

Legislator Characteristics, Constituency Characteristics, and Roll Call Voting

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ABSTRACT

Which matters more when legislators make decisions, their own characteristics or those of the people they represent? This paper uses comprehensive data on the personal attributes of both members of Congress and their constituents to compare the relative influence of eight legislator and constituency characteristics—party, race, gender, age, income, education, religion, and occupation—on roll call voting in the 109th and 110th Congresses. Our findings suggest that who governs matters considerably more than the literatures on representation and legislative decision-making have previously acknowledged: the effects of legislators’ own backgrounds are not limited to the handful of issue areas and personal characteristics that previous studies have examined. These findings strongly support recent calls for renewed attention to the “personal roots” of elite decision-making.

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1. INTRODUCTION

How often do American lawmakers base their choices in office on their own preferences and interests and not those of their constituents? To what extent are the characteristics of the people who represent us relevant to the kinds of policies the government enacts? What matters more, who governs or who is governed?

Questions like these have a long history in American political thought and in democratic theory more generally. Scholarship on legislative decision-making currently offers few definitive answers, however. Most work on American legislative politics has focused on factors external to legislators themselves such as constituent pressures, party leaders, interest groups, and institutional rules; research on the ways that lawmakers' own characteristics and preferences influence their choices in office has received relatively scant attention. The studies that have examined the links between legislators' attributes and their decisions, moreover, have typically focused on the relationship between one trait (usually race or gender) and policymakers' choices on a single issue area or a small subset of legislation. We cannot say with any real certainty how much the complete array of characteristics and experiences that make each legislator who he or she is affects the complete array of choices he or she must make in office. Nor can we say how much legislators' attributes matter relative to those of the people they represent; although most studies of policymakers' personal traits control for constituents' characteristics, few have devoted much serious attention to the relative importance of lawmaker and citizen attributes.

In this paper, we measure the relationship between a wide range of legislator and constituency characteristics and roll call voting in the House of Representatives during the 109th and 110th Congresses. Our aim is diagnostic: we hope to shed light on the extent to which lawmakers' choices reflect who they are versus who they represent. As such, we set aside for now questions about the complex causal processes that might explain the statistical asso-

ciations between legislators’ backgrounds, constituents’ backgrounds, and the myriad other factors that shape lawmakers’ choices. In this paper, we study the representational consequences of these processes, that is, we attempt to measure the extent to which policymakers’ decisions track the characteristics of their constituents and of the policymakers themselves.

To do so, we rely on a new dataset containing the most comprehensive quantitative information ever collected on the personal attributes of a sample of members of Congress and the people they represent (Carnes, 2011). Unlike previous studies, which have been limited to one or two legislator characteristics, we focus on eight demographic traits that are believed to influence Americans’ political attitudes: party, race, gender, age, religion, income, education, and occupation. Using two empirical models well suited to measuring the links between a wide range of characteristics and a large number of roll call votes—a hierarchical ideal point model and a correlated coefficients probit model—we provide the most comprehensive estimates to date of the strength of the relationship between who governs, who they govern, and the choices legislators make in office.

2. THE PERSONAL AND POLITICAL ROOTS OF LEGISLATIVE DECISION-MAKING

Prior to the rational choice revolution in the study of legislative politics, scholars commonly attributed paramount importance to policymakers’ personal interests and characteristics. Harold Lasswell’s ((1930) 1986, 124) influential model of officeholder conduct “stressed three terms, [lawmakers’] private motives, their displacement onto public objects, and their rationalization in terms of public interests.” Donald Matthews’s (1954, 2) pioneering congressional scholarship argued that “the social and psychological characteristics of the individual officials acting within a political institutional framework must be considered before an adequate understanding of politics and government is possible.”

In the 1960s and 1970s, the focus of legislative research shifted away from these kinds of legislator-centered theories to explanations of legislative action that emphasized the role of institutional constraints and strategic incentives. Since then, research on institutional rules (Krehbiel, 1998), constituent pressures (Arnold, 1990), interest groups (Hall and Wayman, 1990), party leaders (Cox and McCubbins, 2004), and leaders in other branches of government (Cameron, 2000) has dominated the scholarship on legislative decision-making. Although many scholars have acknowledged the potential for legislators' own backgrounds and characteristics to influence their choices, most research on American legislative politics in the last half century has been more in line with the view "that the office-holder responds primarily to the immediate forces in his political environment rather than to factors that occur in the more distant past of the political actor" and that scholars "should pay much more attention to the immediate circumstances surrounding a politician at the time of a decision rather than some set of factors in his childhood or elsewhere" (Black, 1972, 145).

The literature's strong emphasis on external or strategic considerations is certainly understandable. The prospects of electoral backlash, party discipline, and declining campaign donations are undoubtedly powerful considerations when lawmakers are faced with tough decisions. At least some of the time, however, policymakers base their choices in office on their own views about the issues before them (Reeher, 1996; Burden, 2007). As a result, personal characteristics and experiences that systematically influence legislators' preferences can influence their choices in office.

A small but growing body of scholarship has recently begun to revisit questions about the ways that legislators' backgrounds influence their decisions. Work on the links between the descriptive or numerical representation of social groups and their substantive representation, the extent to which their goals are realized in the policymaking process (Pitkin, 1967), has extensively documented connections between legislators' races (e.g. Canon, 1999; Whitby, 1997) or genders (e.g. Berkman and O'Connor, 1993; Thomas, 1991; Swers, 2002) and their choices

in office. Research on other attributes ranging from social class (Carnes, forthcoming) and military service (Gelpi and Feaver, 2002) to having daughters (Washington, 2008), attending church, having children in school, and even smoking (Burden, 2007) has also shown that these personal characteristics can influence lawmakers' decisions on relevant issues.

The theoretical premise underlying these kinds of studies—that legislators enjoy considerable discretion and therefore often base their choices on their own preferences, which reflect their own experiences and characteristics—suggests that a wide range of personal attributes may be relevant to legislators' choices on a broad range of issues. The empirical research on the links between policymakers' backgrounds and their choices, however, has been somewhat narrow in its scope. For one, most studies in this literature have focused on small subsets of bills on issues expected to provoke differences between legislators with different personal attributes. It is unclear whether the kinds of policies that elicit racial, gender, or other demographic divisions between lawmakers are routine features of the political landscape or are rare occurrences, exceptions to the general principles of legislative conduct. Moreover, most works in this literature have focused on just one or two legislator attributes.¹ It is difficult to assess how much policymakers' characteristics matter collectively on the basis of analyses that focus on just one trait at a time. Although these kinds of studies provide strong evidence that legislators sometimes base their choices in office on personal considerations, they do not tell us much about how important this phenomenon is in the grand scheme of legislative decision-making.

They also leave unanswered questions about the relative importance of legislator characteristics and the characteristics of constituents. Policymakers' responsiveness to the preferences or interests of citizens is at the heart of many positive models of legislative decision-making and many normative defenses of representative government. The finding that legislators' attributes predict their behaviors raises the possibility that policymakers routinely

¹Burden (2007) is a notable exception.

give greater weight to their own preferences or interests than to those of their constituents. Because of the limited scope of existing empirical research on the personal attributes of legislators, we cannot say with any real certainty whether the kinds of people we elect matters more than the kinds of people who elect them. Many studies of legislator characteristics do not even directly compare the effects of the one or two policymaker attributes in question and the effect of the same characteristics measured at the level of the constituency.²

While we can be confident that who governs matters some of the time, we do not know how often it matters or how much it matters relative to who is governed. In the sections that follow, we attempt to shed some light on these questions.

3. DATA AND METHODS

Any effort to compare the relative influence of legislator and constituency characteristics on a wide range of legislator choices confronts two serious methodological hurdles. First, until recently, there was no single source of quantitative data on a large number of personal and constituency characteristics for a large sample of American legislators. Scholars interested in the personal roots of legislative decision-making simply had to collect biographical information from scratch. Gathering data on just one trait often required substantial investments of time and energy. Scholars interested in studying more than one attribute often faced a daunting data collection process.

Second, many standard techniques for analyzing legislative conduct are not ideal for research on the links between legislator and constituency attributes and decision-making on a large and diverse set of issues. For instance, a secondary analysis of roll-call vote-based ideal points that regressed composite roll call scores on a battery of legislator and

²Most often, studies in this literature account for constituency effects by controlling for survey-based measures of citizens' political attitudes and not demographic measures that parallel the legislator attribute in question.

constituency attributes would fail to take into account the uncertainty in the ideal point estimates and could overlook attributes that influence small subsets of bills. Repeatedly running the same regression model on a large set of roll-call votes, on the other hand, would be virtually guaranteed to yield significant effects some of the time regardless of whether the explanatory variables actually have any true relationship to the dependent variable. If we wish to make headway on questions about the links between legislator characteristics, constituency characteristics, and policymakers' choices, the usual sources of data and the standard statistical models simply will not take us very far.

3.1. *Data*

For this analysis, we draw our data from the Congressional Leadership and Social Status (CLASS) dataset (Carnes, 2011), a one-of-a-kind collection of quantitative data on the personal characteristics and constituency attributes of the 784 legislators who served during the 106th–110th Congresses. Our analyses use information about eight demographic measures commonly believed to influence Americans' political attitudes: party, race, gender, age, income, education, religion, and occupation. To maximize variation across both constituents and legislators, we analyze data from the House of Representatives, which has smaller and more diverse constituencies and a more motley group of representatives. To keep the project empirically tractable, we focus on the last two Congresses in the CLASS file, the 109th and 110th.

The CLASS dataset's most important innovation is its legislator data, which combine existing quantitative information about several demographic characteristics with original data on attributes that are not measured adequately in extant sources. Data on members' party identifications are taken from voteview.com. Their races and ethnicities (we use the categories White/Other, Black, and Hispanic in order to match the categories in the available

constituency data), ages, and genders are drawn from their profiles in Congress's official biographical directory. Data on their net worths are taken from Center for Responsive Politics (2009).³ And data on each member's religious denomination (we use the categories Protestant, Catholic, Jewish, Orthodox Christian, Mormon, and Other) is drawn from CQ Press's online Congress Collection Data Cart.

Information about legislators' educational and occupational backgrounds is not very detailed or very complete in many of the sources from which scholars of legislative politics typically obtain biographical data on members of Congress. As such, the CLASS dataset includes education and occupation measures that were constructed by synthesizing biographical profiles from a half dozen congressional almanacs. Education data were drawn from the online *Congressional Biographical Directory* and the print version of Congressional Quarterly's *Politics in America* almanac. Occupation data were drawn from the *Congressional Biographical Directory*, the online version of the *Politics in America* almanac, *Lexis-Nexis Congressional*, and the National Journal's online *Almanac of American Politics*. For the purposes of this analysis, we coded each legislator in the sample according to a five-point education scale (high school diploma, some college, college degree, some graduate or professional school, graduate or professional degree) and computed the proportion of each legislator's pre-congressional career spent in each of seven occupation categories (farm owner or manager, business owner or executive, other business employee, lawyer or other private-sector professional, service-based professional, military/law enforcement personnel, and manual or service industry worker).

The CLASS dataset also includes comparable data on the characteristics of each Representative's congressional district. District partisanship was estimated using the Republican share of the two-party vote in the last presidential election.⁴ The district's racial and ethnic

³Since all members of Congress earn high incomes by virtue of their congressional salaries alone, we focus here on net worth, which reflects lifetime earnings and on which members tend to vary a great deal.

⁴Results are comparable using survey-based measures of constituency partisanship.

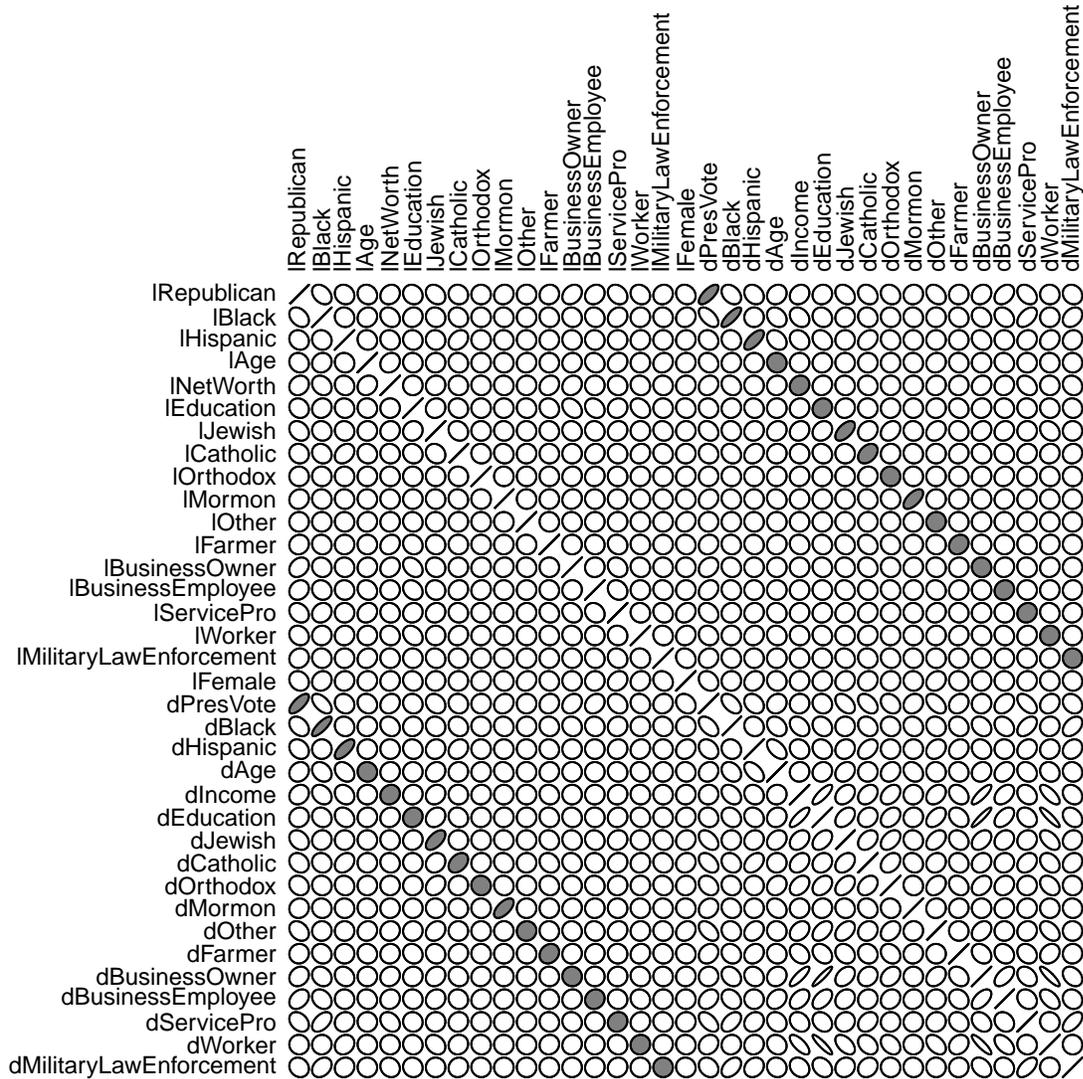
composition, median age, gender composition, and median income were computed using the 2000 Decennial Census. The percent of constituents in each religious category above was estimated using the Annenberg data. And the occupational and educational compositions of each district were drawn from the Census.

We have attempted to code each variable as similarly as possible for legislators and for constituents. One variable did not vary at the congressional district level (gender) and was therefore excluded from our analyses; otherwise we have essentially the same measures for both House members and the citizens they represent.

In order to create these measures, we sometimes had to discard nuances in the data. If an attribute was measured using a more fine-grained coding scheme in the data on legislators than in the data on constituents (or vice versa), we simplified the more complex measure so that it matched the less complex one. This sometimes resulted in imperfect categories. With race/ethnicity, for instance, we have created a three-category coding scheme that groups Blacks together, Hispanics together, and all non-Black, non-Hispanic people in a third group. For occupations, we have clustered lawyers (who tend to be more moderate) with a large assortment of profit-oriented professionals (who tend to be more conservative; Carnes, forthcoming) because it was impossible to distinguish the two groups in the Census data available to us. For the purposes of answering questions about the relative importance of who governs and who is governed, these simplifications merely level the empirical playing field by ensuring that each attribute is measured using the same categories at both the legislator and constituency levels. It should be noted at the outset, however, that our methodology is better suited to measuring the relative importance of legislator or constituency attributes collectively, not the relative importance of individual legislator or constituent characteristics.

Although we have chosen to examine a large number of parallel legislator and constituency attributes, most of the variables we analyze here are not correlated strongly enough to create serious problems for our statistical analyses. Figure 3.1 plots pairwise correlation coefficients

Figure 1: Pearson Correlation Coefficients between All Pairs of Legislator and Constituent Attribute Variables for the 109th Congress, Depicted as Ellipses (with Narrower Ellipses Representing more Highly Correlated Variables)



Note: Legislator attributes are prefixed *l*, district attributes are prefixed *d*. The ellipses for parallel legislator and district attributes are shaded gray.

for all 35 legislator and constituency variables in our analysis for the 109th Congress⁵ using ellipses to represent each correlation visually (with narrower ellipses representing more highly correlated variables). The only notably large correlations are those between income, education, and occupation at the district level and between the partisan or racial composition of a district and the party or race of its representative in the house. Some variables are strikingly uncorrelated: the religious composition of a district is only weakly associated with its House member’s religion, and various measures of class at the district level—occupation, income, and education—are more or less unrelated to comparable measures of legislators’ class backgrounds.

The policy choices we study here are the 470 final passage roll call votes in the House of Representatives during the 109th Congress and the 683 final passage votes in the 110th.⁶ Roll call voting is commonly thought to be the stage in the legislative process at which policymakers have the least discretion (Burden, 2007; Hall, 1996), so studying roll calls provides a hard test of the notion that legislators’ personal characteristics influence their choices in office. Roll call votes also have practical advantages. They are publicly available in electronic format. They occur frequently. As a result, it is possible to fit data on roll call voting to statistical models designed to measure the relative importance of legislator and constituency characteristics.

⁵The corresponding plot for the 110th Congress is very similar.

⁶We counted as final passage votes those bills with the labels On Agreeing to the Conference Report; On consideration of the bill; On Motion to Suspend the Rules and Agree; On Motion to Suspend the Rules and Agree to the Conference Report; On motion to suspend the rules and agree, as amended; On Motion to Suspend the Rules and Pass; On Motion to Suspend the Rules and Pass, as Amended; On Passage; Passage, Objections of the President Not Withstanding; and Suspend the Rules and Agree to the Conference Report.

3.2. Statistical Models

We use two modeling techniques to measure the relationship between legislator attributes, constituency attributes, and roll call voting in the House: a hierarchical ideal point model and a correlated coefficient probit model. The ideal point model allows us to measure the contribution of both legislator attributes and citizens attributes to the general ideological orientation of each legislator’s roll call votes. The drawback to this approach is that it might miss attributes that matter a great deal on a small number of bills. To account for this possibility, we also estimate a correlated coefficient probit model, a novel empirical approach that allows us to identify bills on which a given attribute matters more than it normally does in the larger set of bills in the sample.

Both models denote a given member’s vote on a given bill as Y_{ij} , the element of an $N \times M$ matrix of roll call votes for each legislator $i \in 1, 2, \dots, N$ on bill $j \in 1, 2, \dots, M$. And both models denote a member’s own attributes and constituency attributes as X_{ik} , the element of an $N \times K$ matrix of legislator and constituency covariates $k \in 1, 2, \dots, K$ for legislator i . To facilitate comparisons of the relative importance of different attributes, we standardize the matrix of covariates, \mathbf{X} , such that each covariate has a mean of zero and a standard deviation of one.

Hierarchical Ideal Point Model: The hierarchical ideal point model of voting begins with a standard ideal point model (Jackman, 2001). Then, following the general approach of hierarchical models, the ideal point is itself modeled as a linear function of the covariates plus an error term:

$$p(Y_{ij} = 1) = \Phi(\alpha_j + \beta_j \theta_i) \tag{1}$$

$$\theta_i \sim \mathcal{N}(\gamma \mathbf{X}_i, \sigma) \tag{2}$$

$$\alpha_j \sim \mathcal{N}(0, 10^2) \tag{3}$$

$$\beta_j \sim \mathcal{N}(0, 10^2) \tag{4}$$

$$\gamma_k \sim \mathcal{N}(0, 10^2) \tag{5}$$

The estimated elements of $\boldsymbol{\gamma}$ indicate the degree to which a given variable in \mathbf{X} predicts a legislator’s ideal point.

In a large legislature that votes frequently, the ideal points this model recovers will be essentially the same as those that a non-hierarchical ideal point estimator would produce. As a result, this model yields very similar estimates to a more common two-stage procedure in which we generate ideal points without covariates and then regress them on our independent variables, \mathbf{X} . The major advantage of the hierarchical approach in this application is that it generates estimates of the covariates’ association with ideal points, $\boldsymbol{\gamma}$, that appropriately incorporate the uncertainty inherent in ideal point estimation; the standard two-stage approach would ignore that uncertainty and treat ideal points as if they were measured without error.

Correlated Coefficient Probit Model: We also estimate a correlated coefficient probit model, which begins with a basic probit model that relates legislators’ choices on each roll call vote to the set of legislator and constituency attributes we have measured, \mathbf{X} . The model diverges from a standard probit, however, in that the coefficients for each attribute are not assumed to be independent across bills. Instead, the coefficient for variable l on bill j , β_{lj} , is modeled as a function of a t distribution, a modeling choice that allows for the possibility that the different characteristics have complex relationships across bills. The model can be written formally as:

$$p(Y_{ij} = 1) = \Phi(\alpha_j + \beta_j \mathbf{X}_i) \tag{6}$$

$$\beta_{lj} \sim t(\xi_l \gamma_j, \sigma_l^2, \nu_l) \tag{7}$$

$$\alpha_j \sim \mathcal{N}(0, 10^2) \tag{8}$$

$$\gamma_j \sim \mathcal{N}(0, 10^2) \tag{9}$$

$$\xi_l \sim \mathcal{N}(0, 1) \tag{10}$$

$$\sigma_l \sim \mathcal{U}(0, 10) \tag{11}$$

$$\nu_l \sim \mathcal{U}(2, 100) \tag{12}$$

Modeling the covariance structure of β solves two problems that arise if one simply runs separate probit models on each bill. First, it imposes some skepticism about large values of β . The U.S. House records over one thousand roll call votes per Congress; by chance alone there should be some bills on which particular covariates seem especially important. Our model essentially uses a shrinkage estimator to build in some protection against over-fitting. Second, the covariance structure helps us deal with the many bills in which the roll call vote alone yields no information about the effect of a variable or, at the other extreme, would allow complete separation on that variable. If all Democrats vote for a bill, we get no information about the coefficient for being a black legislator because all of the black legislators are Democrats in most recent sessions of Congress; if all black legislators vote for a bill but not all Democrats do, a simple probit model would not be identified because the underlying likelihood would always be increasing in the coefficient on being a black legislator. By modeling the covariance between coefficients across models, we are able to make reasonable inferences about the likely effect of being a black legislator in these cases by drawing on the broader population of legislation. We can then properly account for these expectations when assessing when particular attributes matter.

Unlike the standard probit regression, this model allows for the possibility that the coefficients on different attributes may have a general correlation that is activated to varying

degrees on different bills. For example, the coefficient for being a female legislator and for being a Democratic legislator might be correlated across bills such that when Democrats are more likely than Republicans to support a bill, female legislators will be more likely than male legislators to support it also, conditional on party. The model treats the covariance among the attribute-specific effects as a single ideological dimension.⁷ The parameter ξ_l is a latent variable that captures the relationship between each attribute and the legislator’s general ideological orientation. The parameter γ_j captures the extent to which voting on a given bill is associated with this dimension.

The model also allows for the possibility that the general influence of different attributes varies in magnitude across bills. For example, while we expect the effects of legislator party to be quite large, the effects of other factors might be generally quite small. The population distribution of these effects depends on an attribute-specific variance σ_l^2 and degree of freedom parameter ν_l . We use the t distribution because we do not believe that the effects of attributes are normally distributed across bills. We expect many of the attributes in our data to matter very little on most bills but to also matter a great deal on a few bills. The t distribution with a small number of degrees of freedom allows for the possibility of such a distribution (unlike, for instance, the normal distribution).⁸

The unique contribution of this model for our purposes is its ability to single out specific bills on which particular attributes matter more than usual. Using this model, we estimate the “residual” bill-specific effects of covariates, the difference between the estimated β_{lj} for a given trait on a given bill and its expected value based on other roll call votes, $\xi_l\gamma_j$. This measure allows us to identify bills on which a given legislator or constituency characteristic

⁷A higher-dimensional model could be used instead, but given the strongly unidimensional nature of recent U.S. Congresses, we do not expect there to be important higher dimensions.

⁸We considered using a weakly informative, scaled inverse-Wishart prior for the covariance matrix for the β_j , which implicitly places uniform priors from -1 to 1 on the correlation coefficients between the β_{lj} on each pair of dimensions (Gelman and Hill, 2006, 286). However, using a completely unstructured prior for the covariance of the β_{lj} generates a very weakly identified model.

matters more than it usually matters across the entire range of legislation in the sample, in essence allowing us to identify the subset of bills on which a given legislator or constituency attribute is unusually important. Together, this correlated coefficients probit model and the hierarchical ideal point model illustrate both how much legislator and constituency characteristics influence legislators' general ideological orientations and the number of bills for which some legislator and/or constituency characteristics are uniquely important.

4. FINDINGS

4.1. *Decomposing Legislator Ideal Points*

First, to what extent do legislator and constituency characteristics predict the general ideological direction of lawmakers' roll call votes?

Table 1 presents the estimated γ coefficients from the hierarchical ideal point model for the 109th and 110th Houses. The first pair of models are estimated with only the battery of legislator characteristics, the second pair are estimated with just constituency characteristics, and the third pair include both. The covariate matrix \mathbf{X} is standardized and the ideal point dimension is normalized to mean zero and variance one, so the tabulated γ coefficients are comparable across variables and specifications.⁹

In general, the coefficients for legislator attributes were sensible. Across all of the models in Table 1, the coefficient for Republican members has the opposite sign as the coefficient for Black, Hispanic, female, and working-class members, just as in public opinion data. The same is not true for constituency variables, however. The coefficients for the variables

⁹Since some of the variables are collinear, specific attributes do not always appear to be statistically significant even when they are collectively significant. Our goal in this section is to assess the aggregate predictive power of our collection of legislator and constituency attributes, and we have not explored non-linear specifications for the continuous variables. We therefore wish to stress that readers should not place too much weight on the relative magnitudes of the individual effects reported here.

capturing the percent of district residents who are Black or who are workers have the same sign as the coefficient for the percent who are Republicans. It is easy to imagine explanations for these findings: in the South, for instance, the most conservative white legislators have historically tended to come from areas with substantial (but not majority) black populations. In terms of understanding representation, however, it is striking that the presence of greater numbers of historically liberal citizens like blacks or workers is actually associated with more conservative voting on the part of House members.

Overall, legislator characteristics appear to be slightly better predictors of roll call voting than constituency characteristics in these models. The bottom four rows of Table 1 report statistics that characterize the fit of the models, one that penalizes extra parameters and one that does not. We report both statistics characterizing the magnitude of the residuals directly and in terms of a “variance explained” statistic like an R^2 . Since we normalize the distribution of posterior mean ideal points to $\sigma = 1$, we simply subtract the square of the residual σ statistic from 1 to produce the R^2 statistic on the familiar 0 to 1 scale (higher values signify better fitting models). For most of the following discussion, we describe the R^2 statistics. The non-penalized statistic, $\sigma(\bar{\gamma})$, is the residual error of the mean posterior estimates of the γ coefficients in predicting the mean posterior estimates of the ideal points θ . The penalized statistic, $\bar{\sigma}(\gamma)$, is the the mean posterior of the residual error (one minus the residual error squared) of the gamma coefficients in predicting the ideal points θ . The non-penalized statistic characterizes the error of the best estimates in predicting ideal points, the penalized statistic characterizes the average error in predicting ideal points given the posterior uncertainty about the coefficient magnitudes.

The non-penalized goodness-of-fit estimates for the models using only legislator attributes (column 1) are 0.82 and 0.87 for the 109th and 110th Congress, respectively. The corresponding estimates for the models using only constituency attributes (column 2)—0.73 and 0.68—indicate that those variables have less predictive power. (Penalized goodness-of-fit

measures were comparable but slightly lower.) Because the data are not coded in exactly the same fashion and we have not explored non-linear specifications, we should not make too much of these differences. Still, the findings presented here point to the conclusion that legislators' attributes are no worse predictors of roll call voting than constituency characteristics. Of course, the combination of legislator and constituency characteristics does the best job of all: the non-penalized estimates in column 3 are 0.88 and 0.91. We can learn a great deal about how legislators vote by simply knowing who they represent, we may be able to learn even more by knowing who they are themselves, but we learn the most by knowing both.

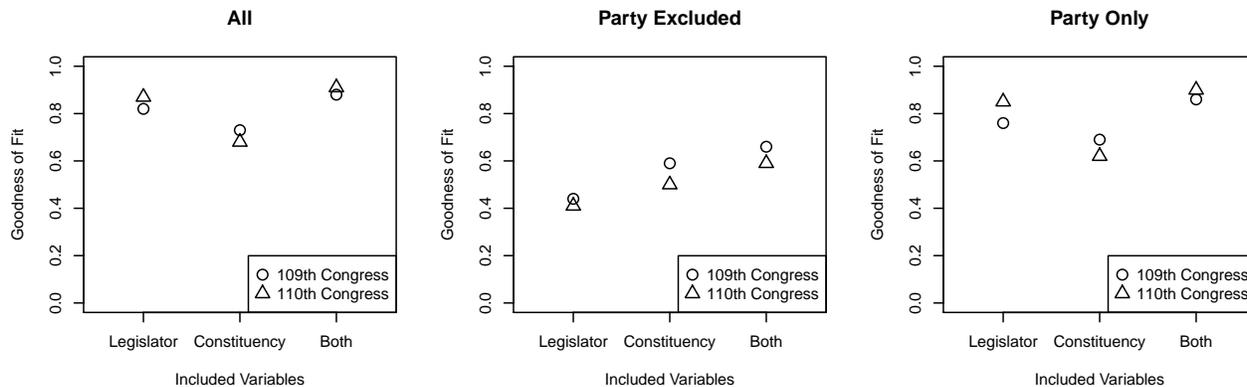
Given the prominent role of legislator and constituency party in these models—their coefficients were several orders of magnitude greater than the coefficients for other legislator or constituency characteristics—we separately re-ran the models in Table 1 without the party variables and with only the party variables. Our conclusions regarding the relative importance of legislator and constituency attributes are roughly the same: Figure 2 plots adjusted and unadjusted goodness-of-fit estimates for the six models in Table 1 and for the corresponding models without party and with only party. (Tables 3 and 4 in the appendix report the complete model results.)

The models estimated without party variables leave much larger residuals. Those run with legislator attributes (other than party) had goodness-of-fit estimates of 0.44 and 0.41 for the 109th and 110th Congresses, somewhat smaller than the comparable estimates for constituency attributes alone, 0.59 and 0.50. If we ignore the powerful legislator party variable, legislator attributes predict slightly less variation in roll call voting than constituency attributes, although their predictive powers are still comparable. The models estimated with only party variables give the opposite result: legislator party alone yields goodness-of-fit estimates of 0.76 and 0.85, while the presidential vote share variable alone has fit estimates of 0.69 and 0.62. In both cases, the combination of personal characteristics and constituency

Table 1: Hierarchical Ideal Point Models Relating Legislator and Constituency Characteristics and Roll Call Voting in the 109th and 110th Houses

Congress	109	110	109	110	109	110
lRepublican	0.74 (0.11)	0.82 (0.22)			0.55 (0.09)	0.67 (0.20)
lBlack	-0.10 (0.07)	-0.09 (0.05)			-0.06 (0.09)	-0.01 (0.08)
lHispanic	-0.03 (0.06)	-0.03 (0.05)			-0.06 (0.07)	-0.08 (0.07)
lAge	-0.12 (0.06)	-0.02 (0.05)			-0.09 (0.05)	0.00 (0.05)
lNetWorth	0.04 (0.06)	0.02 (0.05)			0.03 (0.06)	0.00 (0.05)
lEducation	-0.03 (0.07)	0.01 (0.05)			-0.05 (0.06)	-0.01 (0.05)
lJewish	-0.06 (0.06)	-0.06 (0.05)			0.00 (0.07)	-0.04 (0.06)
lCatholic	-0.06 (0.06)	-0.03 (0.05)			0.00 (0.06)	0.00 (0.05)
lOrthodox	0.03 (0.06)	0.00 (0.05)			0.02 (0.05)	0.00 (0.05)
lMormon	0.02 (0.06)	0.04 (0.05)			0.01 (0.06)	0.04 (0.06)
lOther	0.01 (0.06)	0.02 (0.04)			0.00 (0.05)	0.00 (0.04)
lFarmer	0.05 (0.06)	0.01 (0.05)			0.03 (0.05)	0.00 (0.05)
lBusinessOwner	0.05 (0.07)	0.07 (0.05)			0.02 (0.06)	0.04 (0.05)
lBusinessEmployee	0.04 (0.06)	0.06 (0.05)			-0.01 (0.05)	0.02 (0.05)
lServicePro	-0.03 (0.06)	0.01 (0.05)			-0.03 (0.05)	0.00 (0.05)
lWorker	-0.01 (0.06)	-0.03 (0.05)			-0.02 (0.05)	-0.03 (0.05)
lMilitaryLawEnf.	0.04 (0.06)	0.03 (0.05)			0.03 (0.05)	0.02 (0.05)
lFemale	-0.07 (0.06)	-0.07 (0.05)			-0.02 (0.05)	-0.04 (0.05)
dPresVote			0.90 (0.15)	0.99 (0.22)	0.35 (0.14)	0.30 (0.14)
dBlack			0.14 (0.13)	0.21 (0.11)	0.09 (0.12)	0.02 (0.10)
dHispanic			0.00 (0.11)	0.07 (0.10)	0.04 (0.10)	0.06 (0.10)
dAge			0.04 (0.10)	0.01 (0.09)	-0.01 (0.08)	-0.04 (0.07)
dIncome			-0.09 (0.13)	-0.05 (0.13)	-0.06 (0.12)	-0.12 (0.12)
dEducation			0.12 (0.29)	0.08 (0.22)	0.00 (0.27)	-0.04 (0.22)
dJewish			-0.06 (0.09)	-0.03 (0.07)	-0.03 (0.08)	0.01 (0.06)
dCatholic			0.09 (0.11)	0.03 (0.08)	0.01 (0.09)	-0.01 (0.08)
dOrthodox			-0.05 (0.07)	-0.02 (0.06)	-0.03 (0.06)	-0.02 (0.05)
dMormon			-0.04 (0.07)	-0.04 (0.06)	-0.02 (0.06)	-0.03 (0.06)
dOther			0.00 (0.10)	0.14 (0.08)	-0.07 (0.08)	0.05 (0.07)
dFarmer			0.01 (0.08)	-0.03 (0.07)	0.00 (0.07)	-0.03 (0.06)
dBusinessOwner			0.32 (0.23)	0.36 (0.23)	0.14 (0.23)	0.15 (0.19)
dBusinessEmployee			0.08 (0.09)	0.06 (0.07)	0.05 (0.07)	0.04 (0.07)
dServicePro			0.13 (0.11)	0.13 (0.09)	0.04 (0.11)	-0.01 (0.07)
dWorker			0.28 (0.29)	0.27 (0.25)	0.10 (0.28)	0.04 (0.23)
dMilitaryLawEnf.			0.04 (0.10)	0.03 (0.09)	0.01 (0.08)	0.01 (0.07)
$R^2(\bar{\gamma})$	0.82	0.87	0.73	0.68	0.88	0.91
$\bar{R}^2(\gamma)$	0.74	0.81	0.65	0.60	0.80	0.82
$\sigma(\bar{\gamma})$	0.43	0.36	0.52	0.57	0.34	0.30
$\bar{\sigma}(\gamma)$	0.51	0.44	0.59	0.63	0.45	0.42

Figure 2: Unpenalized Goodness-of-fit Measures for Models Estimated with All Attributes, with All Attributes besides Party, and with Party Only



characteristics is substantially better at predicting roll call voting than either one alone.

The most striking of feature of these findings is that legislators’ own attributes are roughly as good as predictors of their choices in office as their constituents’ characteristics. These analyses suggest that both are important—the best models are those that use legislator and citizens traits together—but legislator attributes contribute substantially to our ability to predict legislators’ roll call vote choices. In the 110th Congress, for instance, the model estimated with only constituency characteristics (in the second pair of models in Table 1) had an unpenalized goodness-of-fit measure of 0.68, while the model estimated with both legislator and constituency characteristics had a measure of 0.91. Far from being an obscure feature of elite decision-making, legislator characteristics appear to be excellent predictors of lawmakers’ ideological orientations on a wide range of issues.

4.2. *Identifying Bills on Which Particular Characteristics Matter Most*

But what about issues that do not map neatly onto the main ideological dimensions of legislative disagreement? How often do legislator and constituency characteristics predict departures from expectations on individual roll call votes? For each attribute and each bill, we used our correlated coefficients probit model to compute the residual effect $\beta_{lj} - \xi_l \gamma_j$, the difference between the coefficient for the attribute in question on the bill in question and what we would expect based on the larger relationships between the coefficients across all of the bills in our sample. When this quantity is large in magnitude, the given attribute was unusually important on that bill. We focus here on bills for which there was a greater than 95% posterior probability on one side of zero, or on the other. These are the bills in which we can be most confident that a particular attribute had a non-zero predictive effect on voting behavior.

Table 2 below lists the numbers of bills on which each of the legislator and constituency attributes in question were found to be exceptionally important by this measure.¹⁰ We ignore for now the legislator and constituency party variables, which (as in the preceding analyses) wielded substantial influence in this model and focus here on the other legislator and constituency traits in question.

The single attribute that had an unusually large predictive effect across the most bills was the income level of the congressional district. Legislators from high-income districts (all else equal) strongly opposed a series of bills like the American-Made Energy and Good Jobs Act, the Deep Ocean Energy Resources Act, the Bureau of Alcohol, Tobacco, Firearms and Explosives Modernization and Reform Act, the Private Property Rights Implementation Act of 2006, and The Threatened and Endangered Species Recovery Act. In contrast to

¹⁰Table 5 in the Appendix lists the titles of the bills, the party breakdown of the vote, the residual effect $\beta_{lj} - \xi_l \gamma_j$, its posterior standard deviation (standard error), and the posterior probability of an effect greater than zero.

Table 2: The Number of Bills on Which Legislator and Constituency Characteristics Were Exceptionally Influential in the 109th and 110th Houses

	District	Legislator
Age	4	7
Race	29	17
Black	10	4
Hispanic	19	13
Class	31	4
Income	26	0
Farmer	0	4
Business Employee	4	0
Service-based Professional	1	0
Religion	47	7
Catholic	5	5
Jewish	13	2
Mormon	2	0
Other	27	0
Education	1	0
Total	112	35

the income of their districts, legislators' own net worths did not appear to be unusually important to their vote choices on any of the bills in our sample.

The second most generally powerful predictive variable was the fraction of Hispanics in a district. Perhaps unsurprisingly, several of the votes on which this constituency attribute was most important were related to immigration issues, with legislators from heavily hispanic districts voting against the Secure Fence Act of 2006, the Immigration Law Enforcement Act of 2006, the Border Protection, Antiterrorism and Illegal Immigration Act, and the REAL ID Act. The effect of the legislator herself being Hispanic was smaller, although Hispanic legislators stood out on 13 bills, including a proposal "To prohibit the Secretary of Transportation from granting authority to a motor carrier domiciled in Mexico to operate beyond United States municipalities and commercial zones on the United States-Mexico border unless expressly authorized by Congress".

Many other legislator attributes had important effects as well. The five roll calls on which Catholic legislators voted differently than other legislators were two votes on the "Stem Cell Research Enhancement Act", the "Human Cloning Prohibition Act", the "United States-Peru Trade Promotion Agreement", and the "Unborn Child Pain Awareness Act of 2006." These are all issues on which the Catholic Church publicly supported the position that the Catholic legislators adopted. Legislators who had personal experience working as farmers also opposed a proposal to "To restore the prohibition on the commercial sale and slaughter of wild free-roaming horses and burros" while supporting acts that provided additional resources to farmers and victims of natural disasters and opposing a late-2008 stimulus measure that involved extension of unemployment benefits that seldom apply to the agricultural sector.

Overall, the results of this analysis suggested that legislator attributes exerted an exceptional pull on lawmakers' choices about one third as often as constituency attributes. As Table 2 illustrates, by this measure legislator attributes other than party "mattered" on 35

bills, while constituency attributes mattered on 112 bills. As in the hierarchical ideal point model, who governs appeared to be similar in importance to who is governed in these analyses.

Whereas most of the literature on legislators' personal traits has focused on race and gender, this analysis finds evidence that other traits are sometimes important determinants of members' choices. Policymakers' ages, occupations, and religious denominations were outstanding determinants of their choices on as many bills as race and gender. The effects of legislators' backgrounds are not limited to the personal characteristics that have been the central focus of past work on the topic.

5. DISCUSSION

Research on the links between legislators' personal characteristics and their choices in office has been remarkably under-developed relative to other topics in the study of legislative decision-making and representation in the United States. Our aim in this paper was to study the predictive power of a large number of legislator characteristics and to compare their relationships to legislative decision-making to the associations between constituency characteristics and legislators' choices. Our findings suggest that lawmakers' demographic characteristics are about as good at predicting their roll call votes as their constituents' characteristics. This finding cannot simply be attributed to constituents picking legislators who resemble them; most legislator attributes are only weakly correlated with constituent attributes. Adding legislator traits to ideal point models that already include constituency characteristics substantially improves their fit, and a correlated coefficient probit model that included both legislator and constituency traits found many bills on which legislator attributes were uniquely important.

Whereas most previous studies have considered just one legislator attribute and a small subset of legislation, the results presented here suggest that a wide range of legislator char-

acteristics are associated with elite decision-making choices on a wide range of issues. If anything, recent calls for renewed attention to the “personal roots” of legislators’ choices have understated the potential importance of lawmakers’ own backgrounds and preferences. Far from being rare events confined to small numbers of issues, situations in which lawmakers’ own backgrounds are associated with their choices appear to be a common feature of elite decision-making in the United States.

Of course, this essay has avoided questions about causality and about the processes that bring about associations between who governs and the kinds of choices they make. Answering these kinds of questions may require scholars to return to methodologies that compare legislators on just one trait or one subset of bills at a time. In applications in which a large number of traits and decisions must be studied, however, the original data and novel statistical methodologies that we employ here may prove useful. Our findings suggest that scholars have only scratched the surface of the “personal roots” of elite decision-making.

6. APPENDIX

The pages that follow present complete results from hierarchical models estimates without legislator and constituency party (Tables 3) and those estimated only with legislator and constituency party (Table 4). They also present the complete list of roll call votes on which particular legislator or district characteristics were especially important according to the correlated coefficients probit model (Table 5).

Table 3: Hierarchical Ideal Point Models Estimated without Party

Congress	109	110	109	110	109	110
lBlack	-0.33 (0.08)	-0.34 (0.08)			-0.07 (0.12)	-0.10 (0.11)
lHispanic	-0.11 (0.08)	-0.11 (0.07)			-0.07 (0.10)	-0.10 (0.09)
lAge	-0.18 (0.08)	-0.07 (0.07)			-0.13 (0.07)	-0.03 (0.07)
lNetWorth	0.09 (0.08)	0.03 (0.07)			0.07 (0.07)	0.00 (0.07)
lEducation	-0.08 (0.09)	-0.08 (0.08)			-0.09 (0.08)	-0.09 (0.08)
lJewish	-0.25 (0.08)	-0.27 (0.07)			-0.09 (0.08)	-0.18 (0.08)
lCatholic	-0.16 (0.08)	-0.20 (0.07)			-0.06 (0.08)	-0.08 (0.07)
lOrthodox	0.00 (0.08)	-0.06 (0.06)			-0.02 (0.07)	-0.07 (0.07)
lMormon	0.05 (0.07)	0.08 (0.06)			0.04 (0.08)	0.08 (0.08)
lOther	0.03 (0.08)	0.03 (0.07)			0.03 (0.07)	-0.01 (0.07)
lFarmer	0.05 (0.08)	-0.01 (0.07)			-0.01 (0.07)	-0.05 (0.07)
lBusinessOwner	0.16 (0.08)	0.16 (0.07)			0.09 (0.07)	0.08 (0.07)
lBusinessEmployee	0.11 (0.08)	0.11 (0.07)			0.03 (0.07)	0.04 (0.07)
lServicePro	-0.11 (0.08)	-0.09 (0.07)			-0.11 (0.07)	-0.09 (0.07)
lWorker	-0.10 (0.08)	-0.13 (0.07)			-0.08 (0.07)	-0.13 (0.07)
lMilitaryLawEnf.	0.07 (0.08)	0.04 (0.07)			0.03 (0.07)	-0.02 (0.07)
lFemale	-0.12 (0.08)	-0.14 (0.07)			-0.04 (0.07)	-0.06 (0.07)
dBlack			-0.38 (0.11)	-0.41 (0.10)	-0.28 (0.14)	-0.31 (0.13)
dHispanic			-0.15 (0.12)	-0.13 (0.12)	-0.07 (0.14)	-0.04 (0.14)
dAge			-0.09 (0.11)	-0.14 (0.11)	-0.06 (0.11)	-0.12 (0.11)
dIncome			0.07 (0.16)	0.06 (0.18)	0.06 (0.15)	-0.01 (0.18)
dEducation			-0.34 (0.38)	-0.35 (0.37)	-0.22 (0.33)	-0.28 (0.35)
dJewish			-0.18 (0.09)	-0.14 (0.09)	-0.12 (0.11)	-0.05 (0.10)
dCatholic			-0.27 (0.11)	-0.37 (0.10)	-0.20 (0.11)	-0.26 (0.10)
dOrthodox			-0.09 (0.08)	-0.07 (0.08)	-0.10 (0.08)	-0.07 (0.08)
dMormon			-0.01 (0.08)	-0.02 (0.07)	-0.04 (0.09)	-0.07 (0.09)
dOther			-0.30 (0.10)	-0.20 (0.10)	-0.28 (0.10)	-0.16 (0.10)
dFarmer			0.02 (0.10)	0.02 (0.09)	0.01 (0.09)	0.01 (0.09)
dBusinessOwner			0.34 (0.31)	0.31 (0.31)	0.27 (0.27)	0.33 (0.29)
dBusinessEmployee			0.27 (0.09)	0.26 (0.09)	0.22 (0.09)	0.23 (0.09)
dServicePro			-0.09 (0.14)	-0.05 (0.10)	-0.05 (0.12)	-0.06 (0.10)
dWorker			-0.03 (0.41)	-0.10 (0.38)	0.01 (0.30)	-0.02 (0.36)
dMilitaryLawEnf.			0.21 (0.11)	0.21 (0.11)	0.15 (0.10)	0.15 (0.11)
$R^2(\bar{\gamma})$	0.44	0.41	0.59	0.50	0.66	0.59
$\bar{R}^2(\gamma)$	0.33	0.29	0.50	0.39	0.71	0.42
$\sigma(\bar{\gamma})$	0.75	0.77	0.64	0.71	0.58	0.64
$\bar{\sigma}(\gamma)$	0.82	0.84	0.71	0.78	0.70	0.76

Table 4: Hierarchical Ideal Point Models Estimated without Party

Congress	109	110	109	110	109	110
IRepublican	0.87 (0.07)	0.92 (0.28)			0.57 (0.08)	0.72 (0.23)
dPresVote			0.83 (0.08)	0.79 (0.18)	0.43 (0.08)	0.30 (0.10)
$R^2(\bar{\gamma})$	0.76	0.85	0.69	0.62	0.86	0.90
$\bar{R}^2(\gamma)$	0.74	0.82	0.66	0.59	0.83	0.87
$\sigma(\bar{\gamma})$	0.49	0.39	0.56	0.61	0.38	0.32
$\bar{\sigma}(\gamma)$	0.51	0.43	0.58	0.64	0.41	0.36

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.		Rep..		Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$
110	608	H R 6604	Commodity Markets Transparency and Accountability Act	211	14	68	118	dAge	0.12	0.07	0.97
110	511	H R 6515	Drill Responsibly in Leased Lands Act of 2008	216	10	26	161	dAge	0.13	0.08	0.97
110	540	H R 6604	Commodity Markets Transparency and Accountability Act	212	16	61	133	dAge	0.14	0.07	0.99
110	1074	H R 3355	Homeowners' Defense Act of 2007	216	3	39	150	dAge	0.18	0.08	0.99
110	633	H R 980	Public Safety Employer-Employee Cooperation Act	213	3	97	93	dBlack	-0.22	0.13	0.02
110	425	H R 5710	Eastern New Mexico Rural Water System Authorization Act	227	0	70	123	dBlack	-0.21	0.13	0.04
110	1009	H R 3963	Children's Health Insurance Program Reauthorization Act	219	1	43	140	dBlack	-0.19	0.12	0.04
110	1057	H R 3685	Employment Non-Discrimination Act (ENDA)	197	25	35	157	dBlack	-0.16	0.10	0.04
109	241	H R 5252	"Communications, Opportunity, Promotion, and Enhancement Act of 2006"	106	91	214	8	dBlack	0.15	0.10	0.96
109	378	H J RES 88	Proposing an amendment to the Constitution of the United States relating to marriage	34	158	201	27	dBlack	0.15	0.10	0.95
110	373	H R 1585	National Defense Authorization Act	199	25	193	2	dBlack	0.16	0.10	0.96
110	1074	H R 3355	Homeowners' Defense Act of 2007	216	3	39	150	dBlack	0.20	0.12	0.97
110	437	H R 6304	FISA Amendments Act of 2008	105	125	186	1	dBlack	0.20	0.11	0.98
110	511	H R 6515	Drill Responsibly in Leased Lands Act of 2008	216	10	26	161	dBlack	0.22	0.13	0.96
109	445	H R 6	Energy Policy Act of 2005	74	124	199	31	dBusEmpl	-0.16	0.07	0.01
109	69	S 2120	Milk Regulatory Equity Act	122	70	162	56	dBusEmpl	-0.13	0.06	0.02
109	374	H R 3100	East Asia Security Act of 2005	95	97	118	105	dBusEmpl	0.10	0.06	0.96
109	294	H R 5228	"To require representatives of governments designated as State Sponsors of Terrorism to disclose to the Attorney General lobbying contacts with legislative branch officials, and for other purposes"	57	138	204	20	dBusEmpl	0.16	0.08	0.99

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.		Rep..		Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$
109	503	H R 6143	Ryan White HIV/AIDS Treatment Modernization Act	120	75	204	21	dCatholic	-0.15	0.08	0.02
109	559	H R 1606	Online Freedom of Speech Act	46	142	179	38	dCatholic	-0.14	0.07	0.02
109	378	H J RES 88	Proposing an amendment to the Constitution of the United States relating to marriage	34	158	201	27	dCatholic	-0.12	0.08	0.05
109	296	H J RES 10	Proposing an amendment to the Constitution of the United States authorizing the Congress to prohibit the physical desecration of the flag of the United States	77	116	208	12	dCatholic	0.13	0.08	0.96
109	631	H RES 599	Establishing the Task Force on Ocean Policy	8	193	92	134	dCatholic	0.14	0.08	0.97
109	519	H R 5602	To Authorize the Extension of Nondiscriminatory Treatment (Normal Trade Relations Treatment) to the Products of Vietnam	89	93	136	66	dEducation	0.11	0.07	0.96
109	446	H R 6061	Secure Fence Act of 2006	64	131	219	5	dHispanic	-0.42	0.19	0.00
109	468	H R 6095	Immigration Law Enforcement Act of 2006	62	134	214	5	dHispanic	-0.33	0.17	0.01
109	661	H R 4437	“Border Protection, Antiterrorism, and Illegal Immigration Control Act”	35	164	203	17	dHispanic	-0.29	0.14	0.01
109	422	H R 4	Pension Protection Act	75	114	202	16	dHispanic	-0.29	0.10	0.00
110	511	H R 6515	Drill Responsibly in Leased Lands Act of 2008	216	10	26	161	dHispanic	-0.26	0.12	0.01
110	398	H R 2264	No Oil Producing and Exporting Cartels Act NOPEC	217	5	124	66	dHispanic	-0.22	0.10	0.02
110	835	H R 2776	Renewable Energy and Energy Conservation Tax Act of 2007	209	11	9	177	dHispanic	-0.20	0.12	0.04
109	31	H R 418	REAL ID Act	41	152	219	7	dHispanic	-0.17	0.11	0.04
109	465	H R 6094	Community Protection Act of 2006	106	90	221	4	dHispanic	-0.14	0.09	0.03
109	568	H R 4128	Private Property Rights Protection Act	157	35	217	2	dHispanic	0.14	0.10	0.96
109	81	H R 609	College Access and Opportunity Act	14	179	206	18	dHispanic	0.15	0.09	0.97
110	437	H R 6304	FISA Amendments Act of 2008	105	125	186	1	dHispanic	0.16	0.10	0.95
109	507	H J RES 68	“Making Continuing Appropriations for the Fiscal year 2006, and for other purposes”	127	63	218	2	dHispanic	0.17	0.09	0.98
110	20	H R 3	Stem Cell Research Enhancement Act	213	16	36	157	dHispanic	0.19	0.12	0.96
110	443	S 5	Stem Cell Research Enhancement Act	207	16	36	159	dHispanic	0.20	0.11	0.97
110	439	H R 2560	Human Cloning Prohibition Act	187	31	14	180	dHispanic	0.20	0.11	0.97
109	477	H R 4772	Private Property Rights Implementation Act of 2006	37	147	196	23	dHispanic	0.22	0.13	0.98
110	621	S J RES 45	Expressing the consent and approval of Congress to an interstate compact regarding water resources in the Great Lakes–St. Lawrence River Basin	202	19	183	6	dHispanic	0.25	0.13	0.97
110	863	H R 1908	Patent Reform Act of 2007	159	56	60	116	dHispanic	0.29	0.10	1.00
109	209	H R 5429	American-Made Energy and Good Jobs Act	27	169	197	30	dIncome	-0.69	0.21	0.00

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.		Rep..		Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$
109	356	H R 4761	Deep Ocean Energy Resources Act	39	155	191	31	dIncome	-0.45	0.17	0.00
109	476	H R 5092	“Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATFE) Modernization and Reform Act”	64	121	212	8	dIncome	-0.43	0.18	0.00
109	511	H R 4772	Private Property Rights Implementation Act of 2006	37	155	193	25	dIncome	-0.38	0.18	0.01
109	506	H R 3824	Threatened and Endangered Species Recovery Act	35	158	192	34	dIncome	-0.34	0.15	0.00
109	477	H R 4772	Private Property Rights Implementation Act of 2006	37	147	196	23	dIncome	-0.32	0.16	0.01
109	401	H R 5013	Disaster Recovery Personal Protection Act of 2006	99	96	222	1	dIncome	-0.30	0.18	0.02
109	151	H R 4200	Forest Emergency Recovery and Research Act	41	154	201	26	dIncome	-0.30	0.16	0.01
110	336	H R 2207	“Making supplemental appropriations for agricultural and other emergency assistance for the fiscal year ending September 30, 2007”	219	5	79	114	dIncome	-0.27	0.13	0.00
109	479	S 403	Child Custody Protection Act	49	142	214	9	dIncome	-0.27	0.15	0.02
109	144	H R 748	Child Interstate Abortion Notification Act	54	144	215	11	dIncome	-0.27	0.14	0.01
109	534	S 397	Protection of Lawful Commerce in Arms Act	60	138	222	4	dIncome	-0.25	0.16	0.03
110	601	H R 6842	National Capital Security and Safety Act	83	144	179	7	dIncome	-0.24	0.11	0.01
109	526	H R 6099	Unborn Child Pain Awareness Act of 2006	40	150	208	9	dIncome	-0.21	0.14	0.04
109	238	H R 2744	“Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2006”	191	5	215	13	dIncome	-0.18	0.12	0.05
109	199	H R 2361	“Department of the Interior, Environment, and Related Agencies Appropriations Act, 2006”	113	81	214	8	dIncome	-0.16	0.10	0.04
109	132	H R 6	Energy Policy Act of 2005	40	160	207	22	dIncome	-0.16	0.10	0.05
109	433	H R 503	Horse Protection Act	155	36	106	110	dIncome	0.14	0.09	0.96
110	663	H R 6707	Taking Responsible Action for Community Safety Act	203	22	37	151	dIncome	0.16	0.09	0.97
110	469	H R 6251	Responsible Federal Oil and Gas Lease Act	209	19	11	174	dIncome	0.16	0.10	0.95
110	835	H R 2776	Renewable Energy and Energy Conservation Tax Act of 2007	209	11	9	177	dIncome	0.17	0.11	0.96
110	439	H R 2560	Human Cloning Prohibition Act	187	31	14	180	dIncome	0.18	0.10	0.98
110	832	H R 3221	“New Direction for Energy Independence, National Security, and Consumer Protection Act”	212	9	26	161	dIncome	0.18	0.10	0.97
110	1033	H R 2262	Hardrock Mining and Reclamation Act	217	3	24	161	dIncome	0.18	0.10	0.97
110	1057	H R 3685	Employment Non-Discrimination Act (ENDA)	197	25	35	157	dIncome	0.19	0.10	0.99

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.		Rep..		Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$
109	535	H R 6375	Requiring the Secretary of Defense to submit to Congress an annual report and to provide notice to the public on congressional initiatives in funds authorized or made available to the Department of Defense.	2	187	68	138	dIncome	0.20	0.12	0.98
110	542	H R 2764	“Department of State, Foreign Operations, and Related Programs Appropriations for FY 2008”	207	14	31	162	dIncome	0.20	0.10	0.99
109	503	H R 6143	Ryan White HIV/AIDS Treatment Modernization Act	120	75	204	21	dJewish	-0.27	0.09	0.00
109	445	H R 6	Energy Policy Act of 2005	74	124	199	31	dJewish	-0.25	0.10	0.00
109	465	H R 6094	Community Protection Act of 2006	106	90	221	4	dJewish	-0.24	0.09	0.00
109	476	H R 5092	“Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATFE) Modernization and Reform Act”	64	121	212	8	dJewish	-0.24	0.13	0.02
109	39	H CON RES 354	Expressing the continued support of Congress for requiring an institution of higher education to provide military recruiters with access to the institution’s campus and students at least equal in quality and scope to that which is provided to any other employer in order to be eligible for the receipt of Federal funds.	124	64	221	0	dJewish	-0.18	0.09	0.01
109	90	S 686	For the relief of the parents of Theresa Marie Schiavo	47	53	156	5	dJewish	-0.17	0.10	0.03
109	401	H R 5013	Disaster Recovery Personal Protection Act of 2006	99	96	222	1	dJewish	-0.17	0.10	0.03
109	392	H R 5684	To implement the United States-Oman Free Trade Agreement	21	176	198	28	dJewish	-0.17	0.10	0.04
109	559	H R 1606	Online Freedom of Speech Act	46	142	179	38	dJewish	-0.16	0.09	0.03
109	108	S 256	Bankruptcy Abuse Prevention and Consumer Protection Act	72	125	228	0	dJewish	-0.16	0.09	0.03
109	533	H R 554	Personal Responsibility in Food Consumption Act	80	117	225	1	dJewish	-0.15	0.09	0.04
109	422	H R 4	Pension Protection Act	75	114	202	16	dJewish	-0.13	0.08	0.03
109	433	H R 503	Horse Protection Act	155	36	106	110	dJewish	0.20	0.11	0.97
110	384	H R 698	Industrial Bank Holding Company Act	206	1	160	15	dMormon	-0.27	0.22	0.01
110	1000	H R 505	Native Hawaiian Government Reorganization Act	219	1	38	152	dMormon	0.14	0.12	0.97
109	380	S 2754	Alternative Pluripotent Stem Cell Therapies Enhancement Act	58	137	214	15	dOther	-0.27	0.10	0.01
109	234	S 2803	Mine Improvement and New Emergency Respose Act	160	33	218	4	dOther	-0.25	0.09	0.00
110	617	H R 2900	Food and Drug Administration Administration Act	213	10	186	6	dOther	-0.23	0.11	0.01
109	526	H R 6099	Unborn Child Pain Awareness Act of 2006	40	150	208	9	dOther	-0.23	0.11	0.01
110	996	H R 1483	Celebrating America’s Heritage Act	219	0	69	121	dOther	-0.22	0.11	0.02

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.		Rep..		Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$
109	32	H R 4167	National Uniformity for Food Act	71	124	211	13	dOther	-0.22	0.09	0.01
109	445	H R 6	Energy Policy Act of 2005	74	124	199	31	dOther	-0.20	0.09	0.01
109	360	H RES 344	Expressing the sense of the House of Representatives that a Chinese state-owned energy company exercising control of critical United States energy infrastructure and energy production capacity could take action that would threaten to impair the national security of the United States	180	9	215	6	dOther	-0.19	0.10	0.02
109	378	H J RES 88	Proposing an amendment to the Constitution of the United States relating to marriage	34	158	201	27	dOther	-0.18	0.11	0.04
109	144	H R 748	Child Interstate Abortion Notification Act	54	144	215	11	dOther	-0.18	0.10	0.03
110	662	H R 7081	United States-India Nuclear Cooperation Approval and Nonproliferation Enhancement Act	120	104	176	10	dOther	-0.18	0.08	0.01
110	156	H R 1362	Accountability in Contracting Act	225	0	119	71	dOther	-0.18	0.10	0.02
109	479	S 403	Child Custody Protection Act	49	142	214	9	dOther	-0.18	0.10	0.04
109	627	H R 3199	USA PATRIOT and Terrorism Prevention Reauthorization Act	43	155	207	17	dOther	-0.17	0.09	0.03
110	836	S 1927	Protect America Act	41	178	185	2	dOther	-0.16	0.10	0.05
110	599	H R 6899	Comprehensive American Energy Security and Consumer Protection Act	218	13	15	174	dOther	-0.16	0.09	0.03
109	414	H R 3199	USA PATRIOT and Terrorism Prevention Reauthorization Act	42	156	214	13	dOther	-0.16	0.09	0.02
109	503	H R 6143	Ryan White HIV/AIDS Treatment Modernization Act	120	75	204	21	dOther	-0.16	0.08	0.02
109	356	H R 4761	Deep Ocean Energy Resources Act	39	155	191	31	dOther	-0.15	0.09	0.04
109	257	H R 4939	“Making emergency supplemental appropriations for the fiscal year ending September 30, 2006, and for other purposes”	146	47	203	19	dOther	-0.15	0.08	0.02
110	664	S 3325		202	22	175	18	dOther	-0.14	0.08	0.04
109	548	H J RES 65	Disapproving the recommendations of the Defense Base Closure and Realignment Commission	50	140	34	182	dOther	-0.13	0.08	0.04
109	416	H R 4157	Better Health Information System Act	56	137	213	9	dOther	0.14	0.08	0.96
109	616	H R 4340	United States-Bahrain Free Trade Agreement Implementation Act	114	81	211	13	dOther	0.14	0.09	0.96
110	309	H R 1595	Guam World War II Loyalty Recognition Act	219	2	65	130	dOther	0.15	0.10	0.96
110	439	H R 2560	Human Cloning Prohibition Act	187	31	14	180	dOther	0.16	0.10	0.97
110	387	H R 3058	Public Land Communities Transition Act of 2007	199	19	16	172	dOther	0.17	0.10	0.97

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.		Rep..		Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$
109	170	H R 1544	Faster and Smarter Funding for First Responders Act	180	9	226	1	dSenators	-0.14	0.10	0.02
109	503	H R 6143	Ryan White HIV/AIDS Treatment Modernization Act	120	75	204	21	dSenators	0.13	0.14	0.96
109	470	S 2832	Appalachian Regional Development Act Amendments of 2006	45	149	168	55	dServicePro	-0.08	0.06	0.05
110	353	H R 6124	“To provide for the continuation of agricultural and other programs of the Department of Agriculture through the fiscal year 2012, and for other purposes”	213	12	89	98	dUrban	-0.48	0.20	0.00
110	601	H R 6842	National Capital Security and Safety Act	83	144	179	7	dUrban	-0.46	0.23	0.01
110	315	H R 2419	“Farm, Nutrition, and Bioenergy Act”	215	15	98	91	dUrban	-0.35	0.17	0.01
110	336	H R 2207	“Making supplemental appropriations for agricultural and other emergency assistance for the fiscal year ending September 30, 2007”	219	5	79	114	dUrban	-0.24	0.18	0.03
110	641	H R 2641	Energy and Water Development and Related Agencies Appropriations for FY 2008	223	1	85	110	dUrban	-0.18	0.14	0.04
109	439	H R 4893	Restricting Indian Gaming to Homelands of Tribes Act of 2006	38	154	207	16	dUrban	0.15	0.09	0.96
109	513	H R 3895	To amend title V of the Housing Act of 1949 to provide rural housing assistance to families affected by Hurricane Katrina	184	5	149	76	lAge	-0.15	0.07	0.02
109	559	H R 1606	Online Freedom of Speech Act	46	142	179	38	lAge	-0.13	0.07	0.02
109	535	H R 6375	Requiring the Secretary of Defense to submit to Congress an annual report and to provide notice to the public on congressional initiatives in funds authorized or made available to the Department of Defense.	2	187	68	138	lAge	-0.13	0.07	0.02
109	399	H R 2601	“Foreign Relations Authorization Act, Fiscal Years 2006 and 2007”	134	64	215	13	lAge	-0.11	0.06	0.04
109	411	H R 5682	United States and India Nuclear Cooperation Promotion Act	139	58	218	9	lAge	-0.10	0.07	0.04
110	608	H R 6604	Commodity Markets Transparency and Accountability Act	211	14	68	118	lAge	0.10	0.06	0.97
109	443	H R 3045	Dominican Republic-Central America-United States Free Trade Agreement Implementation Act	15	186	201	27	lAge	0.12	0.07	0.97
110	663	H R 6707	Taking Responsible Action for Community Safety Act	203	22	37	151	lBlack	-0.16	0.10	0.04
110	423	H R 2316	Honest Leadership and Open Government Act of 2007	208	14	185	6	lBlack	-0.16	0.10	0.04
109	132	H R 6	Energy Policy Act of 2005	40	160	207	22	lBlack	0.13	0.08	0.96

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.				Rep..				Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$		
109	506	H R 3824	Threatened and Endangered Species Recovery Act	35	158	192	34			lBlack	0.16	0.09	0.97		
109	204	H R 810	Stem Cell Research Enhancement Act	186	14	49	180			lCatholic	-0.18	0.10	0.00		
110	439	H R 2560	Human Cloning Prohibition Act	187	31	14	180			lCatholic	-0.11	0.09	0.04		
110	443	S 5	Stem Cell Research Enhancement Act	207	16	36	159			lCatholic	-0.10	0.08	0.04		
110	1060	H R 3688	United States-Peru Trade Promotion Agreement	108	114	174	16			lCatholic	-0.09	0.07	0.05		
109	526	H R 6099	Unborn Child Pain Awareness Act of 2006	40	150	208	9			lCatholic	0.27	0.20	0.99		
110	635	H R 7006	Disaster Tax Relief Act of 2008	224	4	191	0			lFarmer	-0.10	0.06	0.04		
110	269	H R 249	To restore the prohibition on the commercial sale and slaughter of wild free-roaming horses and burros.	193	23	81	112			lFarmer	-0.09	0.05	0.03		
110	660	H R 7110	“Making supplemental appropriations for job creation and preservation, infrastructure investment, and economic and energy assistance for the fiscal year ending September 30, 2009”	220	8	39	150			lFarmer	-0.08	0.05	0.04		
110	353	H R 6124	“To provide for the continuation of agricultural and other programs of the Department of Agriculture through the fiscal year 2012, and for other purposes”	213	12	89	98			lFarmer	0.09	0.06	0.95		
110	835	H R 2776	Renewable Energy and Energy Conservation Tax Act of 2007	209	11	9	177			lHispanic	-0.39	0.13	0.00		
110	613	H R 2669	College Cost Reduction Act of 2007	223	0	46	149			lHispanic	-0.30	0.16	0.02		
110	575	H R 6630	To prohibit the Secretary of Transportation from granting authority to a motor carrier domiciled in Mexico to operate beyond United States municipalities and commercial zones on the United States-Mexico border unless expressly authorized by Congress	212	3	178	15			lHispanic	-0.28	0.13	0.00		
110	913	H R 2693	Popcorn Workers Lung Disease Prevention Act	211	7	47	144			lHispanic	-0.26	0.14	0.01		
110	349	H R 1773	Safe American Roads Act	219	2	187	1			lHispanic	-0.24	0.12	0.03		
110	1050	H R 3043	“Making appropriations for the Department of Labor, Health and Human Services, and Education, and related agencies for fiscal year ending September 30, 2008, and for other purposes”	219	0	47	141			lHispanic	-0.24	0.15	0.05		
110	1009	H R 3963	Children’s Health Insurance Program Reauthorization Act	219	1	43	140			lHispanic	-0.23	0.15	0.05		
110	188	H R 137	Animal Fighting Prohibition Enforcement Act	212	2	152	36			lHispanic	-0.23	0.12	0.02		
110	396	H R 1427	Federal Housing Finance Reform Act	220	0	89	103			lHispanic	-0.22	0.13	0.04		

Table 5: All cases in the 109th and 110th Congresses where the posterior probability is greater than 0.95 or less than 0.05 that the residual attribute-specific effect is greater than zero.

Con	RC	Roll Call Vote Information		Dem.		Rep..		Attribute-Specific Effect			
		Bill	Description	Yea	Nay	Yea	Nay	Attr.	Effect	SE	$p(> 0)$
110	458	H R 2176	To provide for and approve the settlement of certain land claims of the Bay Mills Indian Community	93	131	23	167	lHispanic	0.17	0.08	0.99
110	548	H R 2771	Legislative Branch Appropriations for FY 2008	199	11	14	163	lHispanic	0.23	0.14	0.96
110	608	H R 6604	Commodity Markets Transparency and Accountability Act	211	14	68	118	lHispanic	0.23	0.13	0.97
110	540	H R 6604	Commodity Markets Transparency and Accountability Act	212	16	61	133	lHispanic	0.24	0.12	0.98
109	52	H R 841	Continuity in Representation Act	122	64	206	3	lJewish	0.10	0.06	0.97
109	69	S 2120	Milk Regulatory Equity Act	122	70	162	56	lJewish	0.12	0.06	0.99

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