Voter Turnout and Candidate Strategies in American Elections

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Previous version of this paper were presented at the annual meeting of the Public Choice Society, March 10-12, 2000, in Charleston, SC, and the quarterly meeting of the Southern California Methodology Program, May 12-13, 2000, at UC Santa Barbara. We thank Barry Burden, Lorraine McDonnell, Anthony McGann, Steven Weatherford, and three anonymous referees for valuable suggestions. Any remaining errors are our sole responsibility.
Abstract

Most spatial models of two-candidate competition imply that candidates have electoral incentives to present similar, centrist policies. We modify the standard Downsian model to include three observations supported by empirical research on American elections: that voters are prepared to abstain if neither competitor is sufficiently attractive (abstention due to alienation) or if the candidates are insufficiently differentiated (abstention due to indifference); that voters are influenced by factors such as education, race, and partisanship, that are not directly tied to the candidates’ positions in the current campaign; and that voters’ nonpolicy characteristics correlate with their policy preferences. We argue that all these conditions (except indifference) motivate vote-seeking candidates to present divergent policies that reflect the beliefs of voters biased towards them for nonpolicy reasons. We support our argument with applications to ANES data which suggest that in the 1988 presidential election, both the Democratic candidate Dukakis and the Republican Bush had electoral motivations to present policies that reflected the beliefs of their partisan constituencies, and that the threat of abstention due to alienation is crucial to that conclusion.

Our results suggest that voters’ turnout decisions and their nonpolicy characteristics, even if the candidates in the course of a campaign cannot manipulate the latter, are nonetheless necessary for understanding candidates' policy strategies. Our conclusions have additional implications for the strategies candidates may feasibly employ when they pursue policy objectives other than maximizing support in the general election, such as achieving policy objectives or maximizing their joint probabilities of winning both the primary and the general election.
Since the publication of Anthony Downs’ *An Economic Theory of Democracy* in 1957, spatial modelers have been troubled by a conflict between theory and empirical observation: namely, that while spatial theory predicts that the competing candidates in two-candidate elections will present similar, centrist positions, the policies that American presidential and congressional candidates actually present diverge from each other, with Democratic candidates consistently advocating policies more liberal than those of their Republican opponents (see, e.g., Ansolabehere, Stewart, and Snyder, 2001; Burden, 2001; Erikson and Wright, 1993, 1997; Page, 1978). This conflict between theory and empirical observation has motivated spatial modelers to expand the basic Downsian model, in an effort to account for this anomaly. These elaborations include: studies that analyze the effects of candidates’ policy motivations (Wittman, 1973, 1983; Calvert, 1985; Cox, 1984; Chappel and Keech, 1986), analyses of the strategic implications of potential entry by third parties (Palfrey, 1984; Callander, 2000); studies of the influence of party activists (Aldrich, 1983a,b) studies that explore the implications of restrictions on candidate positioning (Kramer, 1977; Kollman, Miller, and Page, 1992; see also Downs, 1957, pp. 107-113). In addition, scholars both within and without the spatial modeling subfield have emphasized the polarizing effects of primary elections (see, e.g., Polsby, 1980; Fiorina, 1973, 1974; Burden, 2000; Owen and Grofman, 1997; Coleman, 1971).

Although several of the spatial modeling studies cited above are classics in the literature, they all explain policy divergence either by expanding the model of candidate motivations to include objectives other than winning the general election, or by restricting the set of candidates’
feasible strategies. Thus these models do not call into question the implication of the basic Downsian model, that in two-person elections the candidates have electoral motivations to move as close to the center as is feasible. In addition, with the exception of the studies on policy motivations these models do not account for the form of policy divergence observed in realworld elections, in which Democratic candidates consistently locate to the left of Republicans.

In this paper we propose an alternative explanation for candidate policy divergence in general elections, which focuses purely upon the candidates’ electoral incentives. Specifically, we explore office-seeking candidates’ strategic motivations in situations where voters decide not only which candidate to support but also whether to vote or to abstain. Furthermore, unlike previous turnout-based spatial models (e.g., Riker and Ordeshook, 1968; Hinich and Ordeshook, 1970; Enelow and Hinich, 1984), we incorporate a finding supported by extensive empirical voting research: that in addition to policies, citizens’ turnout decisions and their candidate preferences are influenced by measured factors not tied to the candidates’ positions in the current campaign. These nonpolicy variables – i.e. variables that have been found to influence voting behavior even when controlling for voters’ policy preferences – include the voter’s political efficacy; sociodemographic characteristics such as education, income, and race; candidate images; and party identification. We label voting models that incorporate measured nonpolicy-related factors that influence voter turnout and choice unified turnout models.

We demonstrate, both with illustrative arguments and empirical applications, that the nonpolicy factors that influence voters – even if candidates in the course of an election campaign cannot manipulate them – strongly affect candidates’ strategies, an effect we must take into ac-
The central reason is one that we have previously identified in the context of multicandidate elections (see Adams and Merrill, 1999a b; Merrill and Adams, forthcoming; Adams 2001a b): namely, that in two-candidate contests, office-seeking candidates are motivated to appeal on policy grounds to voters who are likely to support them in part for nonpolicy reasons. Thus Democratic candidates have incentives to appeal to Democratic party identifiers, the working class, and racial minorities – groups that have been historically linked to the Democrats, and who typically support Democratic candidates at high rates independently of these candidates’ positions in the current election – while Republican candidates are moved to present policies that reflect the beliefs of middle class, Republican partisans. However, these incentives only obtain provided that members of these voting groups are prepared to abstain in the event they find neither candidate sufficiently attractive. The strategic logic that drives this result is that due to voters’ non-policy-related motivations the candidates cannot alter most voters’ candidate preferences via policy appeals, but they can affect voters’ turnout decisions. And when abstention is due to alienation, each candidate is motivated to appeal to his own voting constituency since he can affect his supporters’ turnout decisions but not the decisions of the rival party’s supporters, since the latter depend on these supporters’ evaluations of the rival candidate.

By contrast, we find that abstention from indifference does not similarly motivate policy divergence by office-seeking candidates, a conclusion consistent with results reported by Erikson and Romero (1990, pp. 1120-21). This is because when abstention is due to indifference each candidate has incentives to appeal to the rival candidate’s constituency as well as his own supporters, since in this case candidates can influence the rival supporters’ turnout decisions by di-
minishing these supporters’ utility differentials between the candidates. Thus both elements of the unified turnout model – the distinction between abstention from alienation versus indifference, and the inclusion of voters’ nonpolicy-related motivations – are crucial for understanding candidates’ strategic incentives.

Our results have important implications for candidate policy strategies and for political representation. On candidate strategies our results suggest, first, that in elections where candidates single-mindedly seek office our model illuminates the fact that Democratic candidates typically present leftist policies while Republicans locate on the right. Second, in the more general situation where candidates pursue multiple objectives, the office-seeking strategies we obtain are usually compatible with alternative goals including policy-seeking, deterring entry by third candidates, and winning primary elections.

With respect to political representation, our results suggest that when candidates craft their policy strategies to account for turnout effects and for voters’ nonpolicy-related motivations, this enhances representation in two ways: by motivating the candidates to present divergent policies that offer voters a genuine choice, and by motivating candidates to advocate policies that reflect the beliefs of their traditional voting constituencies. The latter result also illuminates the empirical finding that Congressional representatives’ roll-call votes are more responsive to shifts in the policy preferences of their party’s partisans than they are to policy shifts from independents or from the rival party’s partisans (see Bishin, 2000).
2. A Turnout-Based Voting Model that Includes Nonpolicy Components

A behavioral model of candidate choice

In contrast to spatial modelers who emphasize policy motivations, behavioral researchers find that voters’ candidate evaluations are influenced by a variety of considerations, many of which are not tied to the candidates’ positions in the current election. These include: voters’ sociodemographic characteristics, party identification, candidate images, and retrospective evaluations of incumbent performance (see Campbell et al., 1960; Alvarez and Nagler, 1995; Markus and Converse, 1979; Fiorina, 1981; Page and Jones, 1979). Thus the measured component of a voter $i$’s utility $U_i(K)$ for a candidate $K$ is written:

$$U_i(K) = \sum_j A_j V_{ij}(K) + B_K t_i$$

(1)

where the $A_j$ represent the coordinates of a vector of parameters and $V_{ij}(K)$ represents the voter’s evaluation of candidate $K$’s position along the $j$th policy dimension. $t_i$ is a vector of characteristics unique to the voter (sociodemographic characteristics, partisanship, etc.) and $B_K$ represents a vector of parameters to be estimated. Most empirical voting studies employ a specification similar to equation 1 to represent the measured components of voters’ candidate evaluations, with voters choosing the candidate that maximizes their utilities (see, e.g., Alvarez and
Incorporating the turnout decision: The unified turnout model

Although equation 1 specifies voters’ preferences over the competing candidates, this model does not address citizens’ decisions about whether to vote or to abstain. Given that approximately half the American electorate abstains in presidential elections, candidates plausibly take this factor into account when weighing their policy strategies. In recent years a number of studies have proposed unified voting models that incorporate abstention as an option along with the choice of voting for one of the candidates (see, e.g., Burden and Lacy, 1999; Lacy and Burden, 1999; Dow, 2000; Sanders, 1998; Herron, 1998; Morgan, 1996).6

The unified turnout model we present is based on that developed in (Adams, Dow, and Merrill, 2001). First we incorporate the specification introduced by Lacy and Burden (1999), which is consistent with abstention from alienation. Specifically, let $T_i(A)$ represent the measured components of a voter $i$’s alienation threshold, which is the minimum candidate utility such that $i$ prefers voting for the candidate to abstaining from alienation. This threshold may depend on such variables as the voter’s political efficacy, and sociodemographic characteristics such as education and class:

$$T_i(A) = B_A t_i,$$  \hspace{1cm} (2)
where

$t_i'$ is a vector of the voter’s characteristics that influence her utility from abstention. Note that $t_i'$ may differ from $t_i$, the characteristics that affect the voter’s utility for the candidates. For instance, it appears plausible that political efficacy influences the turnout decision but does not affect the voter’s preferences over candidates.

A second motivation for abstention is that the voter’s difference in utilities between the candidates is insufficient to motivate her to cast a ballot. In this case, she abstains from indifferece. Formally, let $T_i(I)$ represent voter $i$’s indifference threshold, which is the minimum utility differential between the candidates such that the voter prefers voting to abstaining. We express the voter $i$’s indifference threshold as:

$$T_i(I) = \exp[\mathbf{B}_i t_i'']$$

(3)

where $t_i''$ is a vector of the voter’s characteristics that influence her tendency to abstain from indifference, such as sociodemographic variables and political efficacy, and $\mathbf{B}_i$ is a vector of parameters to be estimated. We use an exponential form for $T_i(I)$ because the threshold cannot be negative. A voter abstains from indifference if her utility differential between the candidates is lower than $T_i(I)$.
According to our model, a voter votes for her preferred candidate if her utility for that candidate exceeds her alienation threshold and the differential between her utilities for the two candidates exceeds her indifference threshold. We label this model—which combines the voter’s turnout decision and the choice between candidates—the **unified turnout model**.

Previous empirical studies have generally concluded that both indifference and alienation contribute to abstention in presidential elections (see Riker and Ordeshook, 1968; Brody and Page, 1973; Hinich, 1978; Guttman et al., 1994; but see Grofman and Weisberg, 1978). In particular, the study by Adams, Dow, and Merrill (2001)–the only study we are aware of which distinguishes between alienation and indifference in the context of a unified turnout model—concludes that both motivations contributed significantly to abstention in the 1980-84-88 presidential elections, with alienation depressing turnout to a somewhat greater extent than indifference. In the next section we show that the distinction between alienation and indifference is important, because these motivations provide candidates with contrasting strategic incentives.

### 3. Candidate Strategies under the Unified Turnout Model:

**Illustrative Arguments**

As noted above, although spatial modelers have extensively explored the strategic implications of voter turnout, these models typically incorporate the assumption that candidates’ positions are the only measured influence on the vote choice (see, e.g., Hinich and Ordeshook, 1970; Davis, Hinich, and Ordeshook, 1970; Enelow and Hinich, 1984; Anderson and Glom, 1992).
These studies conclude that for most realistic election scenarios, turnout effects do not alter the basic logic of the Downsian model, that office-seeking candidates have incentives to present similar, centrist positions. Here we present illustrative arguments that when candidates account simultaneously for turnout effects and for voters’ nonpolicy-related motivations, then abstention from alienation tends to draw candidates away from the center, in the direction of their partisan constituencies.

For these illustrations we analyze a simplified election context that permits us to isolate the ways in which voters’ nonpolicy motivations and their turnout decisions interact. Our illustration assumes deterministic voting and a linear loss function and considers only liberal-conservative ideology, partisanship, and abstention due to alienation or indifference. Specifically, in equation 1 let the policy salience parameter \( A = 1 \). We consider only one non-policy variable, namely, partisanship. Let \( t_i = 1 \) if the voter identifies with the candidate’s party and zero otherwise and let \( B \) be the associated parameter for the salience of partisanship. In equations 2 and 3 we set the alienation and indifference parameters to the constants \( T_A \) and \( T_I \) for all voters. Thus for Democratic partisans, \( U_i(D) = B - |x_i - D| \) and \( U_i(R) = -|x_i - R| \), whereas for Republican partisans, \( U_i(D) = -|x_i - D| \) and \( U_i(R) = B - |x_i - R| \) where \( x_i \) represents the voter’s left-right position, \( B \) represents partisans’ utilities for their party’s candidate due to partisan loyalty, and \( D \) and \( R \) are the positions of the Democratic and Republican candidates respectively.
We assume a voter distribution composed entirely of two partisan constituencies: a Democratic constituency with density function $f_D$ and a Republican distribution with density function $f_R$. For the illustration we further assume that $f_D$ and $f_R$ are each symmetrically distributed (for example, normal), that each distribution extends to plus and minus infinity, and that each density function declines monotonically as one moves away from the positions of the median (mean) Democrat $\mu_D$ and the median (mean) Republican $\mu_R$. We further assume that $f_D$ and $f_R$ are identical except for location, with $\mu_D < \mu_R$, i.e. that Republicans are on average more conservative than Democrats are. The overall voter distribution $f = \frac{f_D + f_R}{2}$, pictured in Figure 1, is also assumed to decline monotonically as one moves away from $\mu = \frac{\mu_D + \mu_R}{2}$, the position of the median voter. The NES data analyses we report below suggest that this illustrative example roughly approximates the actual distribution of American voters’ policy and partisan inclinations.

[FIGURE 1 ABOUT HERE]

The policy-only turnout model: The candidates stay at the center. Initially we consider a policy-only turnout model in which partisanship does not affect utility (i.e. $B = 0$). Specifically, we consider the case where the Republican is positioned at the location of the median voter (i.e. $R = \mu$), and the Democrat is positioned at $D$, to the left of $\mu$. 
First, consider the strategic dynamics relating to abstention from alienation. As the Democratic candidate moves in the positive direction (to the right), he draws support away from the Republican candidate in the region near the midpoint between the two candidates' positions, i.e., near

\[ c_{DR} = (D + R) / 2. \]

In fact, if the Democrat moves a distance \( \varepsilon \), the midpoint \( c_{DR} \) moves a distance \( \varepsilon / 2 \) (see Figure 1). Because each vote picked up by the Democrat is a loss of a vote for the Republican, the change in the margin for the Democrat relative to the Republican is

\[
2(\varepsilon / 2) f[(D + R) / 2] = \varepsilon \times f[(D + R) / 2] \tag{4}
\]

Thus, the rate of change of the margin for the Democrat over the Republican is given\(^7\) by \( f[(D + R) / 2] \).

At the same time the Democrat loses votes to abstention due to alienation near the point where \( T_A = U(D) \), i.e., near \( D - T_A \) (see Figure 1). Specifically, when the Democrat moves a distance \( \varepsilon \) to the right of D, the point \( D - T_A \) moves by the same amount and in the same direction. Thus, the Democrat loses votes to abstention at the rate of \( f(D - T_A) \). If \( D + T_A \) is to the
left of $(D + R)/2$, the Democrat also gains votes from abstention at the rate of $f(D + T_A)$ (otherwise, $U(R) > U(D)$ near $D + T_A$ so that a voter there would vote Republican in any event).

We conclude that the overall rate of gain for the Democratic candidate when moving to the right is

$$f[(D + R)/2] - f(D - T_A),$$

(5)

plus a possible additional positive term, $f(D + T_A)$. It follows that, if the voter density $f$ is greater near $(D + R)/2$ than near $D - T_A$ (as in our example), any movement of the Democratic candidate toward the position of the Republican candidate will result in a net gain relative to the vote share of the Republican. We conclude that the Democrat has an electoral incentive to converge to the position of the Republican.

The unified turnout model: Abstention from alienation motivates the candidates to reflect their partisan constituencies’ policy preferences. Next, we incorporate party ID, obtaining a unified turnout model. Specifically we now assume that $B > 0$, i.e., that partisans are biased in favor of their party’s candidate. To our knowledge the only previous spatial analysis of this model is by Erikson and Romero (1990, pp. 1120-21), who conclude that when voters abstain entirely from indifference then the candidates will converge to identical positions. However in Appendix 1 we demonstrate the
following lemma, which implies that the introduction of abstention from alienation changes this conclusion:

**Lemma 1**: Assume the conditions on the voter distribution detailed for our illustrative example. Then given $B > T_A$, $B > T_I$, and $B < \infty$, (i.e. not all voters abstain due to alienation and partisans’ biases are sufficiently strong that they do not abstain from indifference when the candidates take identical positions), under the unified turnout model any possible equilibrium configuration must find the Democratic candidate taking a position strictly to the left, and the Republican candidate strictly to the right, of the median voter position $\mu$.

Lemma 1 implies that under the unified turnout model the candidates have strategic incentives to diverge from the center, in the direction of their partisan constituencies’ policy preferences. What drives this result? While the strategic dynamics of candidate competition for the unified turnout model are complex, here we focus on a specific scenario that captures the central intuition about why abstention from alienation – but not indifference – motivates candidate divergence. This is the case where $D$ locates to the left of $R = \mu$ but the policy distance between $D$ and $R$ is less than $B$, as in Figure 2. As long as this condition holds, all voters prefer their party’s nominee to the rival candidate due to partisan loyalties.

First, consider the strategic dynamics relating to abstention from alienation. Marginal shifts in $D$’s position do not affect Republican partisans’ behavior, because such shifts alter neither these partisans’ preference for the Republican candidate over the Democrat, nor their calculus about whether they evaluate the Republican candidate positively enough to refrain from ab-
staining from alienation. However, marginal rightward shifts in the Democratic candidate’s position do affect Democratic partisans’ turnout decisions, in that such shifts prompt additional Democrats located to the left of $D$ to abstain from alienation, and additional Democrats to the right of $D$ to turn out to vote Democratic. The overall rate of change in $D$’s vote margin vis-à-vis $R$ is

$$- f_D(D - [B - T_D]) + f_D(D + [B - T_D]).$$

(6)

Because the Democratic partisan distribution is centered to the left of the overall voter distribution, the Democratic candidate’s vote margin will decline if he converges to the Republican candidate’s position. This is illustrated in Figure 2, which shows that, so long as $D$ is located in the policy interval $[\mu_D, \mu]$, $D$ loses support by shifting towards the center – i.e. $D$ has a strategic incentive to diverge from the position of the median voter, in the direction of his partisan constituency. The central intuition is that due to voters’ partisan loyalties, for this scenario the candidates cannot affect voters’ preferences between the candidates but the candidates can affect voters’ turnout decisions. And, when abstention is due to alienation, each candidate is motivated to appeal to his own partisan constituency since he can affect his supporters’ turnout decisions but not the decisions of the rival party’s supporters, since the latter depend solely on these supporters’ evaluations of the rival candidate.

This strategic intuition depends on three factors: that voters are prepared to abstain from alienation; that voters display partisan loyalties in addition to policy motivations; that these parti-
san loyalties correlate with voters’ policy positions. Below we show that empirically all three conditions were satisfied in the 1988 U.S. presidential election.

Finally, we incorporate abstention from indifference. Consider first the case in which the distance between $D$ and $R$ exceeds $(B - T_i)$, where as before $T_i$ is the indifference threshold. Now rightward shifts by the Democratic candidate gain additional votes from Democratic partisans located between $D$ and $R$ near the position $[(D + R)/2 + (B - T_i)/2]$ and from Republican partisans located between $D$ and $R$ near the position $[(D + R)/2 - (B - T_i)/2]$; both of these groups switch from abstaining due to indifference to voting for $D$. Hence, the introduction of abstention from indifference provides added incentives for candidate convergence, compared with the alienation-only model. Appendix 2 presents additional analysis of the candidates’ support functions.

If, however, $D$ and $R$ are sufficiently close that $[B - T_i]$ exceeds the distance between $D$ and $R$, then no voters abstain due to indifference. In this case the strategic logic of candidate competition is identical to the alienation-only model explored above, so that the candidates again have strategic incentives to diverge from the center in the direction of their partisan constituencies’ policy preferences.

We conclude that in situations where abstention due to indifference affects candidates’ calculations, it provides additional strategic incentives for the Democratic candidate to shift towards the Republican. The central intuition is that indifferent voters are always located between the two candidates’ positions, so that appealing to such voters necessarily motivates conver-
gence. But Lemma 1 suggests that in the presence of abstention due to alienation, this motivation only goes so far. As the Democrat approaches the Republican at the median voter position, she stands to lose more of her partisans to abstention due to alienation on the left where they are concentrated than on the right where they are few.

Figure 3 illustrates the unique equilibrium that exists for our hypothetical example, given plausible values for the unified turnout model parameters: $B = 2$, $T_A = -0.5$, and $T_r = 0.5$. We assume that each group of partisans is normally distributed with common standard deviation $= 1$ and with a mean at 3 for Democratic partisans and a mean of 5 for Republican partisans. The equilibrium occurs at approximately the values $D = 3.25$ and $R = 4.75$, i.e., at distinct values for the Democrat and the Republican.

We have developed this illustration at length in order to convey the strategic logic of candidate competition under the unified turnout model. Our illustration suggests that the policy-only turnout model motivates office-seeking candidates to converge to identical policy positions, but that the unified turnout model motivates candidate divergence. Furthermore, this policy divergence is driven by abstention from alienation rather than indifference, since it is the combination of voters’ alienation and their partisan biases that motivate candidates to appeal to their own partisan constituencies, since these candidates can affect their own supporters’ turnout decisions but not the turnout decisions of the rival candidate’s supporters.
However, our illustrative scenarios in which the candidates take divergent positions that reflect their voting constituencies’ beliefs do not prove that this is a general strategic incentive. Moreover, our simplified examples omit many features of realworld electorates that candidates may consider important. These include: the presence of independent voters in the electorate; additional measured voting influences arising from group loyalties; unmeasured voter motivations which render voters’ decisions probabilistic from the candidates’ perspectives; multiple policy dimensions. Below we explore the logic of candidate competition in an historical context, the 1988 American presidential election, which permits us to explore each of these complicating factors.


Four hypotheses on voting behavior and candidate strategies in 1988

We summarize the arguments from the previous section in terms of four hypotheses on candidate strategies in the 1988 presidential election, which we test below. The 1988 election is appropriate for our purposes since our central theoretical argument is that candidates will diverge in two-candidate contests. 1988 is the most recent U.S. presidential election that did not feature a major third-party candidate and the 1988 National Election Study (NES) is the most recent study to include validated voting data, which is important since respondents’ over-reporting of turnout in subsequent studies is a serious problem. We note that we have also tested each of
our hypotheses using data from the 1980 NES and the 1984 NES. The results, which are available from the authors upon request, yield conclusions similar to those we report for 1988.

Each hypothesis below applies to candidates’ margin-maximizing policy positions for an empirically-estimated turnout model. Our first hypothesis tests our central theoretical argument:

**H1: For a unified turnout model, we find that Dukakis’s optimal positions diverge significantly from Bush’s optima along the policy scales included in the 1988 NES.**

Specifically, our arguments from Section 3 suggest that Dukakis’s computed policy optima will be more liberal than Bush’s, since the elements of the Democratic party’s voting constituency typically take more liberal positions than does the Republican constituency.

Note that the logic underlying Hypothesis 1 implies that the candidates’ incentives to adopt divergent policies can vary across policy domains. On issues where Democratic and Republican partisans disagree sharply – such as traditional left-right economic issues – the candidates’ incentives to reflect their voting constituencies’ beliefs may prompt them to present distinctly divergent policies. By contrast, issue domains which do not sharply divide Democratic from Republican partisans (such as certain kinds of foreign policy debates) should not similarly motivate office-seeking candidates to present divergent positions. This suggests a second hypothesis, one that we can explore using the multiple policy scales included in the 1988 NES:
H2: For a unified turnout model, we find that the greater the degree of divergence between Democratic and Republican partisans’ self-placements along a given policy dimension, the greater the divergence between the candidates’ optimal positions along the dimension.

To the extent that Hypothesis 2 is supported, this will support our argument that candidate policy divergence is driven by the divergent views held by the Democratic and Republican parties’ voting constituencies.

Our third and fourth hypotheses concern candidate strategies for two alternative voting models. Both the illustrative arguments from Section 3 and the results presented in prior spatial modeling studies (e.g., Riker and Ordeshook, 1968; Hinich and Ordeshook, 1970; Enelow and Hinich, 1984; Anderson and Glom, 1994; Erikson and Romero, 1990), suggest the following hypotheses:

H3: For a policy-only turnout model – i.e. one that omits measured nonpolicy variables – we find that the major candidates’ vote-maximizing policy positions converge along the policy scales included in the 1988 ANES.

H4: For a unified turnout model that omits abstention from alienation – i.e. one in which abstention is specified as being motivated solely by indifference – we find that the ma-
Major candidates’ vote-maximizing policy positions converge along the policy scales included in the 1988 ANES.

Hypotheses 3-4 are important because if they are supported this will bolster our central theoretical claim, that while the combination of voters’ nonpolicy-related motivations and abstention from alienation motivates candidate divergence (H1), neither alienation nor nonpolicy motivations alone motivates policy divergence (H3-H4).

A unified turnout model of the 1988 presidential vote

To test our first hypothesis we estimated the parameters of a unified turnout specification for the 1988 ANES respondents. For this specification, which we discuss in detail in (Adams, Dow, and Merrill, 2001), we expanded equations 1 and 2 to include random components which represent aspects of voter decision-making which are not measured in the survey. This is consistent with the standard behavioral voting specification which views survey respondents’ voting and turnout choices as probabilistic, from the analyst’s perspective. Each voter $i$’s utilities for voting for candidate $K$, $U_i(K)$, and $i$’s alienation threshold $T_i(A)$ and indifference threshold $T_i(I)$ are given by:

$$U_i(K) = \sum_j A_j Y_j(K) + B_k t_i + \varepsilon_{ik}$$

(7)
where the $\varepsilon_i$ are random disturbance terms which represent unmeasured sources of the voter’s utilities. We use the conditional logit model, in which each random component is generated independently from a type I extreme value random distribution. The conditional logit has been used extensively in empirical voting studies (see Endersby and Galatas, 1998; Merrill and Grofman, 1999; Adams and Merrill, 1999a b).

With respect to policy voting, we employed the seven-point ideology and policy scales included the 1988 ANES: liberal-conservative ideology, domestic spending, health insurance, government aid to minorities/blacks, guaranteed jobs, dealing with Russia, women’s role, and defense spending. For each of these dimensions we assumed that respondents’ candidate utilities decreased with the (squared)$^{11}$ distance between the voter’s preferred position $x_{ij}$ and the candidate $K$’s position $s_{kj}$ along the $j$th dimension:

$$V_{ij}(K) = -(x_{ij} - s_{kj})^2$$

We model citizens’ utilities for the candidates as a function of: party identification; ideological distance to each candidate; average policy distance to each candidate; respondent assessment of candidate character; race; and retrospective evaluations of the national economy. We
model citizens’ alienation and indifference thresholds as a function: race, education, political efficacy, previous vote, and perceived election closeness. Each of these variables has been identified as important in prior research on candidate choice and voter turnout (see, e.g., Alvarez and Nagler, 1995; Lacy and Burden, 1999; Markus and Converse, 1979; Sanders, 1998; Dow, 2000; Wolfinger and Rosenstone, 1980). Our coding rules are given in Appendix 3, along with the complete model specification. The ANES variable identifiers are described in detail in (Adams, Dow, and Merrill, 2001).

We estimated the model so specified based upon the subsample of 1389 respondents included in the 1988 ANES, who could self-place on the liberal-conservative dimension. In calculating the policy distance variables, for simplicity, we took the candidates’ positions as the mean respondent candidate placement along each dimension.

Table 1 reports the parameter estimates and the standard errors for this unified turnout model. As expected the coefficients relating to partisanship, ideological distance, policy distances, and candidate character in column 1 are statistically significant at the .01 level and show the expected signs. With respect to respondents’ turnout decisions, the coefficients reported in columns 2-3 suggest that blacks abstain disproportionately from alienation, that high levels of political efficacy reduce the likelihood that voters abstain from indifference and that respondents who reported voting in the previous election are less likely to abstain in the current election than are those who abstained previously.

We use the coefficients in Table 1 to predict the probabilities that each respondent voted for the Democratic candidate, voted Republican, or abstained. Using the mean values as the
expected outcomes, Table 2 reports predictions for the abstention rate and the candidates’ vote percentages among NES survey respondents for the unified turnout model (row 2). These closely match the NES’ respondents’ actual aggregate behavior (row 1).\textsuperscript{13}

\begin{center}
\textbf{Candidate positioning and electoral outcomes under the unified turnout model}
\end{center}

We now evaluate Hypotheses 1 and 2, that under the unified turnout model Bush and Dukakis have electoral incentives to present divergent policy positions, and that this incentive increases with the degree of divergence between Democratic and Republican partisans’ policy preferences. For this exercise we performed an equilibrium analysis, since we might expect that over the period of a presidential election campaign the candidates will continuously jockey for the best policy location vis-à-vis their opponent, and eventually settle down to a stable configuration from which no further movement would benefit either candidate. Spatial modelers emphasize the search for such Nash equilibrium configurations in candidate strategies, and equilibria have also been explored in studies of candidate strategies in historical elections (see Erikson and Romero, 1990; Schofield et al., 1998a; Adams and Merrill, 1999b).\textsuperscript{14}

The Nash equilibrium positions for ideology and each of the seven policy issues are reported in Table 3, in columns 1-2.\textsuperscript{15} Bootstrap standard errors for these positions are given in parentheses.
Three important conclusions emerge from this analysis. The first is that Dukakis’s optimal positions are distinct from, and more liberal than, Bush’s optimal positions along all of the policy and ideology dimensions.\(^{16}\) This supports Hypothesis 1, that in spatial competition under the unified turnout model, candidates have electoral incentives to present divergent positions that reflect the beliefs of their partisan constituencies.

Second, the degree of divergence between the candidates’ optima along the policy dimensions in the NES increases with the degree of divergence between the Democratic and Republican partisans’ self-placements on these dimensions (see Table 4). This supports Hypothesis 2. The largest area of policy disagreement between the parties’ partisans is on the national health insurance dimension, where the mean Democratic partisan’s self-placement is 3.37 and mean Republican’s self-placement is 4.58 (see Table 4, column 4); the largest spread between the candidates’ computed policy optima is also on the health insurance dimension (see Table 3, column 3). Furthermore, the two dimensions for which Democratic and Republican partisans’ mean self-placements positions are similar – Dealing with Russia and Women’s Role – are also the two dimensions for which the candidates’ computed optima are virtually identical. Overall the correlation between the degree of partisan policy dispersion along the policy dimensions and the dispersion of the candidates’ equilibrium positions is 0.96.
Finally, note that although the two candidates’ optima diverge under the unified turnout model they are still rather centrist and rather similar to each other. The most extreme optimum is Bush’s optimum position on government jobs programs (4.79), which is only 0.32 policy units to the right of Dukakis’s optimal position (4.47); furthermore, the candidates’ optima are separated by less than 0.4 policy units along each policy dimension. Thus under the unified turnout model we find that the candidates’ optimal positions are similar to but less extreme than the positions of their partisan constituencies.

5. Alternative Models of the Vote

Candidate strategies for a policy-only turnout model

In contrast to the unified turnout model explored above, most spatial modeling studies omit measured nonpolicy variables. Here we evaluate Hypothesis 3, that such a voting model motivates candidates to present convergent policies – the standard result in the spatial modeling literature. To explore this hypothesis we estimated the parameters of a policy-only turnout model that included only respondents’ policy evaluations as independent variables. The parameter estimates for this model are reported in Table 1. Note that the log-likelihood for this policy-only specification is significantly worse than the log-likelihood for the unified specification,
suggesting that in excluding nonpolicy variables the policy-only turnout model loses significant explanatory power. ¹⁷

Table 5A reports the candidates’ computed policy optima for the policy-only turnout model, with parametric bootstrap standard errors in parentheses. As expected, these results support Hypothesis 3, that the policy-only model motivates the candidates to present convergent policies in equilibrium.

Candidate strategies for a unified indifference-only turnout model

In their path-breaking analysis of candidate strategies and the behavioral model of the vote, Erikson and Romero (1990, pp. 1120-21) analyzed candidates’ policy strategies in the 1988 presidential election for a unified turnout model where abstention was specified as being motivated solely by indifference. Here we evaluate Hypothesis 4, that such a model motivates candidates to present convergent policies – the conclusion suggested by our illustrative arguments and supported by Erikson and Romero’s empirical results. To explore this hypothesis we estimated the parameters of a unified indifference-only turnout model, that was identical to the unified turnout specification estimated earlier except that we omitted the alienation threshold (i.e. the specification comprised the candidate utility functions given earlier by equation 7 and the indifference threshold given by equation 9). The parameter estimates for this model are given in Table 1. ¹⁸

Table 5B reports the candidates’ computed policy optima for the unified indifference-only turnout model, which support Hypothesis 4, that this model motivates the candidates to pre-
sent convergent policies. The candidates’ equilibrium positions are virtually identical to those obtained by Erikson and Romero (1990: see Table 2, column 8).

We conclude that while models that jointly incorporate nonpolicy variables and the possibility of abstention from alienation motivate the candidates to present divergent policies shaded in the directions of their partisan constituencies, models that omit nonpolicy variables and models that omit abstention from alienation do not. We find that the nonpolicy factors that influence voters – even if the candidates in the course of an election campaign cannot manipulate them – strongly affect the logic of candidate spatial competition. Furthermore, the distinction between abstention from alienation and indifference is also crucial for understanding candidate strategies, since we find that alienation – but not indifference – motivates candidate divergence.

6. Discussion

In the years since the publication of Anthony Downs’ *An Economic Theory of Democracy*, spatial modelers have proposed numerous explanations for why the contestants in two-candidate races fail to converge to the similar, centrist policies that Downs’ theory predicts. To our knowledge, however, none of these explanations imply that both candidates actually maximize their plurality in the general election by presenting divergent policy images. That is the
argument we present here. By combining two observations supported by extensive behavioral research – that voters are influenced by considerations such as race, class, and partisanship which are not entirely tied to the candidates’ positions in the current campaign, and that voters are prepared to abstain if neither competitor is sufficiently attractive – we have shown how vote-seeking candidates are rewarded for presenting divergent policies that reflect the beliefs of voters biased towards them for nonpolicy reasons.

We have supported our illustrative arguments with applications to ANES data that suggest that in the 1988 presidential election, both the Democratic candidate Dukakis and the Republican Bush had electoral motivations to appeal on policy grounds to their partisan constituencies. However, we find that this motivation does not extend to alternative voting specifications that omit nonpolicy variables, nor to specifications that incorporate nonpolicy variables but omit abstention from alienation. Hence we see the central contribution of this paper as highlighting the joint effects of voters’ nonpolicy motivations and turnout effects in two-candidate elections. This approach, we believe, illuminates not only the strategies of plurality-maximizing candidates, but also has implications for candidates who pursue policy objectives, or who seek to jointly maximize their support in the primary and general elections. In these latter cases, our approach implies that the electoral costs of suboptimal positioning in the general election are less than previous analyses have suggested.

Finally, our results suggest that many of the alternative candidate motivations that spatial modelers have explored – including policy-seeking, winning primary elections, deterring entry by third candidates, and mobilizing party activists – are more nearly compatible with pursuing
general election support than most analysts believe. Each of these alternative goals tends to draw candidates away from the center, and thus in the view of spatial modelers candidates must trade off these objectives against their desire to maximize support in the general election. Our results suggest a different conclusion, and one that would be welcomed by many politicians: that by shifting away from the center in the direction of their partisan constituencies, candidates can simultaneously advance all of the diverse objectives that plausibly motivate them to contest two-candidate elections.
References


Public Choice II (Fall): 35-60.


Groseclose, Tim. 2001. “A Model of Candidate Location When One Candidate Has a


Lemma 1: Assume the conditions on the voter distribution detailed for our illustrative example. Then, under the unified turnout model, given \( B > T_A, B > T_I, \) and \( B < \infty, \) any possible equilibrium configuration \((D, R)\) must satisfy \( D < \mu < R.\)

Proof: Note first that given the voter distribution assumed for our illustrative example, a candidate obtains as many votes as his opponent whenever he locates at a position symmetric to his opponent’s position with respect to \( \mu, \) the position of the median voter. This implies that both candidates must receive equal vote shares at equilibrium. Now suppose that \( R < \mu. \) Then if \( D \) pairs with \( R, \) each candidate receives support only from his own partisans and only from those in a common interval that is symmetric about the common point, \( D = R < \mu \) (note that given \( B > T_A, B > T_I, \) and \( B < \infty, \) this interval must be of finite, nonzero length). Because this point is closer to the median Democratic voter than the median Republican, this interval contains more Democrats than Republicans. Hence when \( R < \mu \) the Democratic candidate can defeat the Republican, which violates the condition that any equilibrium configuration must find the candidates receiving equal vote shares.

Next consider the case where \( R = \mu. \) Now the Democratic candidate can defeat the Republican by locating at any point in the policy interval \([\mu_D, \mu]\) such that \( B > (R - D). \) To see this, note that for such positioning the Democratic candidate receives support from Democrats.
located in the policy interval \([D - (B - T_A), D + (B - T_A)]\) while the Republican candidate is supported by Republicans located in the interval \([R - (B - T_A), R + (B - T_A)]\). (Here again the assumptions that \(B > T_A\), \(B > T_I\), and \(B < \infty\) ensure that these intervals are of finite, nonzero length.) These policy intervals are of equal width, but the Democratic candidate’s support interval is centered closer to the median Democratic partisan than the Republican candidate’s support interval is to the median Republican partisan. This implies that the Democratic candidate has a positive vote-margin vis-à-vis his opponent, which contradicts the condition for existence of equilibrium.

The above arguments establish that for any possible equilibrium configuration \(\mu < R\). Analogous arguments show that equilibrium requires that \(D < \mu\).
Appendix 2. Derivations for the Unified Turnout Model

We assume that all voters are party identifiers, with \( f_D \) and \( f_R \) representing the densities of the partisan groups, respectively. Under the unified turnout model, the transition points at which Democratic partisans switch from abstaining from indifference to voting for Democratic or switch from voting Republican to abstaining are given by

\[
c_{DR} = \frac{D + R}{2} + \frac{B \pm T(I)}{2} \quad , \quad (A1)
\]
as long as these points are between \( D \) and \( R \) (where \( B \) is the party ID salience parameter). The plus sign between the two main terms is replaced by a minus sign for Republican partisans. Focusing on Democratic partisans for the moment, the rates of movement of the transition points as \( D \) moves are given by

\[
\frac{\partial c_{DR}}{\partial D} = \frac{1}{2} \quad .
\]
The points at which \( T(A) = U(D) \) are given by \( c_A = D \pm [B - T(A)] \) as long as \( B > T(A) \) (otherwise, all voters abstain). It follows that \( \frac{\partial c_A}{\partial D} = 1 \). Thus, for Democratic partisans, the rate of change in the margin of the Democrat over the Republican as \( D \) moves is

\[
\frac{1}{2} f_D \left( \frac{D + R}{2} + \frac{B - T(I)}{2} \right) + \frac{1}{2} f_D \left( \frac{D + R}{2} + \frac{B + T(I)}{2} \right) - f_D \left( D - [B - T(A)] \right) + f_D \left( D + [B - T(A)] \right) \quad . \quad (A2)
\]
Similarly, for Republican partisans, the rate of change in the margin for the Democrat as $D$ moves is

$$\frac{1}{2} f_R\left(\frac{D+R}{2} - \frac{B-T(I)}{2}\right) + \frac{1}{2} f_R\left(\frac{D+R}{2} + \frac{B+T(I)}{2}\right) - f_R[D - [B - T(A)]] + f_R[D + [B - T(A)]]. \quad (A3)$$

Note that inclusion of the indifference threshold in the model (equations A2 and A3) replaces the densities evaluated at $\frac{D+R}{2} \pm \frac{B}{2}$ with averages of the densities at pairs of points on either side of these values, so that optimal values of $D$ and $R$ are only modestly affected.
Appendix 3: Coding and Model Specifications

Party identification is scored at 1 if the respondent identified with the candidate’s party and zero otherwise; average policy distance is the mean squared distance between the respondent’s self-placements and the candidate’s positions along the policy scales; candidate character is calculated as the average score the respondent assigned to the candidate on attributes such as intelligence, honesty, and leadership ability; race is scored at 1 if the respondent was black and zero otherwise; retrospective evaluation of the economy is coded from −2 (much worse) to 2 (much better). Each variable was included in the specifications for both the Democratic and the Republican candidate’s utilities except for race, which was omitted from the Republican candidate’s utility. This was necessary in order to identify the model since, as discussed below, race was also included in the specifications for respondents’ indifference and alienation thresholds.

Education is coded on a seven point scale ranging from less than high school education to post baccalaureate degree; political efficacy is calculated as the citizen’s mean self-placement on the ANES political efficacy scales (recoded on a scale from 0 to 1 representing low to high efficacy); previous vote is scored at 1 if the respondent reported having voted in the previous presidential election and zero otherwise; perceived election closeness is scored at 1 if the respondent believed the presidential election would be close and zero otherwise. Each variable was included in the specifications for both indifference and alienation except for election closeness, which was included only in the indifference specification. Our logic for this specification is that
election closeness is a proxy for the respondent’s perception of the likelihood of casting a decisive ballot, which is relevant to the instrumental decision to abstain from indifference but not to the expressive decision to abstain from alienation (see Adams, Dow, and Merrill, 2001).

Equations A4-A7 below display the specifications in the unified turnout model for the respondents’ candidate utilities, their alienation thresholds, and their indifference thresholds. The D and B designators refer to Dukakis and Bush respectively:

\[
U_i(D) = b_1(\text{Party ID}) + b_2(\text{squared ideological distance between } i \text{ and } D) \\
+ b_3(\text{mean squared policy distance between } i \text{ and } D) + b_4(\text{D. character}) \\
+ b_5(\text{retrospective economy}) + b_6(\text{race}) + \varepsilon_{iD} \\
= V_i(D) + \varepsilon_{iD} \tag{A4}
\]

\[
U_i(B) = b_7 + b_1(\text{Party ID}) + b_2(\text{squared ideological distance between } i \text{ and } B) \\
+ b_3(\text{mean squared policy distance between } i \text{ and } B) + b_4(\text{B. character}) \\
+ b_8(\text{retrospective economy}) + \varepsilon_{iR} \tag{A5}
= V_i(B) + \varepsilon_{iR}
\]

\[
T_i(A) = b_9 + b_{10}(\text{race}) + b_{11}(\text{efficacy}) + b_{12}(\text{previous vote}) + b_{13}(\text{education}) + \varepsilon_{iA} \tag{A6}
= V_i(A) + \varepsilon_{iA}
\]
\[ T_i(l) = \exp[b_{14} + b_{15}(race) + b_{16}(efficacy) + b_{17}(previous\ vote) + b_{18}(education) + b_{19}(perceived\ election\ closeness)] \]

\[ = V_i(l) . \] 

Note that in these equations we constrain each of the coefficients (b_1-b_4) for partisanship, ideology, policies, and character to be the same for each candidate. This imposes the assumption that these variables are equally salient with respect to respondents’ evaluations of each candidate. Our data analysis confirms this is an accurate assumption and a reasonable constraint.
Table 1. Conditional Logit Equations for the 1988 Vote, for Alternative Voting Models (N=1389)

<table>
<thead>
<tr>
<th>Voting Model</th>
<th>Independent Variables</th>
<th>Candidate Utilities (1)</th>
<th>Indifference Threshold (2)</th>
<th>Alienation Threshold (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unified Turnout Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept (Bush)</td>
<td>.127 (.093)</td>
<td>1.97** (.23)</td>
<td>1.19* (.52)</td>
<td></td>
</tr>
<tr>
<td>Ideological distance</td>
<td>-0.062** (.020)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy distance</td>
<td>-0.155** (.033)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Party identification</td>
<td>1.12** (.11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidate character</td>
<td>1.27** (.20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retros. econ. (Duk.)</td>
<td>-0.36** (.11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retros. econ. (Bush)</td>
<td>-0.23* (.11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black (Duk.)</td>
<td>1.11* (.56)</td>
<td>-0.09 (.21)</td>
<td>1.91** (.59)</td>
<td></td>
</tr>
<tr>
<td>Political efficacy</td>
<td>-2.89** (.65)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voted in 1984</td>
<td>-1.65** (.24)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.01 (.05)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close election</td>
<td>-0.15 (.15)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-929.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Policy-Only Turnout Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept (Bush)</td>
<td>.032 (.070)</td>
<td>-0.35* (.14)</td>
<td>-1.04** (.14)</td>
<td></td>
</tr>
<tr>
<td>Ideological distance</td>
<td>-1.42** (.019)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy distance</td>
<td>-2.82** (.026)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-1315.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Unified Indifference-Only Turnout Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept (Bush)</td>
<td>.070 (.064)</td>
<td>1.59** (.10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ideological distance</td>
<td>-0.28* (.013)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy distance</td>
<td>-0.032 (.024)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Party identification</td>
<td>.96** (.09)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidate character</td>
<td>1.11** (.16)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retros. econ. (Duk.)</td>
<td>-0.04 (.04)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retros. econ. (Bush)</td>
<td>.04 (.04)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black (Duk.)</td>
<td>.37 (.26)</td>
<td>.23* (.11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political efficacy</td>
<td>-0.99** (.14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voted in 1984</td>
<td>-0.96** (.06)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>-.02 (.02)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close election</td>
<td>-1.12 (.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Log Likelihood</td>
<td>-961.96</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Notes: The voting specifications used to estimate these parameters are given by equations A4-A7 in Appendix 3. As noted in Appendix 3, the parameters for ideological distance, policy distance, party identification, and candidate character are constrained to have equal values with respect to respondents’ utilities for Dukakis and Bush. One asterisk signifies statistical significance at the .05 level; two asterisks signify statistical significance at the .01 level. Standard errors are in parentheses.
Table 2. Projected Candidate Support and Abstention Rates for Alternative Voting Models

<table>
<thead>
<tr>
<th></th>
<th>Bush Vote (1)</th>
<th>Dukakis Vote (2)</th>
<th>Abstain (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) ANES distribution</td>
<td>.262</td>
<td>.231</td>
<td>.507</td>
</tr>
<tr>
<td>(2) Unified Turnout Model</td>
<td>.261</td>
<td>.233</td>
<td>.505</td>
</tr>
<tr>
<td>(3) Policy-Only Turnout Model</td>
<td>.262</td>
<td>.230</td>
<td>.508</td>
</tr>
<tr>
<td>(4) Unified Indifference-Only Turnout Model</td>
<td>.256</td>
<td>.234</td>
<td>.510</td>
</tr>
</tbody>
</table>

Note. The projected votes and abstention rate are computed by averaging the projected voting probabilities across all respondents, using the parameters reported in Table 1.
Table 3. Candidate Optima for the Unified Turnout Model

<table>
<thead>
<tr>
<th>Policy Dimension</th>
<th>Dukakis (1)</th>
<th>Bush (2)</th>
<th>Policy Divergence$^*$ (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideology</td>
<td>4.24 (.07)</td>
<td>4.49 (.08)</td>
<td>.25</td>
</tr>
<tr>
<td>Domestic Spending</td>
<td>3.84 (.07)</td>
<td>4.15 (.07)</td>
<td>.31</td>
</tr>
<tr>
<td>Defense Spending</td>
<td>3.70 (.06)</td>
<td>4.02 (.05)</td>
<td>.32</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>3.80 (.08)</td>
<td>4.16 (.09)</td>
<td>.36</td>
</tr>
<tr>
<td>Aid to Minorities</td>
<td>4.41 (.06)</td>
<td>4.73 (.05)</td>
<td>.32</td>
</tr>
<tr>
<td>Government Jobs</td>
<td>4.47 (.07)</td>
<td>4.79 (.07)</td>
<td>.32</td>
</tr>
<tr>
<td>Dealing with Russia</td>
<td>3.61 (.03)</td>
<td>3.70 (.03)</td>
<td>.09</td>
</tr>
<tr>
<td>Women’s Role</td>
<td>2.41 (.04)</td>
<td>2.50 (.02)</td>
<td>.09</td>
</tr>
</tbody>
</table>

* Policy divergence represents the distance between the candidates’ equilibrium positions reported in columns 1-2.

Notes: The candidates’ policy optima were estimated using the parameters reported for the unified turnout model in Table 1. These equilibrium positions were located using the iterative algorithm described in Merrill and Adams (2001). This equilibrium is such that no candidate can increase his expected margin over his opponent by moving along one issue at a time. Parametric bootstrap standard errors are given in parentheses.
Table 4. Respondent Self-Placements and Candidate Placements, 1988 ANES

<table>
<thead>
<tr>
<th></th>
<th>Mean respondent self-placements</th>
<th>Mean respondent candidate placements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideology</td>
<td>4.37 3.81 4.94 1.13</td>
<td>3.24 5.11</td>
</tr>
<tr>
<td>Domestic spending</td>
<td>3.93 3.40 4.49 1.09</td>
<td>2.90 4.45</td>
</tr>
<tr>
<td>Defense Spending</td>
<td>3.89 3.44 4.36 0.92</td>
<td>3.30 5.28</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>3.95 3.37 4.58 1.21</td>
<td>3.10 5.05</td>
</tr>
<tr>
<td>Aid to Minorities</td>
<td>4.57 4.10 4.95 0.85</td>
<td>3.30 4.83</td>
</tr>
<tr>
<td>Government Jobs</td>
<td>4.51 3.93 5.08 1.15</td>
<td>3.38 5.05</td>
</tr>
<tr>
<td>Dealing w/ Russia</td>
<td>3.73 3.58 3.88 0.30</td>
<td>3.40 4.09</td>
</tr>
<tr>
<td>Women’s Role</td>
<td>2.50 2.40 2.62 0.22</td>
<td>2.86 3.70</td>
</tr>
</tbody>
</table>
Democratic and Republican partisans are defined to include “leaners,” so that Democratic partisans are those respondents coded as 0-2 on the party identification variable, and Republican partisans are coded as 4-6 on this variable.

Partisan divergence is defined as the policy distance separating the mean self-placements of the Democratic respondents (column 2) and the mean self-placements of Republicans (column 3).
Table 5. Candidate Equilibria for Alternative Voting Models

5A: The Policy-Only Turnout Model

<table>
<thead>
<tr>
<th>Policy Dimension</th>
<th>Dukakis (1)</th>
<th>Bush (2)</th>
<th>Policy Divergence(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideology</td>
<td>4.41 (.01)</td>
<td>4.41 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Domestic Spending</td>
<td>3.96 (.01)</td>
<td>3.96 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Defense Spending</td>
<td>3.90 (.003)</td>
<td>3.90 (.003)</td>
<td>0</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>4.01 (.01)</td>
<td>4.01 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Aid to Minorities</td>
<td>4.63 (.01)</td>
<td>4.63 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Government Jobs</td>
<td>4.62 (.01)</td>
<td>4.62 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Dealing with Russia</td>
<td>3.70 (.01)</td>
<td>3.70 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Women’s Role</td>
<td>2.41 (.01)</td>
<td>2.41 (.01)</td>
<td>0</td>
</tr>
</tbody>
</table>

5B: The Unified Indifference-Only Turnout Model

<table>
<thead>
<tr>
<th>Policy Dimension</th>
<th>Dukakis (1)</th>
<th>Bush (2)</th>
<th>Policy Divergence(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideology</td>
<td>4.41 (.03)</td>
<td>4.41 (.02)</td>
<td>0</td>
</tr>
<tr>
<td>Domestic Spending</td>
<td>3.97 (.03)</td>
<td>3.97 (.02)</td>
<td>0</td>
</tr>
<tr>
<td>Defense Spending</td>
<td>3.90 (.02)</td>
<td>3.90 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>4.01 (.03)</td>
<td>4.01 (.02)</td>
<td>0</td>
</tr>
<tr>
<td>Aid to Minorities</td>
<td>4.58 (.01)</td>
<td>4.58 (.02)</td>
<td>0</td>
</tr>
<tr>
<td>Government Jobs</td>
<td>4.62 (.03)</td>
<td>4.62 (.02)</td>
<td>0</td>
</tr>
<tr>
<td>Dealing with Russia</td>
<td>3.70 (.01)</td>
<td>3.70 (.01)</td>
<td>0</td>
</tr>
<tr>
<td>Women’s Role</td>
<td>2.49 (.01)</td>
<td>2.49 (.01)</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^1\) Policy divergence represents the distance between the candidates’ equilibrium positions reported in columns 1-2.
Notes: The candidates’ policy optima were estimated using the parameters reported for the unified policy-only turnout model and the unified indifference-only turnout model in Table 1. These equilibrium positions were located using the iterative algorithm described in Merrill and Adams (2001). This equilibrium is such that no candidate can increase his expected margin over his opponent by moving along one issue at a time. Parametric bootstrap standard errors are given in parentheses.
As the Democratic candidate $D$ moves to the right, with the Republican candidate $R$ fixed at the overall vote median, the former picks up more voters from the Republican, near $(D + R)/2$, than she loses to abstention, near $D - T_A$. Hence, the Democratic candidate has an incentive to move toward the Republican candidate, resulting in an equilibrium at the center.
If the distance between the Democratic candidate $D$ and the Republican candidate $R$ is less than the partisan-salience parameter $B$, the Democratic candidate cannot pick up votes from the Republican candidate and only Democratic partisans' turnout decisions are affected. Because these voters are concentrated on the left, as $D$ moves to the right, with $R$ fixed at the overall voter median, the Democratic candidate gains fewer votes from abstention near $D + [B - T_A]$ than she loses to abstention near $D - [B - T_A]$. Hence, the Democratic candidate has an incentive to move left, away from the center.
Figure 3. Equilibrium under the Unified Turnout Model

For plausible parameter values in the unified turnout model (\( B = 2 \), \( T_A = -0.5 \), and \( T_I = 0.5 \)), an equilibrium occurs in which the Democratic candidate \( D \) and the Republican candidate \( R \) hold positions that are at a substantial distance from the center.
ENDNOTES

1 In deterministic spatial competition involving a single policy dimension the candidates are expected to converge to the position of the median voter (or the mean voter for probabilistic voting models in which utility is based on quadratic loss). In multidimensional deterministic competition the prediction is that the candidates will cycle within the voting space (for most realistic voter distributions), so that some divergence between the candidates’ positions can be expected (see Plott, 1967; Schofield, 1978). However, research on the “uncovered set” (McKelvey, 1986; Miller, 1980) and the “yolk” (see Feld, Grofman, and Miller, 1988; Ferejohn, McKelvey, and Packel, 1984) suggests that the candidates will cycle within a circumscribed policy space near the center of the voter distribution, so that we should still expect the candidates to present similar, centrist policies.

2 We apply the term “office-seeking” to candidates who attempt to maximize their vote margins vis-à-vis their opponent. This contrasts with candidates who maximize the number of votes they receive without regard to their opponent’s support. We focus on the former motivation because, in elections with variable turnout, it is the candidates’ vote margins that determine the winner (see Hinich and Ordeshook, 1970).

3 Several recent spatial modeling studies explore elections in which one candidate enjoys an advantage arising from incumbency, charisma, or competence, and these studies argue that such nonpolicy factors motivate policy divergence on the part of the competing candidates (see Berger, Munger, and Potthoff, 2000; Feld and Grofman, 1991; Groseclose, 2001; Londregan and
Romer, 1993; Macdonald and Rabinowitz, 1998; for reviews see Ansolabehere and Snyder, 2000). We show that office-seeking candidates may diverge even when neither competitor has a systematic nonpolicy advantage, an outcome that does not occur in the models cited above.

4 In earlier work (Adams and Merrill, 1999a b, 2000) we have shown that in multicandidate elections the candidates are motivated to shift in the direction of the mean preferences of their traditional voting constituencies, even in situations where no voters abstain. Thus we see the central contribution of the present paper as highlighting the joint effect of voters’ nonpolicy motivations and turnout effects on candidate strategies in two-person elections.

5 In addition to the measured components in equation 1, behaviorists typically incorporate a random term, which represents unmeasured sources of voters’ candidate evaluations. We incorporate these terms below in our empirical analysis of voting in the 1988 presidential election.

6 Other empirical studies model the vote as a two-stage process, in which citizens first decide whether to vote, and, if they decide to turn out, choose among the competing candidates (Born, 1990; Dubin and Rivers, 1989). A drawback of these specifications, from our perspective, is that they imply that the turnout level is independent of the candidates’ policy proposals – a proposition that appears dubious, and one that does not permit us to explore the ways in which variable turnout affects candidate strategies.
Expressing the relation in equation 4 in terms of derivatives, we obtain \( \frac{\partial C_{DR}}{\partial D} = \frac{1}{2} \), so that the rate of change of the Democrat’s margin is 
\[
2 \frac{\partial C_{DR}}{\partial D} f[(D + R) / 2] = f[(D + R) / 2].
\]

In addition, D’s vote margin vis-à-vis R improves further because any Democratic partisans located between D and R near the position \( [(D + R) / 2 + (B + T_i) / 2] \) switch from voting for R to abstaining, as do any Republican partisans located near the position \( [(D + R) / 2 - (B + T_i) / 2] \).

To see this, note that in our illustrative example each voter \( i \)'s utility differential between the candidates exceeds her indifference threshold provided that \( |B - |R - x_i| - |D - x_i|| > T_i \), and that this condition is satisfied for all voters when \( B - T_i > |R - D| \).

For instance, in the 1992 and 1996 ANES respondents’ reported turnout rates were near 70%, far higher than the actual turnout rates in these elections. By contrast the validated turnout rate in the 1988 ANES is near 50%, which is close to the actual participation level for that election.

We also analyzed a policy specification in which candidate utilities decreased with the absolute distance between respondents and candidates (the assumption we used in our illustrative arguments). This analysis yielded identical substantive conclusions to those we report below.

As discussed in (Adams, Dow, and Merrill, 2001: Appendix 2), the conditional logit choice probabilities \( P_i(D) \) and \( P_i(R) \) associated with voting for Dukakis and Bush are given by:
\[ P_i(D) = \frac{e^{V_i(D)}}{e^{V_i(D)} + e^{V_i(R) + V_i(I)} + e^{V_i(A)}} \quad \text{and} \quad P_i(R) = \frac{e^{V_i(R)}}{e^{V_i(D) + V_i(I)} + e^{V_i(R)} + e^{V_i(A)}} \]

where the specifications for \( V_i(D), V_i(R), V_i(A), \) and \( V_i(I) \) are given in Appendix 3. The probability of abstention is \( P_i(\text{abstain}) = [1 - P_i(D) - P_i(R)]. \)

13 We also estimated that approximately 19% of the NES respondents abstained from alienation, 14% from indifference, and 18% from both alienation and indifference (the details of these calculations are reported in Adams, Dow, and Merrill, 2001). The fact that both types of abstention were important suggests that candidates should take account of both motivations when devising their election strategies.

14 As another approach to address these issues we simulated the electoral effect of each candidate moving across the policy dimensions one at a time, while holding his opponent’s positions unchanged at their actual (mean perceived) values. This approach, i.e., determining one-step policy optima, is similar to those employed by Alvarez and Nagler (1995; see also Alvarez, Nagler, and Bowler, 2000), Dow (1997), Schofield et al. (1998a b), and Adams and Merrill (1999a, 1999b, 2000), in their studies on spatial competition in historical elections. The candidates’ one-step optima are very similar to their equilibrium policies, so that consideration of one-step optima supports identical substantive conclusions to those we report below.

15 To locate this equilibrium configuration we employed an iterative algorithm (see Merrill and Adams, 2001). The equilibrium we compute is such that no candidate can improve his margin
over the other candidate by moving along one issue at a time. For these exercises we placed no restrictions on candidate positioning, so that we even considered scenarios in which Bush took more liberal positions than Dukakis. However our results show that “credible” candidate positioning – i.e., simulations that place Dukakis to the left, and Bush to the right, of the median voter – is also optimal positioning even in situations where candidates can freely manipulate their policy images.

16 In the parametric bootstrap analysis, Dukakis’s equilibrium position is significantly to the left of Bush’s for each dimension at the 0.001 level.

17 The likelihood ratio test comparing the nonpolicy turnout model and the policy-only turnout model is significant at the 0.001 level.

18 The likelihood ratio test comparing the unified turnout model with and without the alienation component is significant at the .001 level.