

Do Competitive Districts Necessarily Produce Centrist Politicians?

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1 Evaluating Conventional Wisdom About the Effects of District Composition on Party Convergence Among the Members of the U.S. Congress

We have come a long way from the simplistic portrait of two-party plurality competition resulting in tweedledum-tweedledee politics that is commonly attributed

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to Downs (1957).¹ Two key modifications are the recognition that (1) paralleling Downsian pressures for party convergence, there are strong competing incentives for party divergence; and, (2) that the existence of multiple legislative constituencies in which competition occurs affects the standard Downsian logic.

For example, we now recognize the theoretical potential for divergence due to politicians' sincere policy motivations,² candidate nomination rules,³ party activists, voters' partisan loyalties, the threat of abstention due to alienation, and a host of other factors.⁴ Theoretical research also suggests that the consequences of multi-constituency competition for party convergence are expected to be larger (a) the more diverse the locations of the median voter across different districts, (b) the greater the extent to which candidates/elected officials have the leeway to modify their policy platforms/legislative behavior to accommodate the median voter in their own district,⁵ and (c) the greater the difference in variance in the support bases of the two parties.⁶ Neo-Downsian models of the type pioneered by Adams and Merrill (2003), Butler (2009), Miller and Schofield (2003) demonstrate that, under certain empirically plausible circumstances, candidates maximize support in general elections not by appeal to the median voter position but by mobilizing their own partisan supporters (i.e., what we think of as the party's "base").

There is also extensive empirical support for party divergence in two party competition in the United States, including work on the ideological differences between Senators of the same state from rival parties (e.g., Poole and Rosenthal 1984; Grofman et al. 1990), work that tests hypotheses about the extent to which primary voting rules affects party divergence (Gerber and Morton 1998; Grofman and Brunell 2001), and a body of work dating back as least as far as Froman (1963) looking at the degree to which newly elected members of congress resemble their predecessors in voting behavior and at the degree to which members of Congress are responsive to the ideology of their constituents. For example, Schmidt et al. (1996) test the hypothesis that candidates derive electoral benefits in general elections from appealing on policy grounds to their partisan constituencies. In a study of U.S. Senate elections from 1962–1990, they conclude that incumbent Senators were more likely to win reelection when their voting records coincided with their state party's platform

¹Downs' own (1957) views of party convergence are, however, far less simplistic than often painted, see, e.g., Grofman (2004).

²See e.g., Wittman (1983); Groseclose (2001).

³Gerber and Morton (1998); Burden (2001, 2004); Grofman and Brunell (2001); Owen and Grofman (2006); Adams and Merrill (2008).

⁴See Grofman (2004) for a recent review of the theoretical literature on party divergence in plurality elections.

⁵Winer et al. (2008); see also Snyder (1994).

⁶Grofman et al. (1999) report analyses suggesting that the policy preferences of state-level Democratic partisan constituencies are substantially more heterogeneous than are the policy preferences of state-level Republican constituencies, and that this difference is not an artifact of the fact that Democratic partisans from the South hold substantially more conservative views than do Democrats from the rest of the country.

than when their voting records reflected the median state voter's position, and, furthermore, that senators who appealed to their state party constituencies were more likely to run for reelection.⁷

Griffin (2006) argues that district competitiveness promotes responsiveness. Griffin's analysis, however, does not address our main question of how the policy differential between Democratic and Republican office-holders in similar districts varies between competitive districts on the one hand and uncompetitive ones on the other. What Griffin shows, instead, is that the average ideology of representatives (rather than the differential between parties) varies *across districts* as the median voter ideology varies, and that this relation is more pronounced among generally moderate districts than among uncompetitive districts.⁸ Griffin, however, does not compare Democratic positions with Republican positions in similar districts.

In this essay we show that theoretically expected patterns of candidate positioning are reflected in the empirical record of the ideological locations of those individuals who become members of Congress. In particular, we look at the implications of presidential voting patterns at the district/state level—which we view as a surrogate for district/state ideology—for the degree of ideological similarity among Democratic and Republican officeholders, as reflected in their legislative voting records. We analyze data for the U.S. House and Senate over the period 1956–2004. We take support levels for Democratic presidential nominees as our measure of the underlying ideological predisposition in the district, and we use the first dimension of DW-NOMINATE scores as our measure of the policy positions taken by officeholders. Our focus is empirical and descriptive rather than theoretical (although, as we discuss below, our findings have important implications for theory-based models of candidate competition).⁹

Exactly as expected, we find that representatives from opposite parties who are elected from districts of similar ideology display sharply different legislative voting records, such that, for any given level of Democratic presidential support, Democrats elected from such districts are, on average, considerably more liberal than Republicans elected from such districts. Moreover, we also find the expected constituency-specific effects that pull office holders toward the views of their own constituency, so that the greater the support for Democratic presidential nominees

⁷In a study of postwar presidential elections, however, Kenny and Lotfinia (2005) report mixed results, i.e. they report that in some sets of analyses the presidential nominees who were closer to their party's ideological position fared better in general elections, while other sets of analyses suggest that the nominees who were closer to the median voter appeared to be electorally advantaged.

⁸In particular, Griffin finds that the slope over districts relating average representative ideology to (normalized) presidential vote is steeper for competitive (moderate) districts than for lop-sided districts. He further finds that within districts legislators are more likely to adjust to changing voter ideology over time in competitive rather than uncompetitive districts.

⁹Our evidence does not speak to a current lively debate over issue ownership and dialogue in political campaigns, which revolves around whether rival candidates emphasize the same policy issue areas, not whether the candidates take similar positions on these issues (see, e.g., Sigelman and Buell 2004; Petrocik 1996; Kaplan et al. 2006).

in the district, the more liberal are both Democratic and Republican officeholders from such districts.

We look more closely at the degree of ideological similarity among officeholders of the two parties as a function of presidential voting in the district. We also consider differences found across different time periods and offer evidence from both Houses of Congress. In particular, rather than looking at each party separately, we look at whether the degree of closeness/competitiveness in the underlying partisan characteristics of a district lead to differences in the ideological *gap* between representatives of the two different parties elected from districts of that type.

Our primary purpose is to investigate the theoretical expectations derived from the modeling of Adams et al. (2005), Butler (2009), and Adams et al. (2010), that policy convergence between vote-seeking Democratic and Republican candidates need not be maximized in districts with balanced partisan compositions, i.e., where there are approximately equal proportions of Democratic and Republican partisans. Indeed, Adams et al. (2010), who account for voters' partisan loyalties and abstention due to alienation, advance the opposite argument, that, *ceteris paribus*, districts with balanced partisan compositions will motivate maximal policy *divergence* between Democratic and Republican candidates. Figure 1 in Adams et al. (2010) depicts the expected pattern, i.e., ideological divergence is greatest when partisans are equally balanced. Although the arguments of Adams et al. and Butler¹⁰ apply to the degree of policy divergence between rival candidates (one of whom must lose), while our analyses consider only winning candidates, these authors' arguments imply that when comparing the ideological positions of winning candidates from different parties, these differences should be at least as large in competitive districts as in non-competitive districts.

We focus on winners because we recognize that idiosyncratic factors may drive the locations of the candidate of the minority party in uncompetitive seats, and our interest is about how different from the location of the median voter a candidate can be and still be able to win the district. We treat idiosyncratic candidate characteristics and incumbency advantages as effectively washing out when we compare the set of Democratic and Republican winners from districts with the same ideological characteristics (as inferred from presidential election outcomes). Under these assumptions, we evaluate the hypothesis that the difference in policy positioning between Democratic and Republican *winners* should be at least as large in districts where the presidential outcome is competitive as in districts where the presidential outcome is non-competitive.

In the recent theoretical models, unlike the standard Downsian model, being in a potentially competitive seat does not necessarily imply that winners are closer to the median voter in the district. This is because, in such competitive settings, candidates have various strategic options to seek to improve their election chances, such as gaining financial support from an activist and interest-group base and using the money and publicity it buys to appeal to less ideologically-oriented voters (see

¹⁰Using district-level estimates of the voter distribution, Butler (2009) explains polarization among candidates in terms of the location and size of candidates' bases and proportion of swing voters.

e.g., Schofield and Miller 2007). Such an appeal can result from emphasizing one's own competence or likeability, by attacking the opponent, or by appealing to one's own party base and trying to further mobilize it. When candidates in a potentially competitive district seek support from potential activists—who are typically more polarized than the general electorate—they move *further* away from the median voter in that district. Candidates can compensate for being more distant from the median voter than their opponent by increasing turnout and activism¹¹ among their own party faithful.

To gain intuition about why candidates might be most dispersed when the election is most competitive, Adams et al. (2010) first consider the *least* competitive election context, namely that in which all citizens in the electorate identify with the same party. If, say, all citizens are Democratic partisans, then both candidates will appeal on policy grounds to these partisans, since there are no others. Therefore—even while courting citizens to vote and activists to contribute—margin-maximizing candidates will converge to identical positions in this “perfectly” uncompetitive scenario, and, by extension, they can be expected to converge to similar positions for partisan contexts that strongly favor one party over the other.

By contrast, in competitive districts, each candidate is motivated to appeal in large part to his/her own partisan constituency, which motivates increased divergence of the candidates' positions. To see intuitively why this might be true, Adams et al. (2010) consider another extreme situation where voters' partisan biases are so strong that they invariably prefer their party's candidate to the rival party's candidate, regardless of the candidates' positions, but where partisan voters are also prone to abstain from voting and/or activism, so that they participate only if they approve of their preferred candidate's policy position. Because, in this scenario, each candidate influences decisions to participate by the members of only her own partisan constituency—and neither candidate can attract support from the rival party's partisans—each candidate is motivated to give weight to the policy preferences of her own partisan constituency (along with the preferences of any independent voters in the electorate), while ignoring the policy preferences of the rival party's partisan constituency.¹²

Our empirical analyses support this expectation that candidates may be most dispersed when the election is most competitive. We find that, contrary to the intuition

¹¹In competitive House elections, even if the positions of the House candidates do not greatly affect actual turnout, they may affect the decision to vote in the House contest and will likely affect the efforts of potential activists (cf. Schofield and Miller 2007).

¹²More generally, using a conditional logit model, Adams et al. (2010) argue that the more uncommitted a voter's decision to vote for a candidate, the more the candidate will take the voter's preferences into account (Erikson and Romero 1990, p. 1107). In a two-candidate election where voters have nonzero probabilities of abstaining, the higher of the voter's probabilities of voting for one or the other of the candidates must be the one nearer 0.5, and hence the voter is most marginal with respect to the candidate that she is most likely to support. Given that partisan voters are more likely to vote for their party's candidate than for the opposition party's candidate, candidates attach greater weight to the policy preferences of the members of their own partisan constituency than to the preferences of the members of the rival candidate's constituency.

that competitive districts should pull candidates of opposite parties closer together toward the median voter in that district, the ideological difference between the winners from the two parties is typically as great or greater in districts that, in presidential support terms, are the most competitive. *Simply put, in election contexts that one might think give candidates the strongest possible incentives to maximize their electoral support, the winning candidates tend to present the most radical policies relative to the center of district opinion.* Note that this finding does not imply that the most competitive districts elect the most extremist members of Congress. Rather it indicates that Democrats and Republicans elected in competitive districts are at least as polarized *relative* to each other—but not necessarily more extreme—than those elected in lopsided districts.

We believe empirical research on the policy extremism of candidates contesting competitive districts is relevant not only to the theoretical models of Butler (2009) and Adams et al. (2005) discussed above, but also to the more general question: Do candidates believe they maximize their support by converging towards the center of district opinion, or by presenting noncentrist positions that may be more appealing to their base and also to special interest groups?

As we noted above the basic Downsian model provides a strong intuition that, all other factors being equal, candidates and parties enhance their support by moving to the center of constituency opinion. However subsequent theoretical and empirical research has developed several reasons why other factors are *not* equal, and may reward candidates for presenting noncentrist positions. These include motivating turnout among party supporters who hold noncentrist viewpoints; energizing party activists to work on the candidate's campaign;¹³ motivating special interest groups to finance the campaign;¹⁴ and, convincing voters that the candidate is of superior character because her announced noncentrist positions demonstrate that she is not “pandering” to voters in the district.¹⁵ Given these theoretical considerations it is not obvious whether, in real-world elections, candidates enhance their electoral prospects by positioning themselves near the center of the district electorate, or by presenting noncentrist positions that appeal to their partisans, to party activists, and to special interest groups. The empirical findings we present below that the winning candidates in more competitive districts present more radical policies suggest that the candidates themselves believe there are electoral advantages to noncentrist positioning. We believe this finding is important.

Our analysis is also consistent with the empirical findings of Ansolabehere et al. (2001), who find little support for the claim that winners of competitive races are more ideologically centrist than members of that same party elected from safe seats. Ansolabehere et al. (2001) look at the degree of divergence between winners and losers.

Unlike these and most other authors, we define competition in a national (i.e., presidential) rather than a House/Senate contest-specific way. Here, because DW-

¹³See, Schofield and Sened (2006).

¹⁴See Baron (1994) and Moon (2004).

¹⁵See Callander and Wilkie (2007).

NOMINATE scores are generally available for winners but not for losers, we look only at the positions of winners. But, of course, it is the winners who matter most. There are advantages and disadvantages to both approaches—i.e., defining competition in a national or a contest-specific way—and they should be seen as complementary. When Ansolabehere et al. (2001) and others define competition in terms of contests for House seats, they look directly at the competitiveness of the election in which a given officeholder is elected. On the other hand, any given House contest involves idiosyncratic features such as the backgrounds and campaign skills of the two candidates (and controlling for incumbency only partly controls for these other effects). This problem is exacerbated by the fact that there are only a few data sets that contain the ideological locations of both challengers and candidates. In contrast, by using presidential level data for all districts we provide more comparable data on the underlying partisan predispositions of the districts and we have comparable data over a larger number of districts over a much longer time period. In addition, potential statistical problems arise if we substitute votes in the House/Senate elections themselves for the presidential vote shares. Specifically, if we regress DW-NOMINATE scores on vote shares in House/Senate elections, this regression introduces an endogeneity problem because the Democratic proportion of the vote in each election is in part dependent on the ideological positions of the Congressional candidates, which biases estimates of the regression parameters.¹⁶ Thus, there are good reasons to believe that the kind of data which we analyze in this paper is informative about pressures for ideological divergence.

2 Ideological Extremism in the U.S. House, 1956–2004, by Party and by Democratic Presidential Vote in the District

We begin by analyzing the relationship between candidate extremism and district competitiveness, using data for U.S. House districts over the 1956–2004 period. Taking DW-NOMINATE scores as our measure of a member's ideology for data pooled for the House elections from 1956 through 2004,¹⁷ we have plotted member

¹⁶In fact for an extreme case in which vote-share is completely determined by spatial factors—namely the candidates' relative proximities to the median voter—the slope for each party would be decidedly positive rather than negative, i.e., more liberal Democratic candidate positioning would be associated with lower Democratic vote shares (and vice versa for Republicans). To see why regressing against vote shares in House districts biases toward positive slopes, consider a scenario in which the voters are uniformly distributed on the interval from -0.5 to 0.5 (the center half of the Left-Right scale from—restricted and, on average, less liberal). This leads to a positive slope when spatial position is regressed against Democratic vote-share. So endogeneity can seriously bias inferences from data that relate spatial position to Democratic vote-share in district House races. Regressions of DW-NOMINATE scores against House vote-shares that we have done give lines that are essentially flat. We take this as evidence of significant endogeneity effects (data omitted for space reasons).

¹⁷As explained in the website <http://polisci.ucsd.edu/faculty/poole.htm>, the average DW-NOMINATE coordinate for every legislator is constrained to lie within the unit hypersphere, with +1

DW-NOMINATE scores against the (district-specific) normalized Democratic vote share in the district in the contemporaneous Presidential election,¹⁸ which we use as an estimate of district ideology. We label this variable the *normalized district Democratic vote proportion for president*, or *district ideology* for short.

Plots for pooled data over the period 1956–2004 are presented in Fig. 1; plots broken down by time period are shown in Fig. 2. Areas of the figure to the left of the vertical line represent Republican districts, i.e., those in which the district Democratic presidential vote was less than the national Democratic vote, while the areas to the right of it represent Democratic districts. Each curve, one for each party, represents a quadratic regression for that party, in which we regressed the representatives' DW-NOMINATE scores on the normalized district Democratic vote proportion, which we take as a measure of district ideology, and on the square of the district ideology; we also included a dummy variable for districts from the South.¹⁹ Thus for each party our specification was:

$$\begin{aligned} \text{DW-NOMINATE score}_j = & b_1 + b_2[\text{District ideology}_j] \\ & + b_3[\text{District ideology}_j]^2 + b_4[\text{South}], \end{aligned} \quad (1)$$

where

DW-NOMINATE score_{*j*} = representative *j*'s DW-NOMINATE score, based on *j*'s legislative voting record in the two years preceding the election,

District ideology_{*j*} = normalized presidential vote in *j*'s district, as defined in footnote 18,

[District ideology_{*j*}]² = the square of the normalized presidential vote in *j*'s district,

South = 1 if the district was located in the South, and zero otherwise.

interpretable as the most conservative score and -1 interpreted as the most liberal score. However, some members may have large linear terms so that for some Congresses their coordinates can be greater than $+1/-1$. In our data, there are 12 data points for which the DW-NOMINATE scores are beyond the range of -1 or 1 .

¹⁸Specifically, the normalized Democratic vote proportion for president is equal to district presidential vote share minus the national presidential vote share. For example, if a presidential candidate gets 65 percent in a district, and 60 percent nationally, then the normalized district percent is $65 - 60 = +5$ percent, reflecting the fact that the presidential candidate ran five percentage points ahead of his national average in that district. If the presidential vote share in the district is the same as the national vote, then the normalized district vote is zero percent. Centering the district vote on zero is necessary, as explained in footnote 20 below, in order for the quadratic regressions (described below) to generate informative parameter estimates. Because the mean of the national Democratic presidential vote over the period of the study (49.9 %) is almost exactly 50 percent, we may interpret the zero point of the normalized Democratic vote proportion for president as representing either the mean national presidential vote or as zero deviation from a 50–50 district.

¹⁹We define the south as Arkansas, Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia.

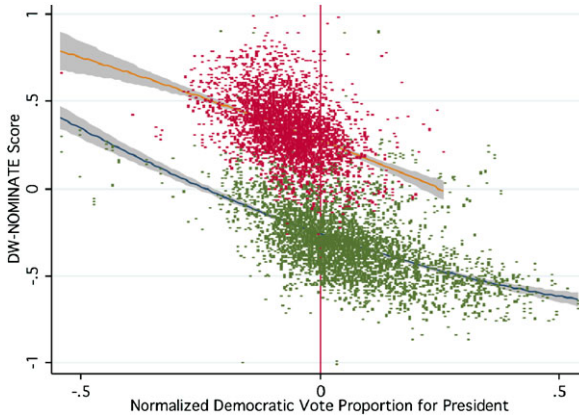


Fig. 1 House quadratic relation of DW-NOMINATE scores and partisan distribution by district: 1956–2004. Notes: The plot presents quadratic regression curves for DW-NOMINATE scores versus the normalized Democratic vote proportion for president in the House member’s district, which is equal to district Democratic presidential vote share minus the national Democratic presidential vote share (see footnote 12). These regression lines were plotted using the full set of House members’ DW-NOMINATE scores over the period 1956–2004; the sample sizes for the regression models are 4,613 for Republicans and 6,161 for Democrats. The vertical line at 0.0 represents identical Democratic presidential vote shares at the national and district level. The shaded regions around the lines represent 95 percent confidence intervals

Inclusion of the term $[\text{District ideology}_j]^2$ in (1) allows us to investigate the possibility of nonlinear effects of district ideology on the House member’s DW-NOMINATE score, and to estimate how the degree of ideological dispersion between Republican and Democratic representatives varies with district competitiveness.²⁰ Table 1 reports these regression coefficients for the U.S. House, and the shaded regions in the figures represent the 95 percent confidence regions for the regressions.²¹ As expected, the parameter estimates reported in Table 1 and illustrated in Figs. 1–2 support the expectation that representatives’ ideological positions respond to the position of the median voter by district, so that the fitted curve for each party slopes downward (party responsiveness), both for the 1956–2004 period as a

²⁰To see why it is necessary to employ a measure of district ideology that is centered on zero in order to estimate informative parameters in (1), note that in a quadratic regression, parameter estimates reflect behavior around the zero point of the independent variable. If we use the actual district vote as our measure of district ideology, then the zero point of this independent variable corresponds to a district where the Democratic candidate received zero percent of the presidential vote, which is outside the range of interest. Under this parameterization, estimates would reflect behavior over an unrealistic region. Using the normalized Democratic vote proportion for president, on the other hand, places the zero value of the independent variable at a district whose presidential vote matches the national presidential vote, focusing attention on behavior around competitive electorates.

²¹For simplicity, the party-specific regression curves and their confidence intervals in the figures are based on the full data set without the breakdown by region.

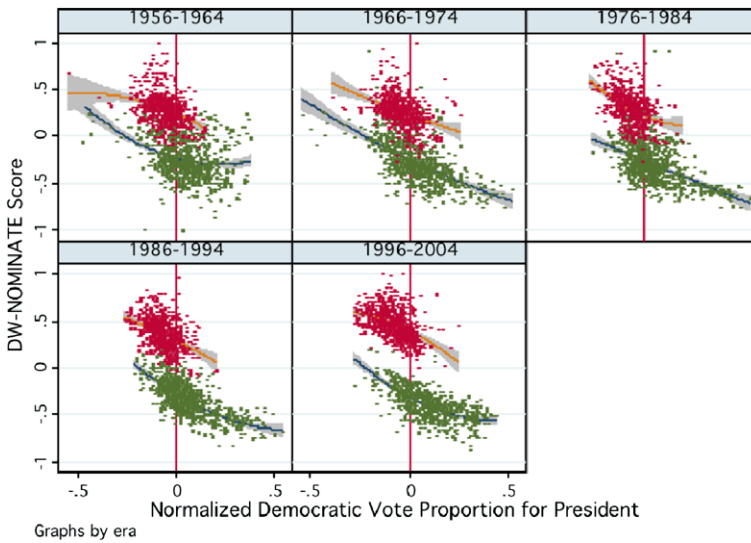


Fig. 2 Quadratic regression for the presidential vote share and ideology for U.S. House members with data separated by time periods. Notes: These plots present quadratic regression curves for DW-NOMINATE scores versus the normalized Democratic vote proportion for president in the House member's district, which is equal to district Democratic presidential vote share minus the national Democratic presidential vote share (see footnote 12). The data are the same as in Fig. 1, just separated by the eras noted in the figure. The *vertical line* at 0.0 represents identical Democratic presidential vote shares at the national and district level. The *shaded regions* around the lines represent 95 percent confidence intervals

whole (Fig. 1) and for each of the time periods 1956–1964, 1966–1974, 1976–1984, 1986–1994, and 1996–2004 (Fig. 2). All of these downward slopes—for the full period (as well as for each subperiod) and for each party—are statistically significant at the 0.001 level. In addition, note that the downward slopes of these regression lines for both Democrats and Republicans are substantial, suggesting mean *within-party* ideology does vary substantially as a function of the presidential voting patterns in the district. For the analyses pooled over the entire 1956–2004 time period, the estimated parameters on the linear coefficient reported in Table 1 are -0.75 for Democratic representatives and -1.03 for Republican representatives, indicating a downward trend in the DW-NOMINATE score of about one tenth of a unit for each increase of ten percent in the Democratic proportion of the district vote.²²

On the other hand, if we look at the gap between the two curves, which reflects differences *across party lines*, we find very substantial differences between the win-

²²These estimates apply to marginal changes in district presidential vote when the Democratic vote share in the district is similar to the national vote (so that the normalized measure of district ideology is near zero), in which case the value of the squared district ideology variable in (1) is negligible. In this range of values the predicted effect of district ideology on representatives' DW-NOMINATE scores is approximately linear.

Table 1 Regression of DW-NOMINATE scores versus partisan distribution of the district: House of representatives

Period	Regression coefficients							
	Democrats			Republicans				
	Intercept	South	Ideology	[Ideology] ²	Intercept	South	Ideology	[Ideology] ²
1956–2004 (full period)	-0.32*** (0.01)	0.19*** (0.01)	-0.75*** (0.02)	0.13* (0.06)	0.27*** (0.01)	0.06*** (0.01)	-1.03*** (0.04)	-0.54* (0.24)
1956–1964	-0.33*** (0.01)	0.30*** (0.01)	-0.36*** (0.03)	0.33* (0.14)	0.24*** (0.01)	0.06* (0.03)	-0.91*** (0.09)	-1.11*** (0.44)
1966–1974	-0.32*** (0.01)	0.24*** (0.01)	-0.64*** (0.04)	-0.22 (0.13)	0.23*** (0.01)	0.01 (0.02)	-0.76*** (0.07)	0.12 (0.46)
1976–1984	-0.32*** (0.01)	0.21*** (0.01)	-0.86*** (0.06)	0.34 (0.19)	0.20*** (0.01)	0.10*** (0.01)	-1.02*** (0.12)	1.21 (0.68)
1986–1994	-0.30*** (0.01)	0.07*** (0.01)	-1.17*** (0.05)	0.83*** (0.17)	0.29*** (0.01)	0.03** (0.01)	-1.03*** (0.10)	-0.56 (0.61)
1996–2004	-0.33*** (0.01)	0.05*** (0.01)	-1.06*** (0.05)	1.16*** (0.17)	0.39*** (0.01)	0.02 (0.01)	-1.03*** (0.10)	-1.30*** (0.45)

* Significance at the 0.05 level; ** Significance at the 0.01 level; *** Significance at the 0.001 level. Significance levels are 2-sided. The definitions of the independent variables are given in the text. Curvature in the expected direction (i.e., convex for Democrats and concave for Republicans) is significant for both parties for the full period and for the earliest and latest subperiods. Thus, the data offer evidence that the curves either bow outward or may be straight, but the coefficients are never significant in the other direction, i.e., the data offer no significant evidence that any of the partisan curves bow inward. N's for the analyses are as follows: Full period (1956–2004): Democrats 6158, Republicans 4616; 1956–1964 period: Democrats 1304, Republicans 843; 1966–1974 period: Democrats 1254, Republicans 873; 1976–1984 period: Democrats 1323, Republicans 843; 1986–1994 period: Democrats 1243, Republicans 932; 1996–2004 period: Democrats 1034, Republicans 1125

ners from the two parties; for instance the pooled data in Fig. 1 suggests that, on average, a Republican Congressman from even a 70 percent Democratic district can be expected to be more conservative than a Democratic member from a 30 percent Democratic district. The difference in regression intercepts between Democrats and Republicans indicates the typical difference between the DW-NOMINATE scores of House members of the two major parties when the partisan composition of the district is 50–50. As reported in Table 1, these differences range from 0.52–0.57 DW-NOMINATE units in each of the first three subperiods to 0.72 units in the most recent subperiod 1996–2004, reflecting the increased polarization in the House.²³ Clearly, party has a huge effect relative to that of district ideology.²⁴ Finally, the positive coefficient estimates on the South dummy variable suggest that—particularly in the earlier time periods—representatives tended to compile more conservative legislative voting records when they were elected from Southern districts, compared to when they were elected from non-Southern districts with similar presidential voting patterns.

So far we have considered what our data implies about House members' responsiveness to district ideology, along with the ideological differences between Democratic and Republican representatives. However our most interesting findings concern how district ideology is related to *partisan divergence*, i.e., the degree of ideological divergence between House members from different parties. As noted above, the conventional wisdom is that partisan divergence will be greatest when the election is not competitive, because in a lopsided district the candidate from the dominant party can move away from either the national or district median and expect to win anyway. Given that districts with highly unequal partisanship are likely to be less competitive in terms of presidential voting, this conventional wisdom implies that we should observe the largest ideological gap between Republican and Democratic representatives in districts that feature lopsided presidential vote margins.

However the curves in Fig. 1, which are fitted to the full 1956–2004 data, do not conform to this pattern: instead they bow out slightly away from each other in the middle of the partisan distribution scale.²⁵ Note that neither for the full period (1956–2004) nor for any of the five breakdown periods is there evidence that the curve for either party is significantly bowed *inward* at the 0.05 level. By contrast,

²³The partisan gaps reported above apply to the reference category, non-South. For the category South, the estimated intercept and parameter estimate for the variable South must be combined, so that the partisan gap in the South ranges from 0.32–0.33 in the first two subperiods to 0.69 in the most recent subperiod.

²⁴We note that Ono (2005) obtains similar plots for two Congresses (1969–1970 and 2003–2004) and observes the increasing polarization of the parties in Congress. Similarly, Clinton (2006), using samples that aggregate to over 100,000 voters, finds systematic differences in Republican and Democratic voting behavior in the 106th House (1999–2000) that cannot be entirely accounted for by same-party constituency preferences.

²⁵Figure 4 in Butler (2009) appears to suggest this same convexity for Democrats and concavity for Republicans.

positive coefficients on the quadratic term for the Democrats and negative coefficients for the Republicans indicate significant *outward* bowing for both parties for the overall period and for the earliest (1956–1964) and the latest (1996–2004) periods, each at the 0.05 level or better (see Table 1 and Fig. 2).²⁶ In other words, Republican and Democratic House winners are as different or more so in ideology in the most competitive districts than in un-competitive ones. The outward bowing of the curves is not pronounced; what is remarkable is that the curves do not bow inward, as we would expect if the partisan gap narrowed in competitive districts.

Related plots are obtained by Erikson and Wright (2000). In particular, using the NES seven-point scale for both axes, these authors plot the mean perception of the ideology of incumbent House members during the 1980s against constituency ideology, obtaining as we do a sharp separation between Democrats and Republicans and trends reflecting party responsiveness (Erikson and Wright 2000, Fig. 8.6). The authors' scatter plots for each party appear to show curvature that bows out between the parties, but this possible effect is not noted.²⁷

3 Ideological Extremism in the U.S. Senate, 1956–2004, by Party and by Presidential Vote in the State

We replicate the analyses on the House of Representatives, reported above, for the U.S. Senate. We use the vote for president for each quadrennial election as a measure of the underlying partisan support for each state (both for that particular election as well as the midterm election that follows it),²⁸ and the DW-NOMINATE scores for all senators as a measure of senatorial ideology from each congress. The plots for the regressions are depicted in Fig. 3 (which presents results for the entire 1956–2004 period) and Fig. 4 (which depicts results for the same subperiods used for the

²⁶One explanation for convex curvature of the Democratic scores in the earlier part of the period under study may be that a number of conservative Southern Democrats won uncontested races, causing the quadratic regression curves for Democrats to turn up on the right side of the scale. But controlling for districts in the South as we have done should reduce this effect and, in any event, it cannot explain the pronounced convex curvature for the Democrats in the most recent subperiod.

²⁷Erikson and Wright (2000, Fig. 8.1) also plot roll-call ideology based on the ADA/ACA indices for the 1980s against presidential vote, obtaining similar patterns; linear regression results are reported for the period 1976–1996. The authors note that “Districts in the middle are generally represented by relatively moderate Republicans or relatively moderate Democrats,” but these authors do not assess the size of the ideologically *gap* between Republicans and Democrats as a function of district ideology. The fact that representatives from competitive districts tend to be more moderate than those from lopsided districts does not imply that the partisan gap between the sets of Republican and Democratic winners in moderate districts is smaller than the corresponding gap for more extreme districts.

²⁸As with our analyses of House districts (see footnote 18), for the Senate-based analyses our measure of ideology was the difference between the state's Democratic presidential vote and the national Democratic presidential vote, a measure that is centered on zero.

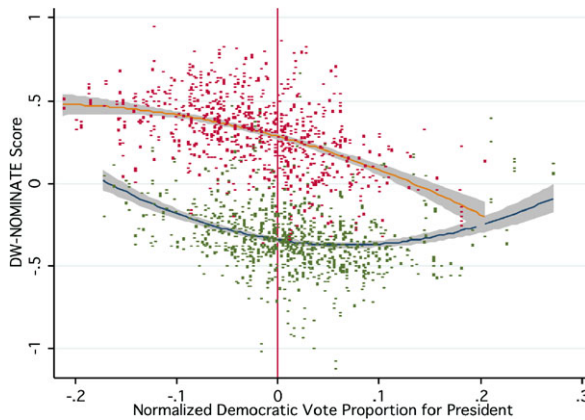


Fig. 3 Senate quadratic relation of DW-NOMINATE scores and partisan distribution by district: 1956–2004. Notes: The plot presents quadratic regression curves for DW-NOMINATE scores versus the normalized Democratic vote proportion for president in the Senator’s state, which is equal to state Democratic presidential vote share minus the national Democratic presidential vote share (see footnote 12). These regression lines were plotted using the full set of Senators’ DW-NOMINATE scores over the period 1956–2004; the sample sizes for the regression models are 1335 for Republicans and 1353 for Democrats. The *vertical line* at 0.0 represents identical Democratic presidential vote shares at the national and state level. The *shaded regions* around the lines represent 95 percent confidence intervals

House). Table 2 reports the regression coefficients for the Senate, and the shaded regions in the figures again represent the 95 percent confidence intervals for each regression.

The patterns we estimate for the Senate data are similar to those for the House data. As was the case for the House data, all of the downward, linear slopes—for the full period (as well as for each subperiod) and for each party—are statistically significant, at the 0.05 level; in fact, all except those for the subperiod 1956–1964 are also significant at the 0.001 level. Furthermore, the difference in regression intercepts between Democrats and Republicans, which indicates the typical difference between the DW-NOMINATE scores of Senate members of opposing parties when the partisan composition of the state is competitive, reflects the increasing partisan polarization in the Senate over time: these differences increase from 0.66 DW-NOMINATE units in the first subperiod 1956–1964, to 0.80 units in the most recent subperiod 1996–2004 (see Table 2).

Finally, our estimates on the Senate data again support the proposition that the differences between Democratic and Republican senators’ voting records are as great or greater in states that are evenly divided, in partisan terms, than in states that are overwhelmingly democratic or republican: The curves in Fig. 3, which are fitted to the 1956–2004 data, again bow out away from each other in the middle of the state ideology scale, i.e., in states where the presidential vote mirrors the national vote, indicating that Republican and Democratic Senate winners are *as different* (and if anything more different) in ideology in the most competitive states. The evidence for outward bowing is significant at the 0.05 level for both

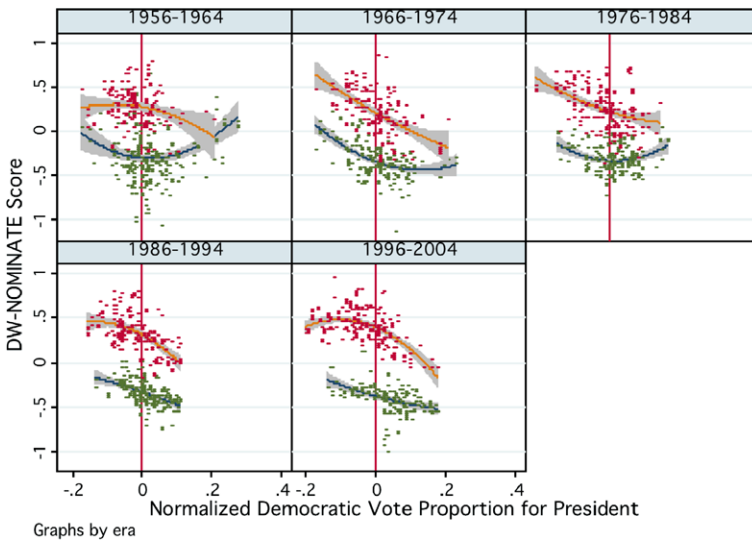


Fig. 4 Quadratic regression for the presidential vote share and ideology for Senators with data separated by time periods. Notes: These plots present quadratic regression curves for DW-NOMINATE scores versus the normalized Democratic vote proportion for president in the Senator’s state, which is equal to state Democratic presidential vote share minus the national Democratic presidential vote share (see footnote 12). The data are the same as in Fig. 3, just separated by the eras noted in the figure. The vertical line at 0.0 represents identical Democratic presidential vote shares at the national and state level. The shaded regions around the lines represent 95 percent confidence intervals

parties for the full period and for the earliest and latest periods—the same periods that exhibited outward bowing in the House; whereas no curve for either party for either the full period or for any of the breakdown periods bows significantly inward.

4 Discussion

Our findings cast considerable doubt on any simplistic claim that more evenly balanced electoral competition in a district prompts candidate convergence across party lines. Moreover, our substantive conclusions are consistent across the House and Senate, and they largely generalize across time periods. Our findings concerning the partisan ideological gap and party responsiveness to constituency views are, of course, well known, and have been identified using alternative measures of legislative ideology.²⁹ In particular, we find the expected evidence that elected officials’ legislative voting records respond to district ideology, and that Democratic repre-

²⁹Restriction of the data to open-seat races changes the pattern only very marginally, with a slight tendency for Republicans to be more moderate in competitive districts. Furthermore, the patterns

Table 2 Regression of DW-NOMINATE scores versus partisan distribution of the State: results for the U.S. Senate

Period	Regression coefficients							
	Democrats				Republicans			
	Intercept	South	Ideology	[Ideology] ²	Intercept	South	Ideology	[Ideology] ²
1956–2004 (full period)	-0.39*** (0.01)	0.26*** (0.01)	-0.66*** (0.07)	4.29*** (0.54)	0.26*** (0.01)	0.16*** (0.02)	-1.57*** (0.09)	-2.30*** (0.81)
1956–1964	-0.39*** (0.03)	0.39*** (0.03)	-0.49*** (0.22)	3.08* (1.32)	0.27*** (0.02)	0.26*** (0.10)	-0.72*** (0.26)	-5.02* (2.50)
1966–1974	-0.38*** (0.01)	0.23*** (0.03)	-0.62*** (0.15)	2.18* (1.08)	0.19*** (0.02)	0.19*** (0.05)	-2.05*** (0.22)	1.22 (2.04)
1976–1984	-0.37*** (0.01)	0.23*** (0.02)	-0.67*** (0.11)	5.50*** (1.14)	0.17*** (0.02)	0.28*** (0.03)	-1.59*** (0.21)	2.86 (1.80)
1986–1994	-0.36*** (0.01)	0.13*** (0.02)	-1.05*** (0.12)	0.47 (1.77)	0.29*** (0.02)	0.09** (0.03)	-1.94*** (0.21)	-5.56* (2.61)
1996–2004	-0.42*** (0.01)	0.16*** (0.02)	-0.95*** (0.12)	3.45*** (1.23)	0.38*** (0.01)	0.04 (0.02)	-1.65*** (0.15)	-7.48*** (1.16)

* Significance at the 0.05 level; ** Significance at the 0.01 level; *** Significance at the 0.001 level. Significance levels are 2-sided
 The definitions of the independent variables are given in the text. Curvature in the expected direction is significant for both parties for the full period and for the earliest and latest subperiods. Thus, as for the House, the data offer evidence that the curves either bow outward or may be straight, but the coefficients are never significant in the other direction, i.e., there is no evidence that any of the partisan curves bow inward. N's for the analyses are as follows: Full period (1956–2004): Democrats 1353, Republicans 1135; 1956–1964 period: Democrats 314, Republicans 187; 1966–1974 period: Democrats 270, Republicans 205; 1976–1984 period: Democrats 263, Republicans 242; 1986–1994 period: Democrats 272, Republicans 234; 1996–2004 period: Democrats 234, Republicans 267

sentatives are more liberal than Republicans when controlling for district ideology. *But* we find no evidence that the degree of ideological polarization between Democratic and Republican representatives is smallest in the most competitive districts—in fact, if anything, the data suggests the opposite pattern, that over the past fifty years partisan polarization has tended to be as *great or greater* in districts that are most competitive. This latter finding, which we label the *competitive polarization result*, is contrary to the intuition that political competition exerts maximal pressures on politicians to moderate their positions when this competition is most intense, i.e., in highly competitive districts.

Our findings have theoretical, empirical, and practical implications. The practical implication of the competitive polarization result is that it casts doubt on whether using redistricting to draw more competitive districts for members of the House will bring the politics of moderation to Congress. Indeed, our results suggest that Democratic and Republican representatives elected from competitive districts, in terms of the presidential vote, may be even more ideologically polarized relative to each other than when they are elected from districts that are lopsidedly Democratic (or Republican) at the presidential level. We emphasize, however, that our results do not imply that the redesigning of districts to be more competitive would necessarily increase overall polarization in Congress. On the contrary, Democratic and Republican members of Congress in competitive districts, while sharply different from each other, would in most cases be less extremist than those that would have been elected in more lopsided districts, as can be seen in Figs. 1 and 3. Thus, redistricting to produce competitive districts might reduce, not increase, overall polarization.

Theoretically, our competitive polarization result squares with the recent spatial modeling-based arguments of Butler (2009) and Adams et al. (2010), which take account of voters' partisan loyalties and abstention due to alienation. These arguments conclude that, *ceteris paribus*, districts with balanced partisan compositions will motivate maximal policy *divergence* between Democratic and Republican candidates. And, as we have noted above additional theoretical arguments developed by Schofield and Sened (2006), Moon (2004), and Baron (1994) present reasons why candidates who present noncentrist policies that appeal to party supporters, activists, and special interest groups may derive electoral benefits that surpass the benefits that accrue to candidates who appeal to the center of public opinion in their constituency.

Finally, our analyses are relevant to the lively current debate over how political diversity mediates the impact of numerous variables that influence election outcomes, roll call voting, and candidate positioning (e.g., Bond et al. 2001; Koetzle 1998; Jones 2003). With respect to senators' roll call votes on free trade, for instance, Bailey and Brady (1998) find that in demographically homogeneous states

observed are not likely the result of the particular measure (DW-NOMINATE scores) of ideological voting in the House that we have used. Lee et al. (2004) plot legislative voting records as assessed by NOMINATE scores and by each of fifteen monitoring associations ranging from the liberal American for Democratic Action (ADA) to the conservative League of Conservative Voters (LCV) (against the Democratic vote share in the House election by district). These plots show internal consistency among many different measures of ideological voting in Congress.

constituent preferences are the only factor that exerts statistically significant influences on roll-call votes, while in heterogeneous states constituent preferences are but one of several influences. To the extent that heterogeneous states tend to be more electorally competitive at the presidential level, the Bailey and Brady findings imply that we will observe equal or greater divergence between Democrats' and Republicans' roll-call records in competitive states, than in non-competitive states—a pattern that fits our empirical finding that partisan polarization tends to be as large or larger in competitive districts. And with respect to candidate positioning, Bishin et al. (2006) report empirical analyses that the ideological positions of senate candidates from rival parties were no more similar when these candidates faced off in an election held in a heterogeneous state, than when the election was held in a homogeneous state.³⁰ This finding is again consistent with our results.

In sum, in this paper we have analyzed how the degree of ideological polarization between the parties in the House and the Senate varies as a function of district ideology, defined in terms of Democratic presidential support in the district. Consistent with previous research, we find that representatives' roll-call voting records reflect their district and their party. However, and we believe of greatest interest, we also find that as great or greater ideological difference between the winners of the two parties occurs in districts that, in presidential support terms, are the most competitive.

References

- Adams J, Brunell T, Grofman B, Merrill S (2010) Why candidate divergence should be expected to be just as great (or even greater) in competitive seats as in non-competitive ones. *Public Choice* 145(3–4):417–433
- Adams J, Merrill S (2003) Voter turnout and candidate strategies in American elections. *J Polit* 65(1):161–189
- Adams J, Merrill S (2008) Candidate and party strategies in two-stage elections beginning with a primary. *Am J Polit Sci* 52(2):344–359
- Adams J, Merrill S, Grofman B (2005) A unified theory of party competition: a cross-national analysis integrating spatial and behavioral factors. Cambridge University Press, Cambridge
- Ansolahehere S, Snyder J, Stewart C (2001) Candidate positioning in U.S. House elections. *Am J Polit Sci* 45:136–159
- Bailey M, Brady D (1998) Heterogeneity and representation: the Senate and free trade. *Am J Polit Sci* 42:524–544
- Baron D (1994) Electoral competition with informed and uninformed voters. *Am Polit Sci Rev* 88(1):33–47
- Bishin B, Dow JK, Adams J (2006) Issue representation and diversity in Senate elections. *Public Choice* 129(2):201–215
- Bond JR, Campbell K, Cottrill JB (2001) The puzzle of constituency diversity revisited: conditional effects of district diversity in congressional elections. Manuscript, Texas A&M University

³⁰Bishin et al. find that this conclusion holds regardless of whether the state electorate's diversity was measured in terms of demographic characteristics (using the Sullivan index) or in terms of ideological diversity.

- Burden B (2001) The polarizing effects of congressional elections. In: Galderisi PF (ed) *Congressional primaries and the politics of representation*. Rowman and Littlefield, New York
- Burden B (2004) Candidate positioning in US congressional elections. *Br J Polit Sci* 34:211–227
- Butler DM (2009) The effect of the size of voting blocs on incumbents' roll-call voting and the asymmetric polarization of Congress. *Legis Stud Q* 34(3):297–318
- Callander S, Wilkie S (2007) Lies, damned lies, and political campaigns, with Simon Wilkie. *Games Econ Behav* 60(2):262–286
- Clinton J (2006) Representation in Congress: constituents and roll calls in the 106th House. *J Polit* 68(2):397–409
- Downs A (1957) *An economic theory of democracy*. Harper and Row, New York
- Erikson R, Romero D (1990) Candidate equilibrium and the behavioral model of the vote. *Am Polit Sci Rev* 84:1103–1126
- Erikson R, Wright G (2000) Representation of constituency ideology in Congress. In: Brady D, Cogan J, Fiorina M (eds) *Continuity and change in House elections*. Stanford University Press, Stanford, pp 149–177
- Froman LA (1963) *Congressmen and their constituencies*. Rand McNally, Chicago
- Gerber E, Morton RB (1998) Primary election systems and representation. *J Law Econ Organ* 11(2):304–324
- Griffin JD (2006) Electoral competition and democratic responsiveness: a defense of the marginality hypothesis. *J Polit* 68(4):911–921
- Grofman B (2004) Downs and two-party convergence. *Annu Rev Pol Sci* 7:25–46. Polsby N (ed)
- Grofman B, Brunell T (2001) Explaining the ideological differences between the two U.S. senators elected from the same state: an institutional effects model. In: Galderisi PF (ed) *Congressional primaries and the politics of representation*. Rowman and Littlefield, New York, pp 132–142
- Grofman B, Griffin R, Glazer A (1990) Identical geography, different party: a natural experiment on the magnitude of party differences in the U.S. Senate, 1960–1984. In: Johnston RJ, Shelley FM, Taylor PJ (eds) *Developments in electoral geography*. Routledge, London, pp 207–217
- Grofman B, Merrill S, Brunell TL, Koetzle W (1999) The potential electoral disadvantages of a Catch-All party: ideological variance among republicans and democrats in the 50 U.S. states. *Party Polit* 5(2):199–210
- Groseclose T (2001) A model of candidate location when one candidate has a valence advantage. *Am J Polit Sci* 45(4):862–886
- Jones DR (2003) Position-taking and position avoidance in the U.S. Senate. *J Polit* 65(3):851–863
- Kaplan N, Park D, Ridout T (2006) Dialogue in U.S. Senate campaigns? An examination of issue discussion in candidate television advertising. *Am J Polit Sci* 50(3):724–736
- Kenny L, Lotfinia B (2005) Evidence on the importance of spatial models in presidential nominations and elections. *Public Choice* 123(3):439–462
- Koetzle W (1998) The impact of constituency diversity on the competitiveness of U.S. House elections, 1962–1996. *Legis Stud Q* 23:561–573
- Lee DS, Moretti E, Butler MJ (2004) Do voters affect or elect policies? Evidence from the U.S. House. *Q J Econ* 119(3):807–859
- Miller G, Schofield N (2003) Activists and partisan realignment in the United States. *Am Polit Sci Rev* 97:245–260
- Moon W (2004) Party activists, campaign resources, and candidate position taking: theory, tests, and applications. *Br J Polit Sci* 34(4):611–633
- Ono K (2005) Electoral origins of partisan polarization in Congress: debunking the myth. *Extensions* (Fall):15–20
- Owen G, Grofman B (2006) Two-stage electoral competition in two-party contests: persistent divergence of party positions. *Soc Choice Welf* 26:547–569
- Petrocik JR (1996) Issue ownership in presidential elections, with a 1980 case study. *Am J Polit Sci* 40(3):825–850
- Poole KT, Rosenthal H (1984) The polarization of American politics. *J Polit* 46:1061–1079
- Schmidt A, Kenny L, Morton R (1996) Evidence of electoral accountability in the U.S. Senate: are unfaithful agents really punished? *Econ Enquiry* 34:545–567

- Schofield N, Miller G (2007) Elections and activist coalitions in the United States. *Am J Polit Sci* 51(3):518–531
- Schofield N, Sened I (2006) *Multiparty democracy: elections and legislative politics*. Cambridge University Press, Cambridge
- Sigelman L, Buell EH Jr (2004) Avoidance or engagement? Issue convergence in U.S. presidential campaigns, 1960–2000. *Am J Polit Sci* 48(4):650–661
- Snyder J (1994) Safe seats, marginal seats, and party platforms: the logic of platform differentiation. *Econ Polit* 6:201–214
- Winer S, Kenny L, Grofman B (2008) Explaining variation in the degree of electoral competition in a mature democracy: U.S. Senate elections, 1922–2004. Presented at the annual meeting of the Public Choice Society, San Antonio, March
- Wittman D (1983) Candidate motivation: a synthesis of alternatives. *Am Polit Sci Rev* 77:142–157