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*A Spatial Model of Roll Call Voting: Senators, Constituents, Presidents, and Interest Groups in Supreme Court Confirmations**

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We test a spatial model of Supreme Court confirmation votes that examines the effects of (1) the ideological distance between senators' constituents and nominees, (2) the personal ideologies of senators, (3) the qualifications of the nominee, (4) the strength of the president, and (5) the mobilization for and against nominees by interest groups. The data consist of the 1,475 individual confirmation votes from the 1955 nomination of John Harlan until the 1987–88 nomination of Anthony Kennedy (voice votes excluded). All of the above factors significantly affect confirmation voting. The model explains 78% of the variance in senators' decisions, predicts 92% of the individual votes correctly, and predicts all of the aggregate outcomes correctly.

Introduction

This paper examines a spatial model of roll call voting on Supreme Court nominations from John Harlan (1955) to Anthony Kennedy (1988). We approach roll call voting from much the same perspective as proponents of the new institutionalism who have adapted the spatial theory of voting to the roll call setting (Krehbiel and Rivers 1988). We explain below why we believe this approach is particularly promising. But we address the questions raised in recent roll call studies and the literature on representation in legislatures more broadly by considering the impact of constituent desires, interest group pressures, presidential power, and the personal ideologies of legislators on roll call votes. We focus on voting on Supreme Court nominees, which supplies a tractable setting for examining these questions.

The model builds on our previous work (Cameron, Cover, and Segal 1990), in which constituency ideology is measured inferentially using scores developed by the Americans for Democratic Action (ADA). Our new model represents an

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effort to measure constituency influence more directly and to purge the ADA scores of senators' personal ideologies. In this model selected state-level presidential election results are used to measure constituency ideology. We then add an explicit measure of the effect of senators' personal ideologies in addition to the purified constituency measure of the previous model. This model further extends our original work by offering a more complete specification of how the president affects the confirmation process and by incorporating interest group activity into the model as a factor that influences senators' votes.

Ideology, Constituents, and Roll Call Voting

Without slighting other approaches, we start our examination of roll call voting with those studies that try to predict votes based upon the partisanship, ideology, and constituent interests of legislators (Bernstein and Horn 1981; Kalt 1981; Kau and Rubin 1979; MacRae 1970; Nelson and Silberberg 1987; Peltzman 1984).[1] In these studies, ideology is typically measured by ratings issued by interest groups such as the Americans for Democratic Action. Normally, the influence of "ideology" is found to be quite large.

The problem of using pressure group scores to measure the personal ideology of legislators is that these scores will be affected by both constituent and personal factors. So if, for instance, one tries to predict representatives' minimum wage votes using their ADA scores along with demographic variables from their districts, the latter variables enter the equation twice: once directly and once indirectly through the effect they have on ADA scores. Thus, such models dramatically will overestimate the effect of personal ideology and underestimate the effect of constituent representation. Most of the existing roll call studies of confirmation votes fall generally into this category (Felice and Weisberg 1988; Rohde and Spaeth 1976; Songer 1979). Persistent effects for ideology (i.e., ADA or ACA scores) and partisanship are found, but to the extent that constituent ideology is represented by such scores, the interpretation of the results is subject to question.

More recent roll call studies have begun to examine the extent to which legislators act as delegates on behalf of their constituents versus the extent to which they represent their own preferences (or "shirk") (Carson and Oppenheimer 1984; Kalt and Zupan 1984; Kau and Rubin 1979, 1982). The typical procedure is to regress interest group rating scores on the demographic characteristics of the legislators' constituency, such as percentage black, percentage union, percentage Democrat, and so forth. To the extent that the demographic variables appropriately measure state-level ideology, the predicted scores from the equation indicate how we would expect the legislators to vote based on the prefer-

[1] For a review of other influential approaches, see Collie (1984).

ences of their constituents. The residuals from the equation, which no longer correlate with constituency demographic characteristics, are then presumed to measure the effect of legislators' personal ideologies on roll call voting.[2]

Two problems with this now-standard methodology seem particularly vexing: the correlation fallacy and the cross-section problem. The correlation fallacy arises because, as Achen (1978) noted, a correlation between constituency characteristics (including public opinion) and roll call votes does not measure representation. Very simply, politicians' positions on an issue may be very different from that desired by their constituents even if the *variation* in the politicians' positions correlates highly with the *variation* in the constituents' characteristics. If one is interested in representation, one needs to measure the *difference* or distance between the positions taken on issues by the representative and those that constituents would wish their representative to take.

The cross-sectional problem is closely related. A cross-sectional study of roll call voting using the standard methodology explains the dispersion of support for a proposal around the mean but leaves unexamined how this support changes if the proposal changes (VanDoren 1990). For example, examination of a single confirmation vote cannot tell us the extent to which the judicial ideology and perceived qualifications of a nominee affect the votes of senators because those characteristics do not vary in the single cross-section. Yet if we are interested in whether a senator is trying to represent the wishes of a constituency with preferences about the judicial ideology and qualifications of nominees, we need to consider how the senator's behavior changes as those characteristics change. In short, one needs to measure in the same substantive policy space the difference between actual proposals, the "ideal" proposals preferred by constituents, and those chosen by the senator. In sum, this set of problems with the standard methodology suggests the need for roll call analysis employing spatial models of behavior.

A Spatial Model of Roll Call Voting

Spatial models of roll call behavior, those that map several bills simultaneously in some policy space such as money or ideology, allow us to answer many questions that otherwise could not be resolved. For instance, if we examined several health bills simultaneously and included the cost of the bills as independent variables, we might determine the relationship between the cost of the bill and the probability of legislators' voting yes. Further, since distances between the bill and the ideal points of legislators could in principle readily be deter-

[2]The residuals may measure the *effect* of personal ideology, but they do not measure personal ideology itself. If Joe Biden is slightly more conservative than we would expect a Delaware Democrat to be, this only means that Biden is relatively more conservative than his constituents are. This does not mean that he is personally conservative.

mined, the influence of various political actors could easily be assessed. For example, do presidential initiatives pass because the president influences Congress, or do they win only when the bill is close to the median member? Do presidents who face opposition-controlled chambers do worse because the average senator is further away, or might there be institutional factors that lessen the president's influence under such circumstances? Does lobbying influence legislators, or are lobbyists merely preaching to the converted?

The use of such models of roll call voting is just beginning. Krehbiel and Rivers (1988) applied a spatial model of roll call voting to examine the relative effect of committee power on congressional outcomes. Their study requires deriving the ideal points of senators. With one roll call vote, one could determine whether that ideal point is above or below the proposed value. By examining two amendments, the authors were able to place members' preferences for the 1980 minimum wage within three ranges (less than \$2.975, between \$2.975 and \$3.10, and greater than \$3.10). Using an ordered probit analysis, precise ideal points were then estimated using constituent characteristics as independent variables. In this section we propose an alternative but complementary spatial model of roll call voting.

A Simple Random Utility Model of Roll Call Voting

We draw on models in the spatial theory of elections (esp. Enelow and Hinich 1982; 1984, secs. 5.1–2) and models of qualitative choice in economics (Train 1986), marketing (Louviere 1988), and psychology (Krantz and Tversky 1971). We develop the model in the context of confirmation voting, but extending it to roll call voting in general is straightforward. For purposes of exposition, we assume sincere voting or rationally nonstrategic voting (Denzau, Riker, and Shepsle 1985) throughout. We modify the basic model to distinguish between personal and constituency preferences shortly.

Assume senator i votes for nominee j iff

$$U_{ij} \geq \bar{u}_{ij}$$

where $\bar{u}_{ij}$ is a reservation utility level that may vary across senators and nominations; U_{ij} is assumed to be a function of the characteristics of the nominee (including contextual features of the nomination such as presidential control of the Senate) and of the senator. Let N_{ij} denote the vector of all relevant characteristics of the nominee for senator i and S_{ij} denote the vector of all relevant characteristics of the senator at the time of nominee j. Partition the elements of N_{ij} into two subvectors: the first, labeled n_{ij}, composed of those characteristics of the nominee that are observable to outside researchers and the second composed of those that are not observable. Similarly, partition S_{ij} into a subvector s_{ij} of observable characteristics of the senator and into another subvector of unob-

servable characteristics. We may decompose U_{ij} into two subfunctions: one a function of observable variables and one a function of unobservable ones, to wit,

$$U_{ij}(N_{ij}, S_{ij}) = V_{ij}(n_{ij}, s_{ij}, \beta) + e_{ij}$$

where β is a vector of parameters. Assume that senator i's reservation utility has three components: α_i, a value constant across all nominees for senator i but possibly differing across senators; α_j, a component specific to nominee j but common to all senators; and, $\bar{V}$, a value common to all senators over all nominees. Then (via substitution) senator i votes for nominee j iff

$$V_{ij}(n_{ij}, s_{ij}, \beta) + e_{ij} \geqslant \alpha_i + \alpha_j + \bar{V}$$

or

$$V_{ij}(n_{ij}, s_{ij}, \beta) - \bar{V} - \alpha_i - \alpha_j \leqslant e_{ij} \tag{1}$$

Given a specific functional form for $V_{ij}(\cdot)$ and a specific distribution for the random variable e_{ij}, we may estimate the probability of a yes vote for nominee j from senator i. We assume below that $V_{ij}(\cdot)$ is linear (in parameters) in n_{ij} and s_{ij} and that each e_{ij} is distributed independently, identically in accordance with the extreme value (Weibull) distribution. Accordingly, the model may be estimated as a logit model. The assumptions about the alphas suggest the dummy variables technique for pooled time series of cross-sections.

The spatial character of the model comes from the specific implementation of s_{ij}. Consider a closed, bounded, and connected subset of the real line normalized to [0, 1]. (We ignore higher dimensional spaces for expositional clarity.) Let $y_j, \bar{y}_i \in [0, 1]$. Define

$$s_{ij} = d(y_j - \bar{y}_i) \tag{2}$$

where $d(\cdot)$ is a distance metric, assumed henceforth to be squared Euclidean distance. We assume $V_{ij}(\cdot)$ is unimodal in s_{ij} with

$$\underset{s_{ij}}{\text{argmax}}\ V_{ij}(\cdot) = 0$$

This has the following interpretation: y_j is nominee j's judicial ideology measured on a 0–1 scale and $\bar{y}_i$ is senator i's ideal point for judicial ideology on the same scale. Given values for the n_{ij}, the observable component of i's utility function is single peaked in s_{ij} and achieves a maximum at $y_j = \bar{y}_i$.

This model of roll call voting may be rationalized in either of two ways. The simplest interpretation is that the utility function actually is the senator's own utility function (as in Schneider 1979 or Poole 1988). Rather more plausibly in our opinion, the "utility" function may reflect the solution to an underlying problem of vote maximization (Mayhew 1974). In particular, suppose that voters economize on information about politicians by using simple brand names or

policy reputations to infer candidate positions on issues (Downs 1957; Enelow and Hinich 1984, chap. 4). Then electorally minded senators have an incentive to maintain the "right" policy reputation (Dougan and Munger 1989). In addition, suppose there is a relationship between policy brand names and nominee characteristics so that, for example, support for nominee Robert Bork could potentially undermine Senator Edward Kennedy's reputation for liberalism while support for Bork could potentially bolster Senator Jesse Helms's reputation for conservatism, should their constituents ever learn of their support. Then preferences over policy brand names will induce preferences over nominees. (This argument is formalized in Appendix A.) It is these induced preferences that are analyzed with the spatial model of voting described above.[3]

The notion that politicians act to preserve an electorally valuable policy reputation creates some problems for the idea of representation. The vote-maximizing reputation for a politician would seem to be the reputation that implies adhering to constituency desires more closely than any other reputation would for that politician. (Otherwise, the politician could gain more votes with a different reputation and thus the original reputation could not be vote maximizing.) Therefore, maintaining electorally optimal policy reputations seems to imply a strong type of representation.[4] Nonetheless, maintaining a given reputation may occasionally require flouting constituency wishes on specific issues (i.e., acting nonrepresentatively). Without delving too far into the philosophical complexities of the idea of representation (Pitkin 1967), one can see reputation-preserving behavior as consistent with a fairly strong type of representation.

Placing Legislators and Proposals in the Same Policy Space

Both policy proposals (nominees) and senators' ideal points must be placed in the same policy space if roll call votes are to be analyzed with an explicit spatial model. Placing proposals in a policy space is often easy; placing senators' ideal points in the same policy space requires more ingenuity. Krehbiel and Rivers (1988) suggest one method for locating ideal points, given votes on a series of related proposals. In Appendix A we present an alternative (and complementary) procedure based on our rationale for the random utility model of voting. In essence, if one assumes a general form for the (potential) relationship between policy reputations and nominee characteristics, then, given the earlier random

[3]This rationale is broadly compatible with Key's (1967) arguments about the power of "latent" public opinion and with Arnold's (1990) discussion of traceable policy actions.

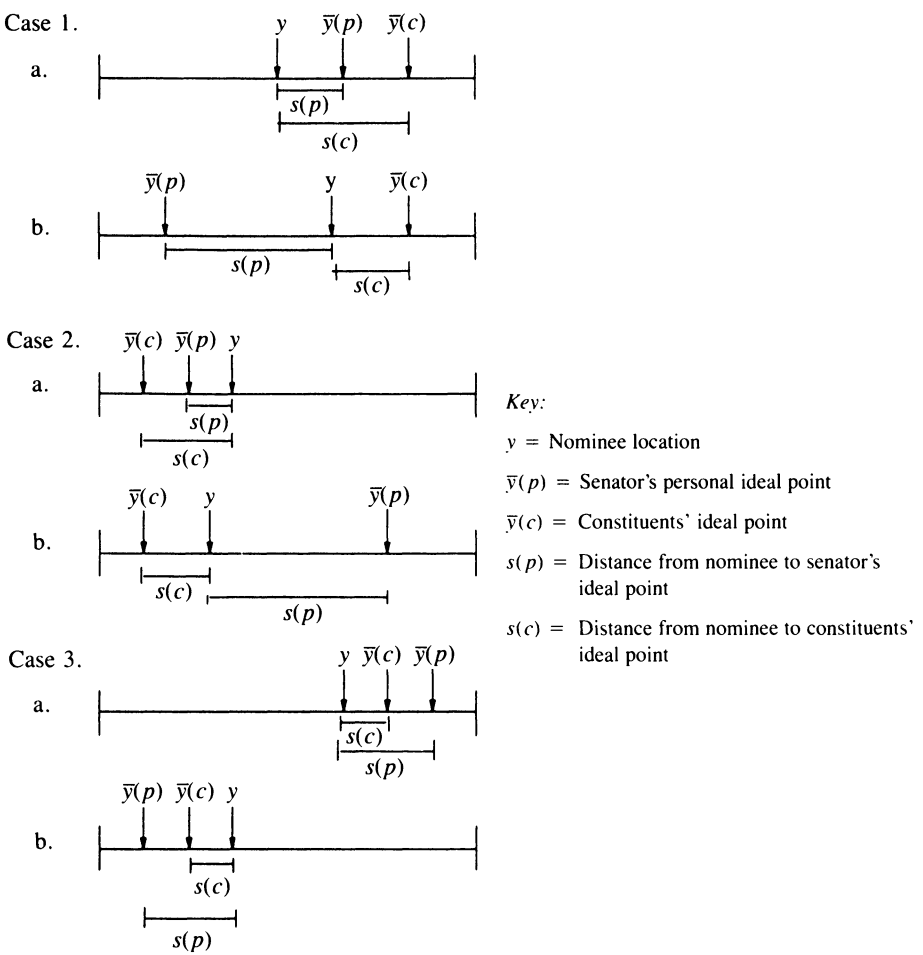
[4]This argument rests on an assumption of effective electoral competition. Effective electoral competition can exist even with very high rates of reelection for incumbents or even without actively contested races if entry and exit into the political market is sufficiently easy (see Baumol, Panzar, and Willig 1982 for a similar argument). Of course, Senate races are quite competitive even by conventional measures.

utility model of voting, one can approximate the function for converting policy brand names into nominee space. Details are given in Appendix A.

Adding Personal Preferences to the Model

In principle, adding personal policy preferences to the model is straightforward. Let $\bar{y}_i^c$ be senator i's optimal location in nominee characteristics space for preserving his or her ideological reputation. Assume, however, that the senator has direct personal preferences in this space, with those preferences unimodal at ideal point $\bar{y}_i^p$. Define s_{ij}^c and s_{ij}^p as in equation (2) but using $\bar{y}_i^c$ and $\bar{y}_i^p$, respec-

Figure 1. Spatial Distances between Nominees, Senators, and Constituents



tively, in place of $\bar{y}_i$. Then proceed as in equation (1). The estimated coefficients on s^c_{ij} and s^p_{ij} provide an indication of the relative importance of representation and personal preferences in the senator's voting behavior.[5]

Suppose one does not have a measure of the senator's personal ideology but only a measure of the tendency to shirk in one direction or the other (i.e., the information given by an ideology residual). One cannot proceed as straightforwardly, but nonetheless one can detect the effect of shirking in a specific roll call vote. Consider the six cases portrayed in Figure 1 (for simplicity, subscripts are dropped in the figure). In case 1, $\bar{y}^c_i$ lies to the right of y_j on the 0–1 scale, and the ideology residual indicates $\bar{y}^p_i$ must lie to the left of $\bar{y}^c_i$. In case 1a, s^p is less than s^c, so if the senator shirks (places positive weight on s^p), he or she will be more likely to vote for the nominee than if he or she had focused exclusively on maintaining policy reputation. If, however, $\bar{y}^p_i$ lies far beyond y_j (as shown in case 1b) then s^p may be larger than s^c and shirking may actually decrease the probability of voting for the nominee. Unfortunately cases 1a and 1b are indistinguishable using an ideology residual; therefore, one cannot offer a *definite* hypothesis about the effect of the residual in case 1. However, it seems likely the residual will increase the probability of a yes vote. Case 2 is similar to case 1, with $\bar{y}^c_i$ and $\bar{y}^p_i$ falling to the left of y_j. Again, no definite hypothesis is possible, although a positive effect seems likely. Case 3, however, is very different. In both cases 3a and 3b, $\bar{y}^c_i$ and $\bar{y}^p_i$ fall on the same side of N, and $\bar{y}^p_i$ farther from y_j than $\bar{y}^c_i$. Accordingly, s^p must be larger than s^c. Consequently, shirking must lower the probability of voting for the nominee (given the earlier assumption of unimodal utility functions). This is an unequivocal, testable hypothesis about shirking in the spatial framework.

Measuring Constituent and Personal Ideology

Our concern here is to develop a measure of state-level ideology so that ADA scores can be partitioned into that part attributable to constituent preferences and that part presumably based on the personal preferences of senators. The measure we develop must be usable at least as far back as the 1955 Harlan nomination.

As indicated previously, the most common method involves regressing ADA scores on a variety of demographic characteristics and using the predicted scores as a measure of state-level ideology. Such predictions will be purged of personal ideology, but such regressions are very sensitive to which of the innumerable indirect surrogates of ideology are used. Our theories of political culture

[5] If $\bar{y}^c_i = \bar{y}^p_i$, then one cannot untangle the senator's motivation in voting. What appears to be representation (of the brand-name-preserving variety) could actually be pursuit of individual ideology. We take this to be the major thrust of Poole's comments (1988, 127–28). "Shirking" will only be detectable if $\bar{y}^c_i \neq \bar{y}^p_i$; hence, this method *underestimates* to some degree the importance of personal ideology.

are probably not strong enough to help us decide which variables to include and which to exclude. In addition, such models can easily fall victim to the individualistic fallacy. The fact that blacks may be more liberal than whites on average in no way means that states with large black populations will be more liberal on average than states with small black populations. States such as Mississippi are a prime example of this.

A second approach is to use state-level social survey data. Unfortunately, we do not have enough data to allow us to start aggregating in the smaller states prior to the mid-1970s (Wright, Erikson, and McIver 1985).

A third alternative, the one we choose, is to use selected presidential elections.[6] We know that certain elections tap the traditional liberal-conservative dimension. In these elections the difference between a state's Democratic vote and the national Democratic vote might be a fine indicator of state-level liberalism. For instance, in 1972 Massachusetts was 16.7 percentage points more Democratic than the nation, followed by Rhode Island (9.3) and Minnesota (8.6). On the other extreme, Mississippi was 17.9 percentage points less Democratic than the national average, followed by Oklahoma, Georgia, Alabama, and Utah. We used two criteria for accepting elections: the elections had to have evidence of strong ideological content, and there could be no significant third parties running. Because of third parties, we excluded 1948, 1968, and 1980. Of the remaining elections, we eliminated 1952 and 1956 as nonideological. While the 1976 election did have a marginal ideological component, there was also a strong regional reaction to Carter's candidacy that makes it inappropriate for inclusion. The elections that fit the criteria then are 1964, 1972, and 1984. These choices are consistent with the results of Macdonald and Rabinowitz (1987), who find these to be three of the four most ideological presidential elections since 1920.[7]

Knowing the average ideological proclivity of voters in a state will not necessarily give us the average ideological proclivity of a senator's constituents in a state. As Fiorina (1974), Fenno (1978), Peltzman (1984), and others have demonstrated, Democrats and Republicans in Congress represent different constituencies. Interesting support for this "two constituencies" hypothesis comes from Shapiro et al. (1990), who demonstrate that as elections approach, senators may move closer to the median voter within their party, not the median voter within their state. For instance, Democratic senators who are more conservative than the median Democrat but more liberal than the median voter may tend to move toward the *left* as elections approach.[8] Thus, the predicted ADA scores that we

[6] We thank Gerald Wright, who first suggested this approach to measuring state-level ideology to us.

[7] Their fourth election was 1968, which we exclude because of the Wallace factor.

[8] Explanations for this apparently non-Downsian behavior include concern over primaries and mobilizing party activists. Such behavior is also consistent with the directional theory of voting (see Rabinowitz and Macdonald 1989).

seek, those expunged of personal influence, will have to represent partisan differences as well. The residuals from the model become our measure of shirking.

To this end we regressed each senator's actual ADA score in the year of a confirmation vote on state-level presidential election results from our key ideological elections (1964, 1972, and 1984) along with two dummy variables for the partisanship of the senator, Democrat and Southern Democrat.[9] For nominations through 1968, we used the 1964 election; for nominations from 1969 through 1975, we used the 1972 election; and for nominations from 1981 through 1988, we used the 1984 election. Constituent preferences are simply the predictions from the equation. These predictions are uncontaminated by the effects of personal ideology and partisanship.[10]

Confirmation Voting

Our model thus far is broadly applicable to roll call voting. We now apply it to the specific case of Supreme Court nominations. We have discussed our basic model of confirmation voting elsewhere (Cameron, Cover, and Segal 1990), so we limit those aspects of it to a summary description here. Briefly, we see confirmation voting largely as an exercise in position taking, with few incentives either for credit claiming or sophisticated voting. Close students of confirmation voting usually suggest that public concern over nominees turns on the nominees' perceived judicial ideology and perceived qualifications. Ideologically proximate nominees should be perceived as attractive; poorly qualified nominees, unattractive; and ideologically distant and poorly qualified nominees, very unattractive.

Beyond these factors the president and interest groups may take an active role in the confirmation process, particularly if the confirmation becomes contro-

[9] We controlled for home state advantage in presidential election voting using the formula derived by Lewis-Beck and Rice (1983).

[10] The results of the regressions through 1968, from 1969 through 1975, and from 1981 forward are respectively

$$\text{ADA} = 27.3 + .95\text{*DVote} + 42.3\text{*Dem} - 25.7\text{*SDem, adj } R^2 = .49;$$

$$\text{ADA} = 35.3 + 2.4\text{*DVote} + 37.5\text{*Dem} - 21.0\text{*SDem, adj } R^2 = .58;$$

$$\text{ADA} = 29.5 + 2.1\text{*DVote} + 49.5\text{*Dem} - 21.4\text{*SDem, adj } R^2 = .69.$$

All variables are significant at $p < .05$.

One potential problem with this methodology is that to the extent that pure representational behavior is not entirely explained by our predictor variables, the residuals will pick up some of that representational behavior and treat it as shirking. For instance, the ideological distance between Democratic and Republican constituents may not be the same within every southern state. Similar studies, however, show that these residuals do behave as if they measure shirking; for instance, they wax and wane over the electoral cycle and correlate with previous electoral margins (Kalt and Zupan 1990). With the above caveats in mind, we treat the residuals as largely representing nonconstituent interests.

versial. The president will generally have more political resources to deploy and can deploy these resources more effectively when his party controls the Senate and when he is not in the fourth year of his term. In addition, presidential resources are likely to have a greater impact on members of his own party than on senators of the other party (Massaro 1990). Finally, we include the president's popularity, which has been extensively linked to executive success in the legislative arena (Edwards 1980, 1989; Kernell 1986; Mouw and MacKuen 1989; Neustadt 1960; Ostrom and Simon 1985; Rivers and Rose 1985; Rohde and Simon 1985). Next, we account for the fact that organized interest groups, representing, as they do, more active citizens and potential campaign contributions, might also be able to influence senators. Certainly, there is historical evidence that lobbying campaigns have influenced the confirmation process. For example, Fish (1989) argues that the rejection of Judge Parker in 1930 was due in large part to the activity of organized labor and the NAACP in mobilizing opposition to the nomination. The nomination of Haynsworth brought forth a torrent of interest group activity, which in turn was exceeded by the almost frenetic mobilization of groups during the Bork nomination.

Despite the importance of group activity in these and possibly other nominations, almost no systematic empirical work has been undertaken on the role of interest groups in nominations to the Supreme Court (but see Caldeira and Wright 1989). In fact, while numerous scholars have, with mixed results, examined the motivation and consequences of campaign contributions by organized groups (Austin-Smith 1987; Baron 1989; Chappell 1982; Denzau and Munger 1986; Jacobson 1987; Welch 1974; J. Wright 1985), very few studies systematically gauge the effect of lobbying on legislators' votes or governmental decisions (see Schlozman and Tierney 1986, chap. 12; J. Wright 1990). Surprisingly, there is more systematic evidence of the influence of organized interests on the judicial process (Caldeira and Wright 1988; O'Connor and Epstein 1983; Puro 1971).

Data and Variables

Dependent Variable

The dependent variable consists of the 1,475 confirmation votes cast by senators from the nomination of John Harlan through the nomination of Anthony Kennedy. We exclude nominees approved by voice votes on theoretical and empirical grounds. Theoretically, senators convey no information about their ideological brand name to constituents when nominees are approved by voice votes. The only information conveyed is that less than a "sufficient second," one-fifth of those senators present, desired their votes to be recorded. Empirically, there is no way to be certain how particular senators would have voted. Combing the *Congressional Record* for statements of opposition will certainly capture intentions of loquacious senators but will likely miss some quieter senators who might

have voted no. Yet by excluding voice votes, we create a selection bias that might adversely affect our results. Fortunately, as we demonstrate below, our results hold whether or not voice votes are included.

Nominee Ideology and Qualifications

To determine perceptions of nominees' qualifications and judicial philosophy, we conducted a content analysis of statements from newspaper editorials from the time of the nomination by the president until the vote by the Senate. We selected four of the nation's leading papers, two with a liberal stance (*New York Times* and *Washington Post*) and two with a more conservative outlook (*Chicago Tribune* and *Los Angeles Times*). The results are reported in Table 1.

Table 1. Nominee Margin, Vote Status, Ideology, and Qualifications

Nominee	Year	President's Status[a]	Margin	Qualifications	Ideology
Warren	1954	Strong	Voice	.74	.75
Harlan	1955	Weak	71–11	.86	.88
Brennan	1957	Weak	Voice	1.00	1.00
Whittaker	1957	Weak	Voice	1.00	.50
Stewart	1959	Weak	70–17	1.00	.75
White	1962	Strong	Voice	.50	.50
Goldberg	1962	Strong	Voice	.92	.75
Fortas, 1	1965	Strong	Voice	1.00	1.00
Marshall	1967	Strong	69–11	.84	1.00
Fortas, 2	1968	Weak	45–43[b]	.64	.85
Burger	1969	Weak	74–3	.96	.12
Haynsworth	1969	Weak	45–55	.34	.16
Carswell	1970	Weak	45–51	.11	.04
Blackmun	1970	Weak	94–0	.97	.12
Powell	1971	Weak	89–1	1.00	.17
Rehnquist, 1	1971	Weak	68–26	.89	.05
Stevens	1975	Weak	98–0	.96	.25
O'Connor	1981	Strong	99–0	1.00	.48
Rehnquist, 2	1986	Strong	65–33	.40	.05
Scalia	1986	Strong	98–0	1.00	.00
Bork	1987	Weak	42–58	.79	.10
Kennedy	1988	Weak	97–0	.89	.37

[a] The president is labeled strong in a nonelection year in which the president's party controls the Senate and weak otherwise.

[b] Vote on cloture—failed to receive necessary two-thirds majority.

Qualifications are measured from 0.00 (least qualified) to 1.00 (most qualified). Ideology is measured from 0.00 (most conservative) to 1.00 (most liberal).

Qualifications ranges from zero (most unqualified) to one (most qualified). Ideology ranges from zero (extremely conservative) to one (extremely liberal).

As indicated elsewhere (Cameron, Cover, and Segal 1990), the data are reliable and appear to be valid. The ideology scores meet the strictest test for validity, predictive validity. The ideology scores correlate at .80 with the ideological direction of the votes the approved nominees later cast on the court (Segal and Cover 1989).

Constituent Ideology

As already noted, we measure constituent ideology as the predictions from regressing ADA scores on presidential election voting and partisanship.

Constituent Distance

Constituent distance is the squared distance between nominee ideology and constituent ideology. The scaling procedure employed is discussed in Appendix A.

Personal Ideology

We measure each senator's personal "ideology" as the difference between his or her actual and predicted ADA scores. As discussed above, we make two predictions about the effect of the residuals. We expect cases 1 and 2 ("Shirk +") to be positive and case 3 ("Shirk −") to be negative.

Presidential Strength and Same Party Status

We measured presidential strength as a dummy variable that takes the value one when the president's party controls the Senate and the president is not in the fourth year of his term and zero otherwise. We measured same party as a dummy variable that takes the value one when a senator is of the same party as the president and zero otherwise.

Presidential Popularity

We measure the president's popularity as the percentage of people who approve of the job the incumbent is doing as president as measured by the Gallup survey prior to the Senate vote.

Interest Group Activity

In the best of all possible situations, we would have senator-level data on the amount of lobbying by organized interests dating back to 1954. Obviously, such data are unavailable. Thus, while recognizing that some senators will be lobbied more than others, we choose a variable that measures lobbying activity with respect to each nominee, the number of organized interests presenting testimony for (interest group pro) and against the nominee (interest group con) at the Senate Judiciary Committee hearings. Presumably, the more organized op-

Table 2. Dependent and Independent Variables

Variable	Mean	Minimum	Maximum	Std. Dev.
Vote	.79	0.00	1.00	.41
Distance	.14	.00	.65	.12
Qualifications (lack of)	.22	.00	.89	.27
Qualifications × distance	.03	.00	.47	.05
Shirk +	.08	.00	.69	.12
Shirk −	.09	.00	.75	.13
Strong president	.25	.00	1.00	.43
Presidential popularity	54.90	40.00	70.00	9.22
Same party	.48	.00	1.00	.50
Interest group +	5.96	.00	21.00	6.50
Interest group −	6.15	.00	17.00	5.87

position to a nominee, the less support he or she will have, and alternatively, the more organized support for a nominee, the more support he or she will have.

We have gathered data on nominee ideology and qualifications, presidential strength and popularity, interest group activity, and senators' personal and constituent ideologies for the 16 nominations from John Harlan to Anthony Kennedy in order to study the 1,475 confirmation votes cast by senators in those nominations. We supply additional information on the nominees in Table 1. The variables are summarized in Table 2.

Results

We estimated the model using logit analysis. The results are presented in Table 3.A. (The essentially similar estimates for the model with voice votes included is presented in Table 3.B.) As can be seen, the results for the model are quite impressive. All of the estimated logit coefficients were of the predicted sign, were of reasonable magnitudes, and were highly significant. Ninety-two percent of the votes were predicted correctly, for a 62% reduction in error. Though logit does not have a commonly accepted R^2, the estimated R^2 running the model with the McKelvey-Zavoina probit program is .78.[11] Judged by an array of statistical criteria, the model was very successful.

As the results indicate, confirmation voting is decisively affected by the ideological distance between senators' constituents and nominees. A one standard deviation increase in that distance decreases the probability of a yes vote by .32. Qualifications by itself has only a moderate effect on voting. A one standard deviation change in this variable, which accounts for a full quarter of the scale,

[11] The correlation between the probit and logit estimates is greater than .99.

Table 3.A. Logit Estimates of Basic Supreme Court Confirmation Model Excluding Voice Votes

Variable	MLE	SE	Impact
Constant	3.74	.69	—
Distance	−12.74	1.67	−.32
Qualifications (lack of)	−2.72	.83	−.17
Distance × qualifications	−16.13	4.48	−.19
Shirk +	3.82	1.09	.11
Shirk −	−6.94	.85	−.21
Strong president	3.09	.35	.29
Same party	1.11	.24	.14
Presidential popularity	.05	.01	.11
Interest group +	.04	.02	.06
Interest group −	−.23	.03	−.29
χ^2/df	621/1,464		
Est. R^2	.78		
Prop. pred. corr.	.92		
Prop. reduction error	.62		

Note: Impact measures the change in probability of a yes vote given a one standard deviation change in the independent variable for an undecided ($p = .5$) senator.

All coefficients are significant at $p < .001$ except interest group + ($p < .05$).

effects the probability of a yes vote by .17. This is not to say though that qualifications matters only moderately, for that is not correct. Qualifications has an additional effect on voting when it interacts with ideological distance. Here, a one standard deviation change lowers the probability of a yes vote by .19. Thus, senators will overwhelmingly vote for close nominees who are well qualified, and for the most part, they will also vote for close nominees who are not so well qualified. Senators are moderately likely to vote against highly qualified distant nominees; they are almost certain not to vote for distant nominees who are not highly qualified.

Because we do not have direct measures of the personal ideology of senators, we cannot make claims about the effect of the ideological distance between the personal ideology of senators and the ideology of nominees. Further, we cannot be completely certain that the residuals do not partially represent some unmeasured constituency-based interests. Nevertheless, the results do suggest that even when measured indirectly, the personal ideology of senators does have

Table 3.B. Logit Estimates of Basic Supreme Court Confirmation Model Including Voice Votes

Variable	MLE	SE	Impact
Constant	2.87	.63	—
Distance	−10.56	1.44	−.30
Qualifications (lack of)	−2.16	.80	−.13
Distance × qualifications	−22.62	4.27	−.26
Shirk +	4.18	1.11	.12
Shirk −	−6.63	.82	−.20
Strong president	2.99	.34	.31
Same party	1.05	.23	.13
Presidential popularity	.06	.01	.16
Interest group +	.05	.02	.08
Interest group −	−.25	.03	−.31
χ^2/df	636/2,043		
Est. R^2	.80		
Prop. pred. corr.	.95		
Prop. reduction error	.67		

Note: Estimated R^2 from McKelvey-Zavoina probit package. Impact measures the change in probability of a yes vote given a one standard deviation change in the independent variable for an undecided ($p = .5$) senator.

All coefficients significant at $p < .001$ except interest group + ($p = .01$).

a significant impact on confirmation voting. When both the senator and the nominee are either to the right or the left of the senator's constituents, the senator is more likely to vote for the nominee. Alternatively, when the senator is on the opposite side of his or her constituents from the nominee, the senator is less likely to vote for the nominee.

We next examine presidential influence on the votes of senators. First, presidents clearly are more successful when they are in a strong legislative position (i.e., when their party controls the Senate and they are not in an election year). This is especially the case for senators who remain undecided after examining the characteristics of the nominee. According to the model, a switch from a weak to a strong president raises to .79 the probability of a yes vote from a senator who was previously undecided. A lesser effect is felt for being a member of the president's party. Same party status raises the probability of a yes vote from .5 to .64.

The final presidential variable that we examine is the president's approval

rating. Unquestionably, there is no one-to-one relationship between presidential popularity and confirmation approvals. President Nixon, for instance, was at the height of his popularity when Haynsworth and Carswell were rejected (65% and 63% approval, respectively). President Johnson's approval rating was only at 39% when Thurgood Marshall was confirmed. Yet it is also true that Johnson's approval ratings were almost as low when Fortas was rejected as chief justice (42%), and President Reagan was near his second-term low when Bork was defeated (50%). On average, the difference between an unpopular president (e.g., 40% approval) and a popular one (e.g., 60% approval) is the difference for an undecided senator between a .50 probability of voting yes and a .77 probability of voting yes.

Finally, strong interest group mobilization against a nominee can hurt a candidate, while interest group mobilization for a nominee can have substantively slight but statistically significant positive effects. The Bork nomination provides an interesting example. Seventeen organized groups provided testimony against Bork at the Judiciary Committee hearings; 20 provided testimony for him. The net effect was to lower the log of the odds ratio of a yes vote by 3.11. In probabilistic terms, a moderate-to-conservative southern senator who might have voted for Bork with a probability of .99 without any interest group pressure would have a probability of voting for him of .60 after the intensive interest group mobilization.

Interest groups appear to have had an even more devastating effect on the Haynsworth nomination. Sixteen groups presented testimony against Haynsworth; only three presented testimony for him. The net effect was to lower the log of the odds ratio of a yes vote by 3.85. Senators who would have had a .99 probability of voting for the judge without any interest group involvement would lean against confirmation ($p = .43$) after the lobbying campaign. Though many conservatives blamed the Reagan White House for failing to mobilize support for Bork, it would seem the Nixon White House was far more "culpable" in its failure to organize support for Haynsworth.

Beyond the parameter estimates, the model does an admirable job in predicting confirmation outcomes. Table 4 presents the actual and predicted no votes for every confirmation from John Harlan (1955) through Anthony Kennedy (1988).

Overall, the mean absolute error of the model is but 3.18 votes per confirmation. The correlation between actual and predicted no votes is .97. On a nomination-level basis, the model overpredicts opposition to the Harlan nomination and underpredicts opposition to Stewart and Bork nominations. All other nominations are within three votes of predicted totals. This, it should be stressed, is accomplished without any dummy variables for particular nominations that would prevent out-of-sample predictions.

Gauging the success of the model in terms of confirmation outcomes is not

Table 4. Actual versus Predicted No Votes

Nominee	Actual	Predicted
Harlan	11	18
Stewart	17	0
Marshall	11	8
Fortas, 2	43	45
Burger	3	0
Haynsworth	55	52
Carswell	51	48
Blackmun	0	0
Powell	1	0
Rehnquist, 1	26	29
Stevens	0	0
O'Connor	0	0
Rehnquist, 2	33	30
Scalia	0	0
Bork	58	53
Kennedy	0	0
MAE all votes		3.18
r actual versus predicted		.97

Note: MAE = mean absolute error.

a straightforward task. The vote on the Fortas nomination as chief justice was 45 yea and 43 nay, but this majority was insufficient to invoke cloture, and thus the nomination was defeated. Under current rules, 41 no votes guarantees that cloture cannot be invoked. In fact, no nominee through 1988 has been confirmed with more than the 33 negative votes received by Rehnquist in 1986. If we use contemporary cloture standards as our decision rule for passage, then we correctly predict the outcome of every nomination.

We further tested our statistical model for the possibility of violated assumptions. The final result is that our substantive conclusions do not change. Details are reported in Appendix B.

Discussion and Conclusion

By conducting our analysis within an explicit spatial framework, we directly address the effects of nominee characteristics on senators' voting decisions. We find that the votes of senators are highly dependent on the ideological distance between a senator's constituents and the nominee, on the perceived qualifications of the nominee, and on the interaction between the two. In short, the reception

of a nominee depends in a fairly subtle way on the characteristics of the nominee and the detailed composition of the Senate.

The spatial framework also allows us to address questions of representation more directly than similar studies of roll call voting. As noted earlier, inferences about representation are clouded by the use of a residual to measure personal ideology. In addition, we view representation as more complex than simple policy congruence. Instead, senators may try to maintain optimal policy reputations across a range of issues. We suggest this behavior is compatible with a strong form of representation. Starting with this view of representation, we find that the individual policy preferences of senators in fact have a measurable impact on their votes for Supreme Court nominees. This finding indicates some degree of nonrepresentational behavior, even under a looser concept of representation.

Finally, we find that the context of a nomination strongly influences roll call votes. The strength and popularity of the president emerge as important determinants of individual votes. In addition, the relative mobilization of interest groups around a nominee can have a profound effect on voting.

We close by noting that no analysis, including our own, has done a fully satisfactory job of incorporating the disparate factors involved in roll call voting. This is because roll call votes are merely the final (or perhaps the penultimate) stage in a complex policy process. For example, we consider the ideology and qualifications of nominees and the mobilization of interest groups to be exogenous. However, from a broader perspective, presidents probably pick nominees with an eye toward the entire process, including their chance of confirmation and impact on the Court. Similarly, interest groups may mobilize for a variety of reasons. Hence, from a more inclusive perspective, nominee characteristics and group mobilization should be considered endogenous. This is simple to say; the difficulty lies in conceptualizing and developing a system of equations to describe the entire confirmation process. We know of no studies of roll call voting that adequately resolve this problem (although VanDoren 1990 is clearly in this spirit). Accordingly, attempts to address an entire policy process, such as the confirmation process, could well prove a fruitful departure for future studies of roll call voting.

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APPENDIX A

We suggested in the text that politicians have preferences over policy reputations, that there is likely to be a function relating points in reputation space with points in nominee characteristics space, and that therefore politicians have induced preferences over nominee characteristics. In this appendix

we make this argument more precise and suggest a method for approximating the conversion function between reputation space and characteristics space.

Preferences and Conversion Function

Let $X = [0, 1]$ and $Y = [0, 1]$ be the reputation and characteristics spaces, respectively. Let $\phi_i: X \rightarrow Y$ be a continuous and one-to-one (but not necessarily an onto) function. Index the elements of X and Y so that $y_j = \phi_i(x_j)$.

This setup is meant to have the following interpretation: X is a scale indicating senators' policy brand names; Y is a scale indicating nominee judicial ideology, as perceived by senators; ϕ_i maps points in X into points in Y for senator i. The ϕ_i function thus acts somewhat like the predictive mappings in Enelow and Hinich (1990); given a reputation, senator i understands the location of the corresponding nominee ideology. We assume the ϕ_i functions are identical for all senators so that at any given time liberal and conservative senators have a common understanding of their best corresponding nominee. We therefore drop the subscript on ϕ.

Let $W: [0, 1] \times [0, 1] \rightarrow \mathbb{R}$ be a continuous utility function so that $(x_j, \bar{x}_i) \mapsto W(x_j; \bar{x}_i)$. This function is assumed unimodal at $x_j = \bar{x}_i$. In other words, senators have preferences over policy brand names with senator i's ideal brand name being the point $\bar{x}_i$. An example of such a function is $W = -(x_j - \bar{x}_i)^2$. As discussed earlier, we view this (indirect) "utility" function as induced in senators by voter choices over candidates with different policy reputations, but we do not explicitly model how this process works.

Now define the induced utility function in Y as $V = W(\phi(x_j), \phi(\bar{x}_i)) = V(x_j, \bar{x}_i)$. For instance, in terms of the earlier example, $W = -[\phi(x_j) - \phi(\bar{x}_i)]^2$. Let "$a \succ_i b$" indicate "$a$ is preferred to b by i." Then $x_j \succ_i x_k$ iff $V(x_j; \bar{x}_i) > V(x_k; \bar{x}_i)$ iff $W(\phi(x_j); \phi(\bar{x}_i)) > W(\phi(x_k); \phi(\bar{x}_i))$ iff $\phi(x_j) \succ_i \phi(x_k)$ iff $y_j \succ_i y_k$. In other words, preferences can be considered equally well in terms of the original utility function or of the induced one. In addition, since $\phi(x_j) = y_j$ and $\phi(x_k) = y_k$, we may consider senator i's preferences entirely in terms of $V(y_j; \phi(\bar{x}_i))$ and $V(y_k; \phi(\bar{x}_i))$, provided we know $\phi(\cdot)$.[12] This is the approach actually taken in the text.

One could extend this basic framework to develop a theory of measurement error in this setting (e.g., elements of X map with error into ADA score and elements of Y map with error into nominee ideology score). Given the statistical results on errors-in-variables reported below, we do not pursue this point any further.

Estimating a Conversion Function

We now outline a procedure for estimating the conversion function ϕ, given a general functional form. It is easy to show that a wide range of mappings from nominee ideology space to brand name space implies a conversion function ϕ^{-1} of the general form $g(y_i) = \delta_1 h(x_i) - \delta_0$. As discussed in the body of this paper, assume a random utility model of voting and a utility function with the specific functional form presented there. Further assume a squared Euclidean distance as a distance metric. Then one may search for the values of δ_0 and δ_1 that minimize -2*log likelihood ratio in the logistic regression model; this procedure is somewhat analogous to the Hildreth-Lu procedure for autocorrelation. Using this method, we derive the conversion function $y_i = .2 + .5x_i$. (Note that this function is continuous and one-to-one [though not onto] as required above.) However, a striking

[12] The exposition of the random utility model assumed a comparison between the utility of a nominee and a threshold utility, while the discussion here assumes a comparison between two nominees, j and k. But from the intermediate value theorem and given the assumptions above, for any attainable utility level, there is a corresponding x_k. Hence, a politician voting for j if the utility of doing so exceeds a threshold can be treated as if he or she were comparing j with some nominee k who yields the threshold level of utility.

feature of the data set is the robustness of the qualitative results to a wide range of conversion parameters. For example, the simplest conversion ($\delta_0 = 0$, $\delta_1 = 1$) fits the data virtually as well as the best conversion and yields fairly similar estimates for the logit parameters.

APPENDIX B

In this appendix we examine our statistical model for any possibilities of violated assumptions. Specifically, we consider the consequences of measurement error and correlated error structures.

Measurement Error

In deriving our spatial model, we paid careful attention to placing nominee ideology and senators' preferences in the same policy space. Yet this procedure does not guarantee that either nominee ideology or senators' preferences are measured without error. The result is that our ideological distance measure has two potential sources of error. If this error is significant, our parameter estimates could be biased.

While we accept that some degree of measurement error exists in our data, we do not believe the amount of error or the resulting bias to be serious. To test this proposition, we conducted reverse regressions (Klepper and Leamer 1984; Leamer 1984) in which distance and the qualifications-distance interaction become the left-hand-side variables, and vote is placed on the right-hand-side of the equation. In neither instance do we find the systematic effects of measurement error that are found, for example, in employment discrimination analyses (Maddala 1988).

Correlated Error Structures

Because of the pooled cross-sectional time series design of the study, there are three distinct ways in which errors can be correlated with one another: over time, over space, and over both time and space (Stimson 1985). Correlations over time would be most likely to exist if the error of a particular senator at time t correlated with the error of that senator at any time beyond t. Correlations over space would be most likely to occur if the errors of one or more senators on a particular vote correlate with the errors of other senators on that same vote. For instance, our residual analysis suggests that we consistently overpredicted the probability of voting in favor of Potter Stewart (see Table 4). Correlations over time and space would occur if the true slope coefficients vary from one nomination to another.

To control for the possibility of correlated errors in time and space, we employed a logit variant of the least squares dummy variable technique (Sayrs 1989). First, to control for correlations across time, we added a dummy variable for the 234 senators who voted in more than one confirmation. The results suggest that autocorrelated errors are not a problem; the senator dummies taken as a whole were not significant at $p < .20$.

The more likely problem, as noted above, is correlation across space, or heteroscedasticity. We therefore attempted to include a dummy variable for all but one of the nominees, but extremely high multicollinearity between subsets of the nominee dummies and some of the nominee-level variables prevented the equation from being estimated. Since we could not enter the complete set of nominee dummies, we chose to enter those in which the model mispredicted the total number of no votes by more than three, for here it is most likely that we shall have correlated errors across senators. The results are presented in Table 5.

As can be seen, the new model does significantly improve the overall fit. The χ^2 drops from 621 to 517 with only three additional degrees of freedom. The mean absolute error of predicted no votes drops to 2.1 per confirmation. The percentage predicted correctly barely improves though, increasing from 92.1 to 93.5. Most important, there is virtually no change in the substantive inter-

Table 5. Logit Estimates of Dummy Variable Supreme Court Confirmation Model

Variable	MLE	SE	Impact
Constant	6.69	1.26	—
Distance	−16.00	2.20	−.37
Qualifications (lack of)	−3.89	1.10	−.24
Distance × qualifications	−19.22	5.53	−.23
Shirk +	4.29	1.24	.13
Shirk −	−7.68	.96	−.23
Strong president	3.50	.49	.32
Same party	1.00	.27	.12
Presidential popularity	.02	.03	.04
Interest group +	.11	.06	.17
Interest group −	−.23	.04	−.29
Harlan	1.59	.83	—
Stewart	−3.60	.69	—
Bork	−2.88	1.15	—
χ^2/df	517/1,461		
Prop. pred. corr.	.93		
Prop. reduction error	.67		

Note: Impact measures the change in probability of a yes vote given a one standard deviation change in the independent variable for an undecided ($p = .5$) senator.

All substantive coefficients significant at $p < .001$ except popularity (not significant) and interest group + ($p = .05$). Stewart and Bork significant at $p < .01$; Harlan, at $p = .05$.

pretations of the coefficients. With the exception of presidential popularity, significance levels remain extremely high, and the impact of the variables, though changed somewhat, are relatively the same.[13] One significant difference is the greater effect of positive interest group mobilization, but that still pales in comparison to negative interest group mobilization.[14]

If the slope coefficients for the independent variables vary for each nomination, then the model will produce correlated errors in time and space. The usual method of estimating the extent of such problems is to run separate logit analyses for each nomination and then use a χ^2 test to determine whether restricting the coefficients to the same value across nominations (i.e., pooling) results in a significant reduction in overall fit (Sayrs 1989). Unfortunately, the nature of our data makes such a

[13] Presidential popularity remains significant when voice votes are included in the model.

[14] If we add dummy variables for all nominees whose no votes are mispredicted by two votes or more, multicollinearity starts to become an extreme problem. For instance, the correlation between strong president and the remaining variables in the model increases to .9, and its standard error jumps from .6 to 2.5. Nevertheless, the parameter estimates remain basically the same.

test impossible. First, several of the nominations were unanimous, and thus there is no variance to explain within those cross-sections. We could exclude these cross-sections from our pool but to do so leaves unexplained why those nominees received such high levels of support relative to other nominees (presumably because they are ideologically moderate or highly qualified) and simultaneously creates a serious selection bias problem. Second, our model necessarily makes use of nominee-level independent variables such as the qualifications of the nominee. These variables could not be used to predict votes in individual nominations, as the scores only vary across nominations. Because of these problems, we then attempted a simpler test to determine whether the slope for ideological distance varies across nominations by including interaction terms between each of the $N - 1$ nominees and ideological distance. Unfortunately, the logit results did not converge. We were able to test whether the slope for ideological distance differed from the first eight nominations to the next eight by adding a dummy variable for the first set and an interaction between the dummy variable and ideological distance. Neither estimate was even close to being significant. The results though are only a necessary condition for assuming constant slopes, not a sufficient condition.

We are left without an explicit test of whether the nominations should be pooled. We note though that the case for pooling is at least reasonable given the overall fit of the model. It is difficult to imagine that we could predict 93% of the votes correctly and obtain a mean absolute error of 2.1 votes per nomination if the slope coefficients across nominations are randomly distributed.[15]

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[15] Wallace (1972) shows that even in circumstances where coefficients do differ between different cross-sections, pooling can lead to more precise estimates than the individual estimator variances.

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