voting in the same election.¹⁰ The description and coding rules for these variables are given in the appendix.

Our parameter estimates for the specification given in equation 3 are reported in Table 1. Column 1 reports results for *mean candidate placements*, i.e. for the specification in which each respondent is assumed to perceive each candidate as being located at the mean placement ascribed to that candidate by all survey respondents. For this analysis we included all respondents who reported voting in one of the 95 Senate elections and who could place themselves along the ideology scale (N=3974), even if they could not place the candidates. Column 2 reports results for *voter-specific candidate placements*, i.e. with each respondent assigned his/her individual placement of each candidate's position along the ideological scale. This analysis was necessarily limited to those respondents who reported voting and who could place both themselves *and* the candidates on the ideology scale (N=2630). We report estimates for both mean and idiosyncratic candidate placements, because previous empirical research suggests that this choice may affect conclusions about the relative mixtures of proximity voting versus directional/discounting motivations (see Westholm, 1997, 2002; Merrill and Grofman, 1999; Lewis and King, 2000).

The parameter estimates – for both mean and the idiosyncratic-perceived placements – show statistically significant effects for ideological direction, indicating that respondents' candidate evaluations increased as the candidate took increasingly intense/noncentrist posi-

¹⁰ In order to control for time period effects and for regional effects, we estimated alternative specifications that included dummy variables for elections held in 1990, for elections held in 1992, and for elections held in Southern states. These did not achieve statistical significance and so were dropped from the final analysis. We also analyzed further specifications that controlled for an additional factor that was plausibly related to the vote choice: the extent to which voters were willing to assign positions to each candidate on the ideology scale. To the extent that unwillingness to place a candidate indicated uncertainty about her position, it is plausible that little-known candidates were penalized by risk-averse voters not for the candidate's ideological position *per se*, but rather for the heightened uncertainty surrounding this position. Statistical analyses that controlled for this factor produced conclusions on proximity and discounting/directional motivations that were identical to those we report below.

tions on the side of the ideology continuum (liberal or conservative) favored by the respondent. However our empirical estimates provide only mixed support for the role of proximity motivations. In the mean placements analysis, the proximity parameter is not statistically significant and in fact has the wrong sign; however in the voter-specific analysis the proximity parameter is statistically significant and has the expected sign.¹¹

[TABLE 1 ABOUT HERE]

In toto, our results support the hypothesis that voters employ a directional/ discounting metric when evaluating Senate candidates' policy positions, but provide only mixed support for the hypothesis that proximity considerations also influence voters' decisions.

Aggregate-level analyses

While the individual-level analyses reported above constitute a direct test of individual voters' policy metrics, the debate over the empirical status of proximity voting versus the discounting/directional models is important in part because of its implications for *aggregate* election outcomes: namely, that in two-candidate general elections the proximity metric is expected to reward candidates who take centrist positions relative to the voter distribution, while the directional and discounting metrics reward candidates who take intense or noncentrist positions on the majority-preferred side of the issue. This debate thus has crucial implications for the policy strategies that office-seeking politicians should pursue, and we suspect that this is largely responsible for the widespread interest the debate has aroused among political scientists. To date, however, no empirical study has evaluated the aggregate-level hypotheses associated with the directional/ discounting models of policy voting.

Accordingly, we performed a set of aggregate-level regression analyses in which the dependent variable was the Democratic candidate's share of the two-candidate vote in the Senate election under review. The independent variables of interest included the *Democratic candidate's directional advantage*, defined as the scalar product of this candidate's

¹¹ This is not unexpected, since previous empirical research suggests that use of voter-specific candidate placements tends to favor the proximity model while use of mean placements favors the directional/ discounting approach (see Merrill and Grofman, 1999; Lewis and King, 2000; Ickovic, 2002).

ideological position and the mean state voter's ideological position, minus the scalar product of the Republican candidate's position and the mean state voter's position. We also included a measure of the *Democratic candidate's proximity advantage*, defined as the difference between the squared distance between the Republican candidate's (mean perceived) ideology and the mean state voter self-placement, and the squared distance for the Democratic candidate.¹² (We performed alternative regressions in which our measure of proximity was linear distance, rather than quadratic distance. These analyses yielded identical substantive conclusions to those we report below). We also controlled for several variables that were not directly tied to the candidates' positions in the election, including candidate spending, the partisan composition of the state electorate, incumbency, and candidate quality (the description and coding of these variables is given in the appendix).¹³ Thus our aggregate-level specification was

$$\begin{aligned} \text{Democratic vote share} = & b_1 + b_2[(x_D - x_s)^2 - (x_R - x_s)^2] + b_3[(x_D - 4)(x_s - 4) - (x_R - 4)(x_s - 4)] \\ & + b_4(\text{Democrat's partisan advantage}) + b_5(\text{Democrat's incumbency advantage}) \\ & + b_6(\text{Dem.'s quality advantage}) + b_7(\text{Dem.'s spending advantage}) \quad , \quad (4) \end{aligned}$$

¹² An anonymous reviewer notes that our specification for proximity advantage may be mis-specified because candidate location at the mean voter position does not necessarily maximize support, when voters are also motivated by valence considerations related to candidate spending, incumbency, or uncertainty over the candidates' positions (see Berger, Munger, and Potthoff, 2000; Ansolabehere and Snyder, 2000; Groseclose, 2001). However estimates reported by Erikson and Romero (1990; see Table 2) suggest that the magnitude of these effects in realworld elections are often small, with the candidate optima being located .05 to .10 away from the voter mean (along the 1-7 NES policy scales), in the direction of the weaker candidate's partisan constituency. We performed alternative regressions which accounted for this possibility by measuring candidates' proximity advantages relative to locations shifted between .05 and .15 units away from the voter mean, in the direction of the challenging candidate's partisans (for elections involving incumbent candidates). These analyses yielded substantive conclusions that were identical to those we report below.

¹³ We estimated the parameters for alternative specifications that controlled for the election year and for elections held in Southern states. These variables did not achieve statistical significance and hence were dropped from the analysis. All of the substantive conclusions we report below are supported in these additional analyses.

where x_D and x_R represent the (mean perceived) positions of the Democratic and Republican candidates, respectively, x_s represents the mean ideological self-placement of survey respondents from the state¹⁴, D 's partisan advantage represents the proportion of state respondents who identified with the Democratic party minus the proportion of Republican identifiers, and the remaining variables are defined as in the individual-level analyses.

Table 2, column1 reports the estimated regression coefficients for the analysis of the 95 Senate elections held between 1988-92, for which information was available. These estimates support the directional/discounting effects hypothesis, that Senate candidates' vote shares increase with the mean state constituent's directional evaluation of the candidate's position. The directional coefficient is statistically significant at the .01 level.¹⁵ Furthermore, the magnitude of the coefficient suggests that the directional effects of candidate positioning are substantively significant: the estimated value, 7.08, suggests that for a moderately conservative state – one in which the mean voter placement was 4.5 on the 1-7 ideo-

¹⁴ For these computations mean state ideology was computed for respondents interviewed in the year in which the Senate election was held, so that a state could be assigned different mean ideology scores for different years. We recomputed all of the regression results reported below using an alternative specification, in which the mean state ideology was based on the full set of respondents in each state who were interviewed between 1988-1990-1992. These analyses yielded identical substantive conclusions to those reported below.

¹⁵ As a check on the possible effects of omitting candidate-specific intercepts, we performed Monte Carlo simulations on the Pooled Senate data. For each of the 100 simulations, we randomly generated a candidate-specific parameter for each Democratic candidate, drawing independently from a normal distribution centered on zero and with a standard deviation of 1.00 (this standard deviation was consistent with the ranges of values we estimated for a voting model identical to equation 3, except that we omitted the directional component and included a candidate-specific intercept for each election). For each randomly generated set of candidate intercepts, we then estimated the values of the directional and proximity parameters using the voting specification given in equation 3, which omits candidate-specific intercepts (we used mean candidate placements for these analyses). The range of the resulting parameter estimates provides a plausible measure of the range of bias that is possible due to omission of the intercepts. We found that the estimated parameter for directional voting was positive in each of the 100 simulations – indicating that the respondents' candidate evaluations increased as the candidates presented more intense positions shaded in the respondent's preferred policy direction – and in 77 of these simulations the parameter was statistically significant at the .05 level. These results support the substantive conclusion that voters are motivated by directional/discounting considerations.

logical scale – candidates’ vote shares increased by three to four percentage points for each additional unit to the right that the candidate located along the 1-7 ideological scale.¹⁶

The coefficient estimate in column 1 does not support the proximity effects hypothesis, that Senate candidates’ vote shares increase with the proximity of the candidate’s ideology to her constituents’ mean ideological position. The estimated coefficient for the proximity variable is in fact negative, which is consistent with the proposition that ideological centrism *depresses* candidate support. Furthermore, while the coefficient is not statistically significant, a comparison of the coefficient estimate and its standard error strongly suggests that centrist candidates do not gain significant electoral advantage. The upper bound on the 95% confidence interval for the proximity advantage coefficient is less than 0.5 – a value which would imply that, *ceteris paribus*, candidates would gain about one half of one percentage point in the popular vote by shifting one ideological unit nearer to the mean voter’s position. We note that our findings on proximity effects closely resemble those reported by Gershtenson (2001b), in his aggregate-level analyses of the Pooled Senate data.

Table 2, column 2, reports parameter estimates for an aggregate-level specification that was identical to equation 4 *except* that the Democratic candidate’s proximity advantage was computed by taking the average of the state respondents’ squared proximities to each candidate based upon *voter-specific* placements of the candidates¹⁷; the directional/discounting component was similarly computed. These estimates support substantive conclusions that are identical to those we reached based on the mean placements analysis: namely, that Senate candidates’ vote shares are significantly related (at the .01 level) to their constituents’ mean directional/discounting evaluations of the candidates’ ideologies, while proximity effects are not statistically significant.

¹⁶ The mean state ideological placement in the Pooled Senate Election Study was near 4.4 on the 1-7 Liberal-Conservative scale, so that this example provides a reasonable approximation of the electoral impact of candidate positioning.

¹⁷

That is, the Democratic candidate’s proximity advantage was computed as

$$\frac{\sum_i [(x_{iD} - x_i)^2 - (x_{iR} - x_i)^2]}{n}$$

, where x_i represents the respondent i ’s ideological self-placement, x_{iD} and x_{iR} represent i ’s placements of the Democratic and Republican candidates, respectively, and n represents the number of respondents.

An alternative aggregate-level specification. Although the results reported above support the central aggregate-level hypothesis associated with directional voting, we emphasize that these results do *not* necessarily imply that candidates gain votes by presenting noncentrist positions on the majority-preferred side of the issue. What our aggregate-level results actually suggest is that candidates receive a *direct benefit* from pursuing this strategy, i.e. that this strategy gains votes all other factors being equal. However, candidate positioning may also *indirectly* affect the vote by influencing candidates' abilities to raise money – hence their campaign spending – and may also influence voters' party identifications. Suppose, for instance, that senate candidates who present intense or noncentrist policy images have difficulty raising money, or motivate the opposing party to target them for defeat. In these cases the direct benefits such candidates receive from voters' favorable evaluations of their policies may be counteracted by the electoral costs associated with reduced campaign funds (or increased opposition spending). Thus it is possible that vote-seeking candidates benefit from policy moderation, even as individual voters employ discounting/directional criteria.

In order to control for these possibilities, we estimated the coefficients of an alternative aggregate-level specification, that was identical to equation 4 *except* that we omitted voter partisanship and campaign spending, the two independent variables that are plausibly endogenous in the model.¹⁸ Table 2, columns 3-4 report the estimated regression coefficients for this specification, for both mean candidate placements (column 3), and voter-specific placements (column 4). These estimates support substantive conclusions identical to those we reached based on the fully-specified aggregate level voting model.

[TABLE 2 ABOUT HERE]

¹⁸ We estimated the parameters for an additional aggregate-level specification that omitted the incumbency and candidate quality variables, as well as campaign spending and state partisanship. Our reasoning was that while the variables relating to incumbency and candidate quality were not directly affected by the candidates' positioning in the current election, to the extent that the candidates' policy images in previous elections affected their images in the current senate election – and that these previous policy images affected the candidates' electoral fortunes in earlier elections – incumbency and holding previous elective office could be considered endogenous to the model. The parameter estimates for this reduced-form specification supported substantive conclusions that were identical to those reported above.

Implications of our Findings

Our goal has been to evaluate whether individual voter choice and aggregate Senate election outcomes better reflect discounting/directional evaluations or proximity evaluations of the candidates' ideological positions. From an empirical standpoint, our results are relevant to the literature on policy congruence, which frequently evaluates policy representation according to whether representatives take positions that reflect the mean positions of their constituents (see, e.g., Achen, 1978; Herrera, Herrera, and Smith, 1988). Our empirical findings suggest an alternative representation criterion: namely, that Senators faithfully represent their state electorates' interests by advocating distinctly noncentrist positions, that shift government policy outputs in the state electorate's majority-preferred direction.¹⁹

Our results also inform our perspective on how primary elections influence candidate strategies. The prevailing interpretation is that candidates face electoral trade-offs between appealing to their primary constituencies – which frequently support noncentrist positions – and attracting support from general electorates that typically support more moderate policies (Wright 1989, Usulaner 1999; Burden, 2001; Ezrow, 2002). Our findings suggest that this dilemma is mitigated for some Senate candidates, but is quite severe for others. Specifically, when the primary and the general election constituencies favor the same policy direction – which is plausibly the case for Republican candidates running for election in the South – then candidates do not face a trade-off between appealing to their primary and their general election constituencies.²⁰ However, in cases where the candidate's primary con-

¹⁹ In the context of the Senate, non-centrist positions may signal voters that candidates will use their substantial individual power to oppose policies with which voters disagree. Indeed, such an explanation is also consistent with a growing literature on subconstituencies which shows that legislators appeal to the preferences of groups of supporters and potential supporters while giving little weight to the preferences of their steadfast opponents (Fenno 1978, Wright 1989, Usulaner 1999, Bishin 2000). We believe that our findings are likely generalizable to House elections as well. While representatives lack the wide assortment of tools available to prevent legislation from passing, the design of electorally safe but not totally homogeneous House districts seems likely to induce issue appeals to the district majority to the detriment of the district minority.

²⁰ This distinction also provides an explanation for the findings of Bailey and Brady (1998), that the influences on representation vary depending on the homogeneity of the constituency. In this context our results suggest that legislators in homogenous states do not have to worry about such tradeoffs to the same degree as do legislators from heterogeneous states.

stituency favors a different policy direction than does the state's general electorate, an office-seeking candidate faces an acute strategic dilemma. Given the conservative slant of most state electorates – as measured by respondents' ideological self-placements in the Pooled Senate Study – it seems plausible that Democratic senate candidates faced this dilemma more frequently than their Republican opponents, in the period 1988-92.

Our findings raise several questions that we hope to address in future research. First, while our empirical results consistently support a role for discounting/directional motivations in Senate elections, they do not allow us to distinguish between these alternative policy metrics. As Lacy and Paolino (1999) have emphasized, differentiating between policy discounting and directional voting is problematic, because both models can motivate observationally equivalent behavior. One possible solution to this problem is to analyze voting behavior across different institutional environments, in order to determine whether policy proximity becomes relevant when voters believe the winning party/candidate can implement most of its policy agenda – a prediction consistent with the policy discounting model but not with directional theory (see Kedar, 2002). Owing to the nature of American representation, we believe that these results are widely generalizable to American elections though we are less sanguine about their prospects for comparative and particularly parliamentary systems. However, the extent to which these results apply, especially to the House of Representatives, demands further research (see note 19).

The above considerations notwithstanding, we believe our findings are important for understanding both Senate election outcomes and Senate candidates' strategies. For while political scientists are deeply interested in *why* voters do or do not prefer Senate candidates who propose noncentrist policies shaded in the voters' preferred directions, the candidates themselves are primarily interested in *whether* they will benefit from presenting such positions. Our answer to the latter question is *yes*, and this answer does not change depending on whether voters are moved by directional or discounting considerations.

Conclusion

Empirical studies on proximity versus directional voting have been beset by methodological controversies, many of which arise from the fact that in the context of a single two-candidate election, directional voting may be confounded with voters' nonpolicy-

related considerations. By exploiting a unique data resource, the Pooled Senate Election Study which contains data on all Senate elections from 1988-92, we have applied a methodological approach developed by Merrill and Grofman, which permits discrimination between voters' proximity-oriented and directional/discounting motivations.

Our empirical analyses find a consistent role for discounting/directional motivations: at the individual level, survey respondents appear more likely to support candidates who present intense or noncentrist positions on the respondent's preferred side of the issue (liberal or conservative); at the aggregate level, Senate candidates' vote shares increase as they take increasingly noncentrist positions (relative to their state's voter distribution) that reflect the state's majority-preferred policy direction. To our knowledge, this latter finding represents the first empirical test of the competing aggregate-level predictions generated by proximity theory and directional/discounting theory: namely, the proximity model predicts that, *ceteris paribus*, candidates benefit in the general election from converging to the center of their state's voter distribution, while the directional/discounting models reward noncentrist positioning in the majority-preferred direction. Given that the widespread interest in discounting/directional voting theory revolves largely around its potential to illuminate why politicians achieve electoral success while advocating distinctly noncentrist policies, we believe our aggregate-level results are particularly significant.

As we have noted above, our research strategy cannot distinguish between directional voting and an alternative hypothesis, that voters discount candidates' policy proposals to account for their expected impacts on government policy. This is because in the context of Senate elections, both directional theory and discounting theory plausibly motivate voters to focus on the policy direction – liberal or conservative – emphasized by the candidates. In addition, we are hesitant to generalize our findings on U.S. Senate elections to other election contexts. Nevertheless, our individual-level and aggregate-level findings are crucial for understanding voting behavior in Senate races, for assessing policy representation in Congress, and for discerning the logic of Senate candidates' election strategies. As such, we hope our findings contribute to the ongoing study of the linkages between voters' policy beliefs, candidates' platforms, and election outcomes.

Appendix

Variable Coding: Variables Relating to Individual-Level Analysis (see equation 3)

Variable	NES Pooled Senate Study Variable ID	Description/Coding
Dem Vote	Party of Candidate Voted for: v321	1 if respondent reports voting for the Democratic Candidate, 0 if Republican Candidate. Votes for third party candidates and abstain coded as missing.
Democrat's proximity advantage	Resp. Liberal-Conservative Placement: v547 Resp. L-C Placement of Dem Candidate: v556 Resp. L-C Placement of Rep. Candidate: v557	Squared distance to Republican candidate minus squared distance to Democratic candidate (see equation 1). Estimates using mean perceived candidate locations use the state/year average of v556 & v557, respectively, in this calculation.
Democrat's directional advantage	Resp. Liberal-Conservative Placement: v547 Resp. L-C Placement of Dem Candidate: v556 Resp. L-C Placement of Rep. Candidate: v557	Respondent's directional evaluation of the Democratic candidate's position, minus the respondent's directional evaluation of the Republican candidate's position (see equation 2). Estimates using mean perceived candidate locations use the state/year average of v556 & v557, respectively, in this calculation.
PID (Dem)	Respondent Party Identification: v497	1 if Respondent is Democratic Identifier (V497 = 0 or 1), 0 otherwise.
PID (Rep)	Respondent Party Identification: v497	1 if Respondent is Republican Identifier (V497 = 5 or 6), 0 otherwise.
Income	Respondent Family Income: v629	Coded as seven-point low (less than \$10,000) to high (\$80,000 or more) scale.
Education	Respondent Education: v608	Coded as seven-point low (1:8 grades or less) to high (7: advanced degree) scale.
Race	Respondent Race: v631	1 if Respondent is African-American, 0 otherwise.
Democrat's incumbency advantage	Incumbency status of Democratic and Republican Candidates: v16	1 if Democratic incumbent running; -1 if Republican incumbent running, 0 if neither Democratic nor Republican incumbent running.
Democrat's quality advantage	Previous Elected Office: v1497-v1500, v1697-v1700	Democratic and Republican candidates coded 1 (has held previous elective office) or 0 (has not held previous elective office). Quality Challenger is the difference between the Dem. and Rep. codes. The variable ranges from 1 (Dem. candidate has held previous elective office; Rep. candidate has not) to -1 (Rep. candidate has held previous elective office; Dem. has not).
Democrat's spending advantage	Total Campaign Spending by the Democratic and Republican Candidates: v1398-v1399.	Coded as the proportion of the two-candidate spending by the Democrat, minus .5, multiplied by 100. This variable ranges from 50 (Democratic candidate accounts for all campaign spending) to -50 (Republican candidate accounts for all spending).

Appendix, continued

Variable Coding: Variables Relating to Aggregate-Level Analysis (see equation 4)

Variable	NES Pooled Senate Study Variable ID	Description/Coding
Democratic Vote Share	Proportion of Democratic candidate vote share: v900	Proportion of two-party senatorial vote won by the Democratic candidate, multiplied by 100. This variable runs from 100 (Democratic candidate received 100% of the two-candidate vote) to 0 (Democrat received 0% of the two-candidate vote).
Democrat's proximity advantage	Resp. Liberal-Conservative Placement: v547 Resp. L-C Placement of Dem Candidate: v556 Resp. L-C Placement of Rep. Candidate: v557	For the mean placements analysis, this is the squared distance between the mean state respondent position and the Republican candidate's (mean perceived) position, minus the squared distance between the mean state respondent position and the Democratic candidate's (mean perceived) position. For voter-specific candidate placements, the coding of this variable is given in note 15.
Democrat's directional advantage	Resp. Liberal-Conservative Placement: v547 Resp. L-C Placement of Dem Candidate: v556 Resp. L-C Placement of Rep. Candidate: v557	For the mean placements analysis this is the directional evaluation of the Democratic candidate's (mean perceived) position, as computed for a voter located at the mean state respondent's position, minus this respondent's directional evaluation of the Republican candidate's (mean perceived) position. For voter-specific candidate placements, this is the state respondents' mean directional evaluation of the Democratic candidate's position, minus the state respondents' mean directional evaluation of the Republican candidate's position.
Democrat's partisan advantage	Respondent Party Identification: v497	Proportion of state respondents who are self-identified Democratic partisans ($V497 = 0$ or 1), minus proportion of self-identified Republican partisans ($V497 = 5$ or 6), multiplied by 100. The variable runs from 100 (all state respondents are democrats) to -100 (all state respondents are republicans).

Note: the variables relating to incumbency, candidate quality, and campaign spending are coded as in the individual-level voting analysis.

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Table 1. Explaining the Democratic Vote: Individual-Level Analyses

Explanatory Variable	Mean Candidate Placements (1)	Voter-Specific Placements (2)
Intercept	-1.51** (.16)	-1.44** (.20)
Democrat's proximity advantage	-.05 (.07)	.10** (.01)
Democrat's directional advantage	.33* (.15)	.08* (.03)
Party i.d. (Dem)	.93** (.09)	.71** (.11)
Party i.d. (Rep)	-.68** (.10)	-.66** (.13)
Income	-.06* (.03)	-.07* (.03)
Education	-.10** (.03)	-.09** (.03)
Race	.11 (.17)	.17 (.20)
Democrat's incumbency advantage	.22** (.07)	.24** (.08)
Democrat's quality advantage	.00 (.07)	-.07 (.09)
Democrat's spending advantage.	.013** (.002)	.01** (.002)
Number of cases	3974	2630
Adjusted R ²	.156	.218

* $p < .05$, ** $p < .01$, one-tailed test.

Notes: For these analyses the dependent variable was the respondent's reported vote (1=Democratic Candidate, 0=Republican). The voting specification used to estimate the parameters is given by equation 3 in the text. The coding and definitions of the independent variables is presented in Appendix B.

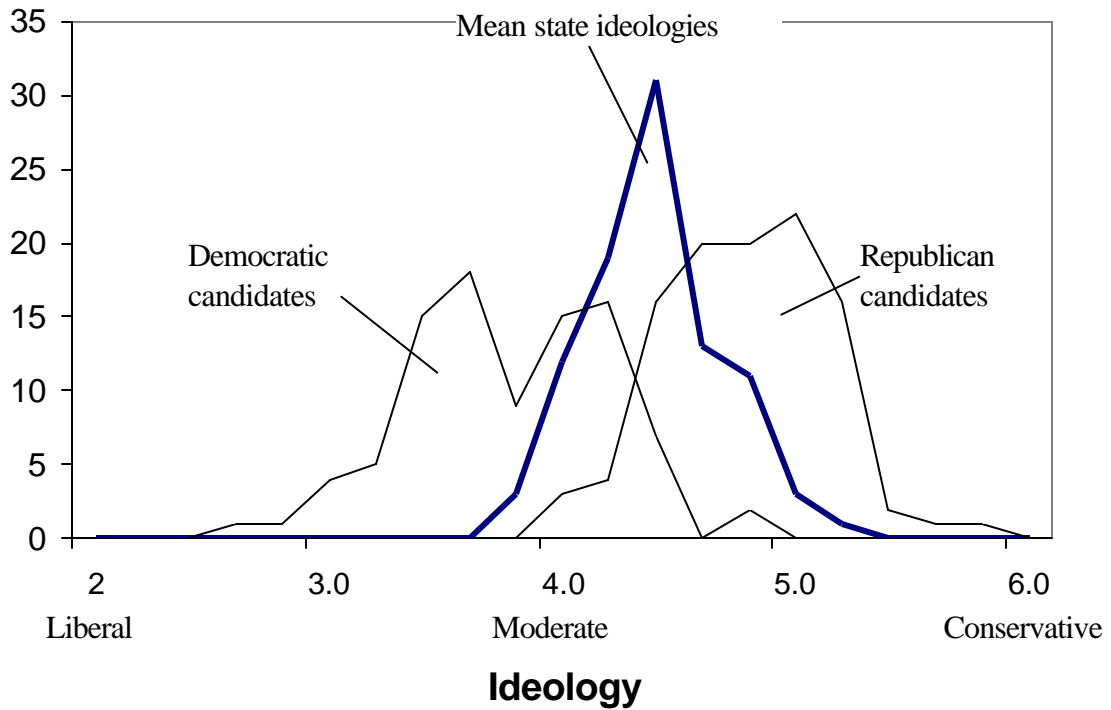
Table 2. Explaining Democratic Vote Share: Aggregate Analyses

Explanatory Variable	<u>Fully-Specified Model</u>		<u>Reduced-Form Model</u>	
	Mean Placements (1)	Voter-Specific Placements (2)	Mean Placements (3)	Voter-Specific Placements (4)
Intercept	52.46** (1.14)	51.34** (1.37)	53.92** (1.36)	52.06** (1.44)
Dem. proximity advantage	-2.67 (1.55)	0.78 (1.78)	-2.88 (1.78)	0.91 (1.80)
Dem. directional advantage	7.08** (2.67)	7.29** (2.56)	9.45** (3.31)	8.68** (3.32)
Dem. incumbency advantage	7.50 (6.23)	7.41 (5.99)	6.83** (1.14)	5.96 (4.02)
Dem. quality advantage	1.52 (1.22)	1.23 (1.09)	5.70** (1.48)	4.38* (2.34)
Dem. spending advantage	3.16* (1.27)	3.00* (1.32)		
Dem. partisan advantage	.27** (.04)	0.22** (.04)		
Number of cases	95	95	95	95
Adjusted R ²	.739	.748	.619	.635

* $p < .05$, ** $p < .01$, one-tailed test.

Notes: For these analyses the dependent variable was the Democratic candidate's proportion of the two-candidate vote in the senate election, multiplied by 100. The voting specification used to estimate the parameters reported in columns 1-2 is given by equation 4 in the text. The coding and definitions of the independent variables is presented in Appendix B.

Figure 1. Distribution of Candidates' Positions and of Mean State Ideologies, U.S. Senate Elections 1988-90-92



Notes. The candidates' positions represent the mean position assigned to the candidate by all respondents in the Pooled Senate Study who could place the candidate along the 1-7 Liberal Conservative scale. The mean state ideology represents the mean ideological self-placement of all respondents from the state who self-placed on the 1-7 Liberal-Conservative scale in the year that a Senate election was held.

**Figure 2. Candidate Positioning 1988-92:
Republican Candidates versus Democratic Candidates**

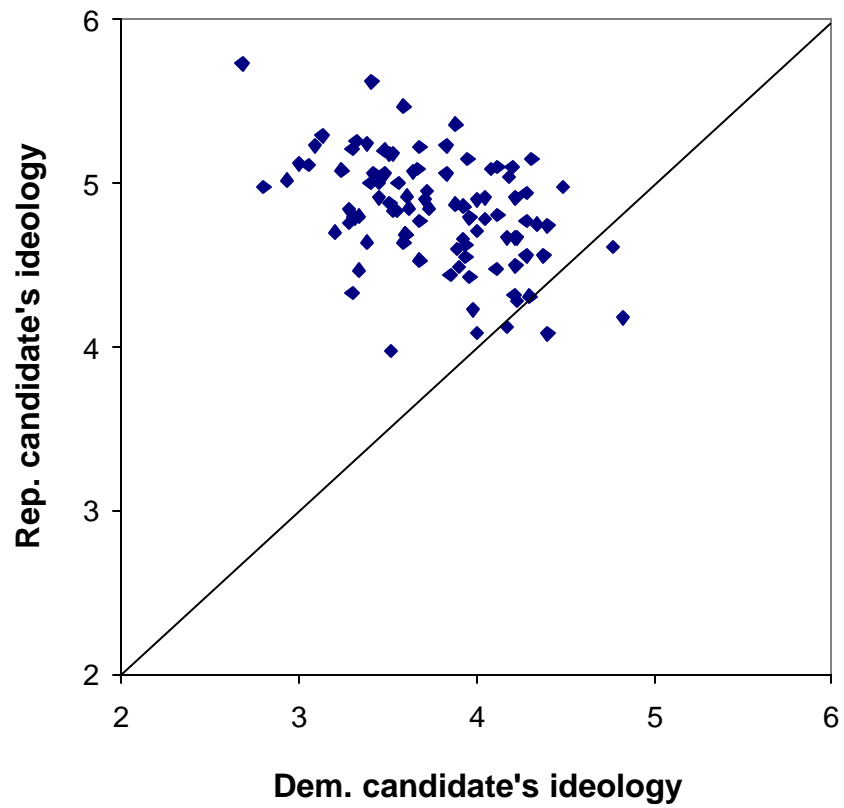
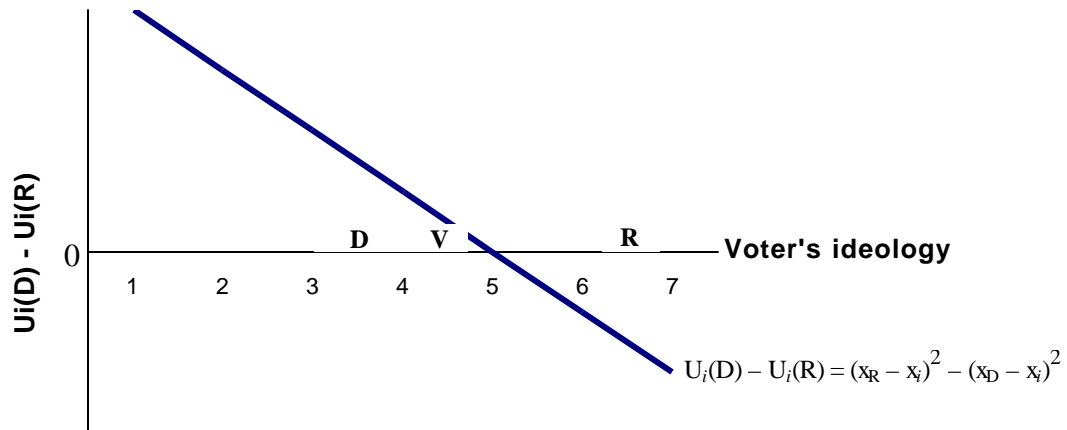


Figure 3. Voter Utility Functions for Proximity Motivations and for Directional/Discounting Motivations

3A. Utility function for proximity motivations



3B. Utility function for discounting/directional motivations

