UNIVERSITY OF CALIFORNIA, SAN DIEGO

Party Effects in the House and Senate

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by

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The dissertation of Alexandra Leigh Shankster is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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2010

DEDICATION

I DEDICATE THIS THESIS TO DON AND KAREN SHANKSTER, WHO PROVIDED MUCH SUPPORT TO ME. Also, a shout out to all of my friends who EMOTIONALLY OR INTELLECTUALLY HELPED ME TO COMPLETE THIS.

USE THE FONT I WANT

ONLY THIS PAGE IN MANY

MY THESIS DONE NOW.

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ABSTRACT OF THE DISSERTATION

Party Effects in the House and Senate

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There exists a large body of literature regarding the organization of the United States Congress and the importance of political parties in shaping legislative outcomes. Ideological scores developed in the last two decades have become increasingly popular in this debate. However I show here that the scores themselves are affected, and most likely biased, by the strength of the majority party. First, I show that the distribution of DW-NOMINATE scores for majority members is significantly different than for the minority party. In Chapter 2, I show that the probability DW-NOMINATE incorrectly predicts a majority party member's vote is significantly lower than for a minority party member's vote. I argue that this is because fewer bills dividing the majority party are likely to reach the floor than those dividing the minority party. Finally, in Chapter 3, I demonstrate one method of using DW-NOMINATE scores that accounts for the party strength bias of the scores. Using this method, I show that majority-party membership is more important for shaping legislative outcomes than is committee membership or ideological centrism.

Introduction

A large body of work on the United States Congress is concentrated upon discerning whether political parties are able to constrain members on votes for which an individual legislator's preferences diverge from those of the party collectively. Many scholars argue that parties may be viewed as providers of a collective good by constraining members' votes in order to provide a clear voting cue to the electorate, which should increase the electoral prospects of all of that party's candidates in the next election. However, each legislator has an incentive to engage in "selfish" behavior and cater to his or her individual constituencies, thus undermining their party's collective chances on election day. In the stronger version, the Cartel Agenda Model, parties *always* attempt to provide this public good to its members (Cox and McCubbins 1993, 2004); in the weaker version, Conditional Party Government, parties provide this good only when its members are sufficiently similar in ideology and *choose* to cede allow their party leaders to provide this good (Cooper and Brady, 1981; Rohde, 1991; Aldrich, 1995; Schickler and Rich, 1997; Aldrich and Rohde, 2001; Aldrich et al, 2006).

Therefore, there are two main views on parties in the United States: parties are collections of like-minded individuals, and parties are institutions that affect outcomes beyond providing legislators convenient means to recognize like-minded souls on the floor. Proponents of the first theory argue that the electoral institutions of the United States do not serve to bind members' behavior into a cohesive voting bloc. Therefore, parties provide labels to legislators who are more ideologically similar, but cannot induce cohesion on the part of its members (Krehbiel, 1998). Proponents of the second theory argue that legislators in the U.S. do indeed have an incentive to vote cohesively: it

strengthens the signal provided by the party label to voters and enhances the chances of its members to enjoy majority status, thus enjoying greater legislative resources and greater chances of success on the floor (Cox and McCubbins, 1993; 2004).

Whether parties exert influence over legislative outcomes in the U.S. Congress continues to be subject to wide debate in the literature. Some scholars argue that legislators cede power to the party leadership so that the leadership may exert control over the menu of votes, effectively "tying" individual legislators' hands. This then solves the collective action problem faced by each legislator; namely, to vote for those bills which may favor his or her constituency, but which may be detrimental to the nation as a whole.

However, others argue that parties do nothing more than to provide a voters a cue to legislator preferences; Democrats merely vote with other Democrats because they hold "Democrat" preferences. Likewise, Republicans vote with other Republicans because they hold "Republican" preferences. The majority party naturally wins more often, because there are more majority-party preferences on the floor. If this is the true state of the U.S. Congress, then one should expect less "self-control" on the part of individual legislators, as no mechanism is inducing responsible behavior (CITE MAYHEW), other than the preferences of the median voter.

Similarly, others argue that particularized interests are more important to the organization of Congress and the resulting legislative outcomes. In this view, the committee structure of Congress allows for trades among members of power over policy jurisdictions. Therefore, members whose constituents are most affected by policies related to Agriculture, for example, cede power over other jurisdictions in order to enjoy

a privileged position on the Agriculture committee. A legislative body operating under this organization structure would often produce policies biased towards the extremes of the policy spectrum.

Further, the methods and tools we use to test the presence of this effect are also often controversial. How do we measure the effect of parties on agenda control? Or whether committees do in fact cater to "preference outliers"? Our decisions regarding measurement are clearly important to the results we obtain and our ability to interpret those results accurately. In this dissertation, I first analyze the data and measures commonly used in studies of party strength in Congress. In Chapter 3, I then test three different theories of legislative organization in Congress using simple techniques which overcome the weaknesses of those scores discussed in Chapters 1 and 2.

Which view of American parties is correct has implications for our understanding and interpretation of political outcomes in the United States. Further, it is difficult if not impossible to assess the impact of future policies on legislative outcomes without a solid answer this fundamental question.

Chapter 1: Measuring the Effect of Agenda Control on DW-NOMINATE Scores

Clubb and Traugott (1977) and Cooper, Brady and Hurley (1977) were among the first scholars to examine intraparty cohesion in the U.S. House of Representatives. These scholars wished to discern whether parties were in decline, and used various measures to determine the frequency with which members were voting with their parties in the House over time. Similarly, Hurley and Wilson (1989) examine partisan voting patters in the Senate and argue that while there is a general decline in partisan voting from the 50th to the 100th Congresses, there is wide oscillation which may be due to internal institutional changes or changes in the inter-cameral balance of agenda-setting power. Cohen (1981) has attacked the same subject, incorporating a cohort model to determine the effect of aging and period effects upon a Congressman's changing loyalty to his party on roll call votes. What these studies miss, however, is the effect of majority party status upon intra-party cohesion.

In this chapter, I perform a four-way matching test on the DW-NOMINATE scores to detect whether the effect of parties is present in the United States Congress. First, I restrict the data to include only legislators serving in two consecutive Congresses during which the majority party changed for the "treatment" cases; similarly, I restrict the data to include only legislators serving in two consecutive Congresses during which no change in majority party occurred for my "control" cases. On this data, I perform the following tests: First, I use non-parametric method, the Kolmorogov-Smirnov test, on the distribution of ideal points (as measured by DW-Nominate). This allows me to determine the probability that the DW-NOMINATE scores of majority-party legislators are pulled

from the same cumulative distribution as those of minority-party members. Next, parametric tests are used to determine the way in which the distribution of ideal points differs between majority and minority party legislators.

I find that in the House, the distribution of the DW-NOMINATE scores of legislators included in the minority party block-out zone are significantly different from the distribution of those same members' DW-Nominate scores when included in the majority party block-out zone in the following or previous Congress, even though the overall distribution of DW-NOMINATE scores for the two parties do not change Congress to Congress. [1] Further, in comparing the Senate to the House, I find that the distributions of DW-NOMINATE scores for legislators located in the majority party's and minority party's block-out zones is *not* significantly different in the Senate.

The organization of this chapter is as follows: First, I discuss theories of Congressional voting and partisan agenda control, as well as attempts to measure party cohesion. I then discuss the DW-NOMINATE methodology and the way in which these interact with theories of agenda control to yield predictions on the presence or absence of agenda control. Finally, the results of the DW-NOMINATE tests are presented and I discuss the implications for future work.

1.1 Voting, Parties and Agenda Control

As mentioned in the introduction, two of the main theories regarding political parties in the United States are that, first, parties provide a collective good to its members by constraining members' votes in order to strengthen the message conveyed by the party

[1] Majority and minority party block-out zones refer to the ideological blocs defined by Cox and McCubbins (1993; 2004) such that a status quo located in that bloc will be protected by the party if possible.

brand name, and also, to enact more collectively "responsible" policies. The second theory is that parties do little to constrain members' behavior; rather, parties provide labels to like-minded voters, candidates and legislators.

If parties do not matter, then the median voter on the floor is the point to which all policies should move. Further, as House Representatives move ideologically further from the median voter, they should fare increasingly worse in terms of protecting favored status quos and enacting their preferred policies. Similarly, Senators who are ideologically situated between the filibuster and presidential veto pivots enjoy more legislative control than members outside of this zone (Krehbiel 1998, p. 23).

If parties *do* affect outcomes in the United States, then policies still move to the median voter's ideal point, but only those policies for which the majority party favors the floor median to the status quo. The majority-party favored status quos are protected from floor votes. Further, party leaders work to avoid roll calls on which the party would be divided, thus weakening the electoral cue to voters. Within this context, the *majority party median* enjoys a status as pivotal as that of the floor median voter.

Clearly, the difficulty in testing these two models stems from the convergence of many predictions; if legislators are bound by the agenda presented to them by the leadership, the party's members will appear cohesive on the floor. Similarly, if party members are merely ideologically similar, they will appear cohesive on the floor. I now turn to a discussion of previous attempts to detect agenda control and determine party strength.

1.2 Measuring Party Strength

One of the most popular methods of measuring party cohesion or strength has been to compare minority and majority parties' Rice Cohesion Scores, or Rice Index of Cohesion (Rice, 1928). The measure is calculated as follows:

$$Rice = |Yea - No|/(Yea + No),$$

where *Yes* is the number of legislators voting for the measure, *No* is the number of legislators voting against the measure, and the denominator is the total number of votes. As parties become more cohesive, the measure goes to 1. Of course, this measure is averaged over all votes for the time period in question. However, critics of this measure have pointed to its sensitivity to party size. For instance, Desposato (2003) uses roll call data from the Brazilian National Congress to show that the Rice Cohesion Score overestimates cohesion in smaller parties. In essence, subgroups (or parties) always appear more cohesive than the larger group (entire legislature), thus creating the "illusion of voting coalitions, even when there are none" (Desposato 2003, 278). Krehbiel (2006) similarly argues that Rice cohesion scores may vary between parties (i.e., the majority party may appear more cohesive) due to interparty differences in preference heterogeneity rather than agenda control exercised by the majority party.

Many studies of parties in Congress have incorporated ideological scores into their analyses. For example, Cox and McCubbins (1993) compare party and committee medians' DW-NOMINATE scores and find that most committees are accurate representations of the House floor's preference. The authors argue this evidence to argue against theories of government-by-committee and for government-by-majority-party.

Aldrich and Rohde (1998) measure intraparty heterogeneity by examining the distance between the two party medians as measured by W-Nominate, the amount of variance (R^2) obtained by regressing legislators' W-Nominate scores on party affiliation, and the number of legislator scores that would need to move in order to obtain complete separation of the two parties. Binder (1999) explains legislative gridlock by using W-NOMINATE to examine inter-cameral differences in the distribution of policy preferences within and between parties in the two chambers. Krehbiel (1998) uses NOMINATE scores to analyze quartiles and the importance of filibuster pivots (as opposed to, say, the floor median or majority party median) to legislative outcomes in the Senate.

However, few of these studies have examined the impact of parties on DW-Nominate scores themselves. An important exception is McCarty, Poole and Rosenthal (2001), who examine post-war party switchers' DW-NOMINATE scores and demonstrate that members' scores change accordingly following a switch to the other party. The authors also compare the "sincere voting model" and partisan model when estimating cutpoints. Using the model of sincere voting (Black, 1948; Downs, 1957; Krehbiel, 1993, 1998) as a baseline, under which a single cutpoint is estimated, they examine whether a partisan model, under which two cutpoints is estimated, improves the classification of legislators' votes. They conclude that the addition of a "partisan" cutpoint makes "at best, a marginal improvement over the standard spatial model" (2001, p. 15). However, Snyder and Groseclose (2001) argue in response that the baseline used in that analysis was inappropriate and the resulting test was severely biased to *understate* the effects of parties. They contend that the one-cutpoint model used in the first stage is

assumed to reflect no party influence, but is calculated on all roll call votes, some of which the party will exert influence upon. Therefore, party influence is already built into the baseline measure.

This chapter will show that parties do indeed affect the roll call data and the resulting legislator ideal point estimates. Before turning to my analysis, I take a brief moment to discuss the underlying assumptions of the DW-NOMINATE model.

1.3 DW-NOMINATE Scores, Ideology and Roll Call Voting

While the issue of recovering numerical representations of legislator ideal points has been attacked by numerous scholars and algorithms, I use DW-Nominate scores here (Poole and Rosenthal, 1997, 2008). [2] This choice is fairly noncontroversial as I am examining the 80th-110th Congresses, and NOMINATE scores are almost perfectly correlated with scores recovered by other methods (Clinton, Jackman and Rivers, 2001).

DW-NOMINATE assumes a Gaussian (or normal) utility function, and determines legislators' ideal points in a constrained space (-1 to 1), or the unit hypersphere, using legislators' roll call votes. Legislators' utility for voting Yea on a given roll call is a random utility model comprised of two components, one deterministic and the other stochastic (or random). The deterministic component is the familiar Euclidean (quadratic) utility model such that a legislator's utility decreases as the proposed policy moves further from his or her most preferred policy in either direction:

$$d_{ij} = \Sigma_k (x_{ik} - z_{jyk})^2,\ k=1,\ldots,s$$

where x_{ik} is legislator i's ideal point on the kth dimension of roll call vote j; z_{jyk} is the policy outcome associated with Yea on the k^{th} dimension of roll call j. Therefore, the

utility function for legislator *i* on roll call *j* of *s* dimensions is a normal distribution of the following form:

$$U_{ij} = u_{ij} + \varepsilon_{ij} = \beta\exp[-d_{ijy}^2] + \varepsilon_{ij}$$

where β is the signal-to-noise ratio, common to all legislators (Poole and Rosenthal, 1997; Poole, 2005).

Therefore, as with W-NOMINATE, DW-NOMINATE uses the weighted distance model; however, for the first dimension, this weight is always 1. Further, one of the DW-NOMINATE dimensions is time; therefore, one may compare legislatures at various time points (currently, the standard time points analyzed using DW-NOMINATE are two-year Congresses). Errors are distributed normally, with mean zero. The coordinate, or score, for legislator *i* in legislative session *t* on dimension *k* is denoted as:

$$X_{ikt} = \chi_{ik0} + \chi_{ik1}T_{t1} + \chi_{ik2}T_{t2} + \ldots + \chi_{ikv}T_{tv},$$

Where $t = 1,\ldots, T$ denotes the legislative sessions, T_i denotes the number of legislative session served by legislator *i*, *k* is the policy dimension, and *v* is the degree of the polynomial which allows for spatial movement of legislator *i*'s ideal point over time.[3]

However, as Clinton and Mierowitz (2001) warn, this estimation technique does not fully incorporate the structure of the legislative agenda. They argue that the Nay position is estimated as a free parameter, rather than a fixed point introduced by the previously passed policy. In other words, DW-NOMINATE may be neglecting a key component of politics: the ability to manipulate an agenda. While Clinton and Mierowitz

[3] For a full mathematical explanation of DW-NOMINATE scores and roll call classifications, see McCarty, Poole and Rosenthal (1997) or Carroll, Lo, Poole and Rosenthal (2009).

focused upon the manipulation of the agenda through sequencing, I focus here upon the manipulation of the agenda by choosing which items receive a vote at all.

1.4 Agenda Control and DW-NOMINATE

Now that we have addressed how DW-NOMINATE scores are calculated, how should we expect these scores to change in a legislature where the majority party controls the agenda? As noted earlier, in legislatures where parties exercise strength via floor control of members' votes, such as Britain, DW-NOMINATE cannot compute individual legislator scores as all legislators of a given party overwhelmingly vote together, leaving little variation with which to compute individual scores. Rather, *optimal classification* scores are used to locate parties in relation to one another.

In the US, those who believe that parties matter argue that they matter in the agenda-setting stage rather than the floor-voting stage. As Cox and McCubbins (1993, 2004) argue, parties provide a collective good to their members in the form of protecting its members from votes that would damage the electoral cue provided by the party brand name. However, only the majority party enjoys this ability to protect its members by controlling access to the agenda. Therefore, when examining the impact of parties on NOMINATE scores and roll call data, we should expect the majority party to exhibit the effects of parties, but not the minority party.

The Cartel Agenda model defines a majority party "block-out zone", which covers the uni-dimensional space between the floor median voter, F, and $2M\text{-}F$, where M is the majority party median and $d(F\text{-}M)=(M\text{-}(2M\text{-}F)$. That is, the majority party median is the midpoint of the block-out zone, and the floor median is one bound, $(2M\text{-}F)$ is the other bound. Legislators whose ideal points locate them inside this zone should never be

rolled on a final passage vote, as the majority party will protect the agenda from bills which would move the status quo outside of this zone (make the majority party worse-off).

If the majority part exercised negative agenda control on *all* votes, we would see a clump of majority-party legislators sharing the same ideal point in every Congress, as these legislators would never vote against one another because bills within the block-out zone would never appear on the floor. However, the Cartel theory states that the majority party only exercises this agenda control over *final passage votes*. Still, we should expect that the roll call data of majority-party legislators appears more uniform than minority party legislators given the advantage the majority party has in protecting the party brand name via control over the agenda. DW-NOMINATE scores are computed using *every* non-unanimous vote, so there is noise. However, what imprint upon the DW-NOMINATE output should we expect? Consider the case of figure 1 below, which shows a scenario in which Democrats, on the left of the one-dimensional space, are the majority party:

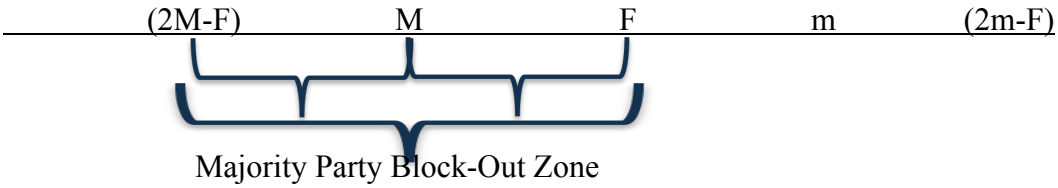


Figure 1: Majority Party Block-Out Zone

In this example, Democrats will not allow any bills for which the status quo lies within the Majority Party Block-Out Zone to come to the floor for a vote, as the bill's location would move to the floor median. A movement to the floor median of any of these status quos would make the majority party worse off than its current location. While the minority party would like to protect bills within its block-out zone as well, according to the Cartel Agenda Model, the party does not have a similar ability to protect its favored status quos.

In terms of the resulting distribution of cutpoints, this implies that a greater number of cutpoints will reside in the minority party's block-out zone than in the majority party's. For instance, using the example above, consider a tax policy that is currently located within the minority party's block-out zone at *q*. The resulting cutpoint for a vote proposing a move from *q* to F would lie at the midpoint between *q* and F:

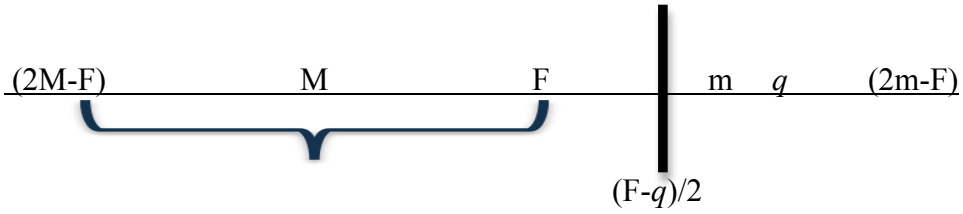


Figure 2: Block-Out Zones and Cutpoints

Those legislators to the right of the cutpoint prefer *q* to the bill's new location at F, as it *q* is closer to their ideal policy. Those to the left of the cutpoint prefer the new policy at F to *q*.

Cutpoints may also occur within the majority party's block-out zone on final passage votes. Consider the following, where *q* is the status quo:

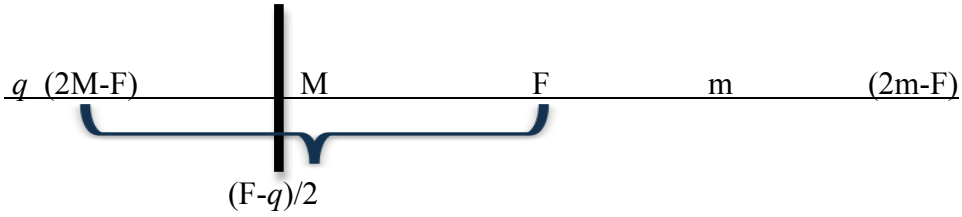


Figure 3: Majority Party Block-Out Zone Cutpoints

The status quo is not within the protected zone, so a majority of the majority party would prefer the new policy's position at F, as will all minority party members. However, those legislators within the majority party block-out zone who are located to the left of the cutpoint will prefer the old status quo *q* to the new policy at F. However, no cutpoint (on final passage votes) should ever occur between M and F, the majority and floor medians. A cutpoint between M and F would imply a status quo *q* located within the majority party block-out zone, and would therefore be protected from a floor vote.

1.5 Hypotheses

Therefore, the following prediction stem from the Cartel Agenda Model:

1. Representatives serving as majority-party legislators and whose DW-NOMINATE scores locate them within (M, F), the restricted majority-party block-out zone, should appear more partisan, i.e., vote with their party more often, than they should as

minority legislators. Therefore, *ceteris paribus*, the distribution of DW-NOMINATE scores for legislators within (M, F) should appear significantly different from the scores of those same members serving within the minority counterpart, (F, m). Specifically, this distribution should appear "tighter", or have less spread than legislators in the minority party block-out zone.

The distribution of scores should appear more partisan and more homogeneous as members will have less opportunity to "vote their conscience," so to speak. The menu of possible bills that might exacerbate intra-party differences is greatly constricted for majority members but not for minority members. Therefore, restricted majority party block-out zone members who may be more ideologically distinct will *appear* more homogeneous due to constraints imposed on the roll call data by the majority party leadership.

1.6 Analysis and Results

To investigate the differences in legislator voting behavior due to minority or majority party status, I first isolated members of the restricted party block-out zones who served in consecutive congresses during which there was a change in majority party. To determine the bounds of the restricted block-out zone in DW-NOMINATE terms, party medians and floor medians were determined from the full sample (all legislators of a given Congress). Restricted majority and minority party block-out zones are calculated using these DW-NOMINATE scores. Party-appropriate legislators whose scores are within those bounds are then included in the sample. By restricting analysis to consecutively serving legislators, the subject pool remains consistent.

I then determine if there is a change in the distribution of those subjects' DW-NOMINATE scores after the treatment variable, a change in majority or minority status. I also then examine restricted block-out zone legislators who served in consecutive Congresses where there was no treatment, or consecutive Congresses in which there was no change in majority party. By doing so, I eliminate much of the noise in my analysis; I am excluding members who were not present in both Congresses whose scores might have shifted the distribution of his or her party's DW-NOMINATE distribution. Also, by examining consecutive Congresses, I greatly reduce the impact of a shifting national political landscape.

Finally, I limit my analysis the distribution of first-dimension DW-NOMINATE scores, or the liberal-conservative dimension. As Poole and Rosenthal (2000) note, the second dimension picks up the conflict over civil rights until the mid-1970's and then decreases in importance as the South aligned with Republicans. Therefore, by concentrating on the first dimension, I maintain consistency over this time period to some extent. However, it is important to note that the ideological composition of the Democratic Party was shifting until the around the 95th Congress; further, many reforms to committee structure were also instituted at this time.

1.7 Test I

After restricting my set of observations as described above, the Kolmorogov-Smirnov test for the equality of distributions was applied to the following sets of individuals' DW-NOMINATE scores:

1. Democrats who served as majority party restricted block-out zone legislators in the nth Congress and as minority party legislators in the $(n + 1)$th Congress.

2. Republicans who served as majority-party restricted block-out zone legislators in the *n*th Congress and as minority legislators in the (*n + 1*)th Congress.
3. Democrats who served as majority (minority) restricted party block-out zone legislators in the *n*th Congress and as majority (minority) restricted block-out zone legislators in the (*n + 1*)th Congress.
4. Republicans who served as majority (minority) party restricted block-out zone legislators in the *n*th Congress and as majority (minority) party restricted block-out zone legislators in the (*n + 1*)th Congress.

The two parties are analyzed separately as they have, quite obviously, different party means. The first two sets of legislators serve as the treatment group and the last two serve as the respective control groups. To keep the number of observations roughly equal, as well as the effects of the greater political environment, control groups are selected immediately before or following a treatment group. For instance, the majority party switched from Republican in the 80th Congress to Democrat in the 81st, but remained Democrat in the 82nd. Therefore, legislators serving both the 80th and 81st Congresses are placed into the treated group, and legislators serving both the 81st and 82nd Congress are placed in the control group.[4] Finally this test is non-parametric and therefore affords more power, as it eases assumptions on the one-dimensional spectrum across time.

Next, to determine whether the distribution of DW-NOMINATE points differs, *ceteris paribus*, for a majority party versus a minority party, I used the Kolmorogov-

[4] See Appendix 1 for a table of the times in which the majority party changes in the House and Senate, 80-110th Congresses.

Smirnov test of the equality of distributions of the four sets of legislators and Senators described above. This test returns the probability (p-value) that two samples of data were generated by the same cumulative distribution function. Therefore, greater differences in both the shape and density of data points result in a greater probability of being drawn from different distribution functions.

In the two-sample case (that which is used here),

$$D_{n,n'} = \sup_x |F_n(x) - F_{n'}(x)|,$$

where we reject the null hypothesis at level α, that the two distributions are the same, if:

$$\sqrt{(nn'/(n + n))}\, D_{n,n'} > K_\alpha$$

To mitigate against noise introduced by single-term legislators present in one of the paired Congresses, I used the modified DW-NOMINATE scores produced by Poole and Nokken (2002); these scores are basically comparable across Congresses as are the original DW-NOMINATE scores, but are computed Congress-by-Congress.[5] While the scores were originally computed to examine changes in legislators' voting behavior following a party switch, the scores work well in this context in that I am looking for changes in legislators' behavior following a switch to minority or majority party status.

My research design is a pattern-matching non-equivalent dependent variable design. I hypothesize that:

- The scores of restricted zone block-out zone members who switch from minority to majority party members will exhibit a decrease in variance and a movement of

[5] First, the authors estimate the DW-NOMINATE model in which every legislator's ideal point is held constant in two dimensions throughout his or her career. Next, the authors hold the resulting roll call outcomes constant and estimate an ideal point for every legislator in every Congress (Nokken and Poole, 2002; p. 12).

the mean away from the floor median and towards the party's anchor point (the most conservative Republican member or the most liberal Democrat member).

- The scores of restricted block-out zone members who switch from majority to minority party members will exhibit an increase in the variance and a movement of the mean towards the floor median.

There are two distinct predictions per each treatment variable (a change to majority status or a change to minority status) and each group, Democrats and Republicans. One concerns the mean score and one concerns the variance. The first step in testing these hypotheses is to determine whether the distributions of those scores changes following a change to majority or minority status. The second step will be to test whether the variances and means change accordingly.

The results of tests for changes in distribution for the House are presented below, followed by the results from the Senate. The smaller the corrected p-value, the more likely it is that the observations were generated by different distribution functions.

Table 1: House Party Block-Out Zones:
Kolmorogov-Smirnov Test of Equality of Distribution Functions of
DW-NOMINATE for Majority and Minority Party Block-Out Zone Legislators

Treatment				Control			
House Democrats, 80th-81st:				**House Democrats, 81st-82nd:**			
Group	D	p	Corrected Min	Group	D	p	Corrected
	.000	1.00		81	.237	.163	
Maj	-.489	0.00		82	-.066	.996	
Combined	.489	.000	.000***	Combined	.237	.324	.073*
House Republicans, 80th-81st:				**House Republicans, 81st-82nd:**			
Group	D	p	Corrected Min	Group	D	p	Corrected
	.348	.001		81	.081	.695	
Maj	-.014	.988		82	.085	.669	
Combined	.348	.001	.001***	Combined	.085	0.988	.980
House Democrats, 82nd-83rd:							
Group	D	p	Corrected Min				
	.015	.985					
Maj	-.212	.051					
Combined	.212	.103	.073*				
House Republicans, 82nd -83rd:							
Group	D	p	Corrected Min				
	.248	.021					
Maj	.000	1.000					
Combined	.248	.043	.028**				

Continued Table 1: House Party Block-Out Zones:
Kolmorogov-Smirnov Test of Equality of Distribution Functions of
DW-NOMINATE for Majority and Minority Party Block-Out Zone Legislators

Treatment				Control			
House Democrats, 83nd-84th:				**House Democrats, 84th-85th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.001	1.00		84	.065	.779	
Maj	-.324	.001		85	-.112	.469	
Combined	.324	.002	.001***	Combined	.112	.844	.793
House Republicans, 83rd -84th:				**House Republicans, 84th-85th:**			
Group	D	p	Corrected	Group	D	p	Corrected
				84	.062	.822	
Min	.156	.225		85	-.502	.000	
Maj	-.038	.917		Combined	.502	.000	.000***
Combined	.156	.445	.370				
House Democrats, 103rd-104th:				**House Democrats, 104th-105th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.104	.468		104	.119	.349	
Maj	-.151	.202		105	-.069	.700	
Combined	.515	.401	.331	Combined	.119	.668	.601
House Republicans, 103rd-104th:				**House Republicans, 104th-105th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.338	.000		104	.139	.181	
Maj	.000	1.000		105	-.014	.983	
Combined	.338	.000	.000***	Combined	.139	.359	.299

Continued Table 1: House Party Block-Out Zones:
Kolmorogov-Smirnov Test of Equality of Distribution Functions of
DW-NOMINATE for Majority and Minority Party Block-Out Zone Legislators

Treatment				Control			
House Democrats, 109th-110th:				**House Democrats, 108th-109th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.013	.986		108	.070	.401	
Maj	-.145	.160		109	-.065	.459	
Combined	.145	.318	.260	Combined	.070	.751	.710
House Republicans, 109th-110th:				**House Republicans, 108th-109th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.207	.021		108	.066	.462	
Maj	-.164	.090		109	-.091	.232	
Combined	.207	.042	.029**	Combined	.091	.459	.409

Table 2: Senate Party Block-Out Zones: Results of Two-Sample Kolmorogov-Smirnov Test for Equality of Distribution Functions of DW-NOMINATE scores for Majority and Minority Party Block-Out Zone Senators

Treatment	Control
Senate Democrats, 80th-81st: Group D p Corrected Min .000 1.00 Maj -.500 .050 Combined .500 .100 .058* **Senate Republicans, 80th-81st:** Group D p Corrected Min .311 .205 Maj -.011 .998 Combined .311 .407 .301	**Senate Democrats, 81st-82nd:** Group D p Corrected 81 .333 .200 82 -.133 .773 Combined .333 .397 .291 **Senate Republicans, 81st-82nd:** Group D p Corrected 81 .404 .074 82 .000 1.000 Combined .404 .148 .092*
Senate Democrats, 82nd-83rd: Group D p Corrected Min .133 .808 Maj -.267 .426 Combined .267 .787 .687 **Senate Republicans, 82nd-83rd:** Group D p Corrected Min .125 .890 Maj -.250 .627 Combined .250 .974 .951	

Continued Table 2: Senate Party Block-Out Zones: Results of Two-Sample Kolmorogov-Smirnov Test for Equality of Distribution Functions of DW-NOMINATE scores for Majority and Minority Party Block-Out Zone Senators

Treatment				Control			
Senate Democrats, 83rd-84th:				**Senate Democrats, 84th-85th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.000	1.000		84	.400	.301	
Maj	-.500	.036		85	-.200	.741	
Combined	.500	.071	.039**	Combined	.400	.586	.461
Senate Republicans, 83rd-84th:				**Senate Republicans, 84th-85th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.057	.981		Min	.674	.007	
Maj	-.800	.024		Maj	-.000	1.000	
Combined	.800	.048	.026**	Combined	.674	.014	.006**
Senate Democrats, 96th-97th:				**Senate Democrats, 95th-96th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.000	1.000		95	.444	.411	
Maj	-.409	.036		96	-.222	.801	
Combined	.409	.073	.042**	Combined	.444	.766	.657
Senate Republicans, 96th-97th:				**Senate Republicans, 95th-96th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.345	.214		95	.500	.368	
Maj	-.202	.589		96	-.250	.779	
Combined	.345	.424	.314	Combined	.500	.699	.637

Continued Table 2: Senate Party Block-Out Zones: Results of Two-Sample Kolmorogov-Smirnov Test for Equality of Distribution Functions of DW-NOMINATE scores for Majority and Minority Party Block-Out Zone Senators

Treatment				Control			
Senate Democrats 99th-100th:				**Senate Democrats, 98th-99th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.010	.998		Min	.310	.350	
Maj	-.210	.375		Maj	-.119	.856	
Combined	.210	.711	.613	Combined	.310	.670	.551
Senate Republicans, 99th-100th:				**Senate Republicans, 98th-99th:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.136	.700		Min	.167	.859	
Maj	-.206	.444		Maj	-.267	.678	
Combined	.206	.811	.726	Combined	.267	.990	.981
Senate Democrats, 103rd-104th:				**Senate Democrats, 102nd-103rd:**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.121	.735		Min	.050	.949	
Maj	-.186	.479		Maj	-.182	.500	
Combined	.186	.855	.784	Combined	.182	.879	.816
Senate Republicans, 103rd-104th:				**Senate Republicans, 102nd-103rd**			
Group	D	p	Corrected	Group	D	p	Corrected
Min	.279	.220		Min	.162	.618	
Maj	-.000	1.000		Maj	-.050	.955	
Combined	.279	.434	.331	Combined	.162	.970	.945

The results show that, in all treatment cases in the House except for Republicans in the 83rd-84th Congresses and the Democrats in the 103rd-104th and 109th-110th Congresses, the distribution of ideal points within a party's block out zone changes significantly following a switch in majority party status, even after controlling for changes in membership. Also, only two control cases in the House exhibited a significant change: Republicans in the 84th-85th Congresses and Democrats in the 81st-82nd Congresses. This suggests that majority party agenda control affects the appearance of ideology in the House though the selectively restricted menu of roll call votes. Further, one may see from the kernel density plots below that not only are the distributions different, but the distribution of majority party block-out zone DW-NOMINATE scores is always tighter than those of the minority party block-out zone, and usually shifted to the left for Democrats and to the right for Republicans:

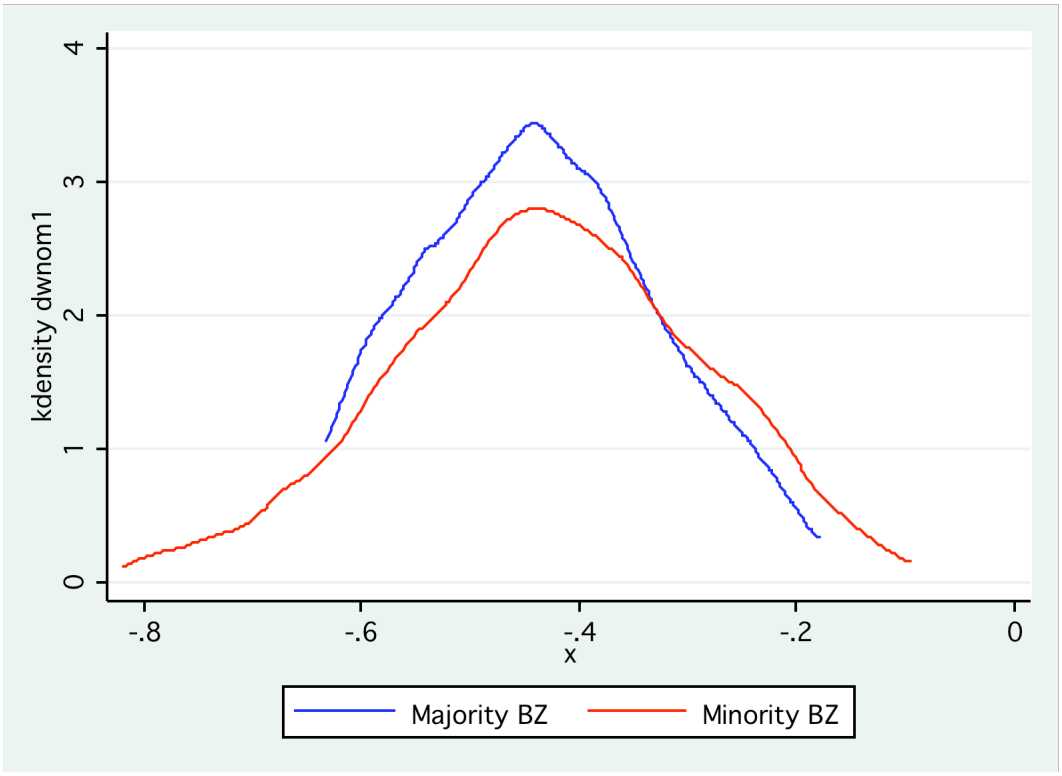


Figure 4: House Democrats Block-Out Zones DW-NOMINATE Scores, 109th-110th Congresses

Figure 5: House Republicans Block-Out Zones DW-NOMINATE Scores, 109th-110th Congresses

Figure 6: House Democrats Block-Out Zones DW-NOMINATE Scores, 103rd-104th Congresses

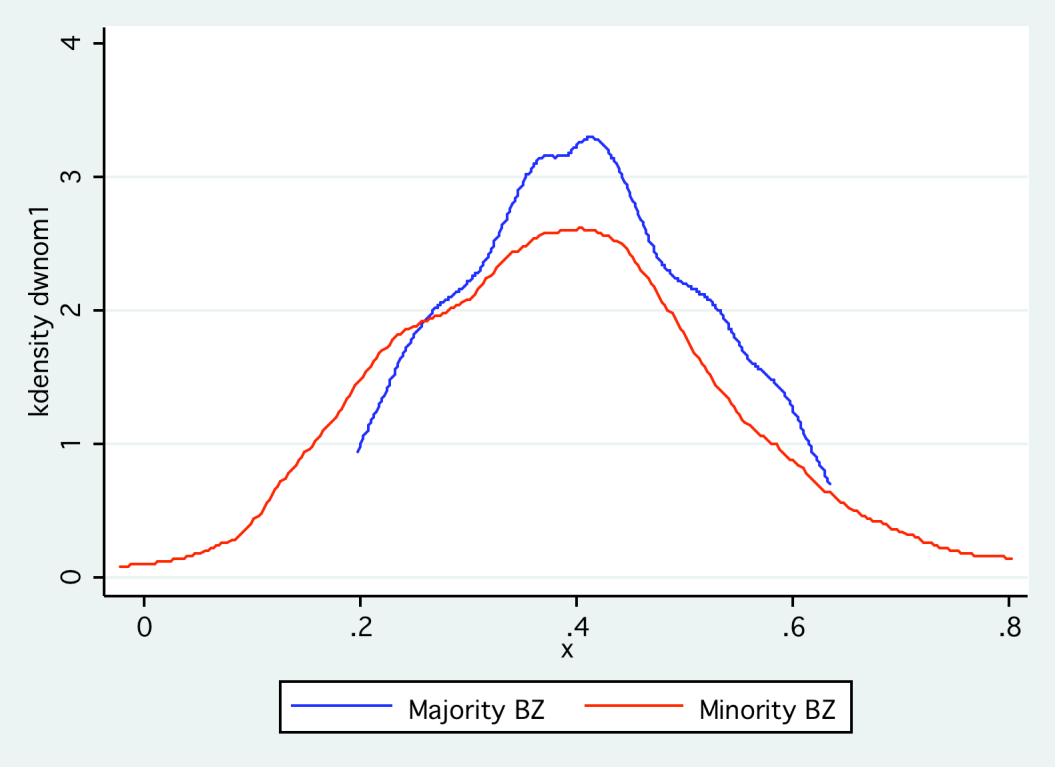


Figure 7: House Republicans Block-Out Zones DW-NOMINATE Scores, 103rd-104th Congresses

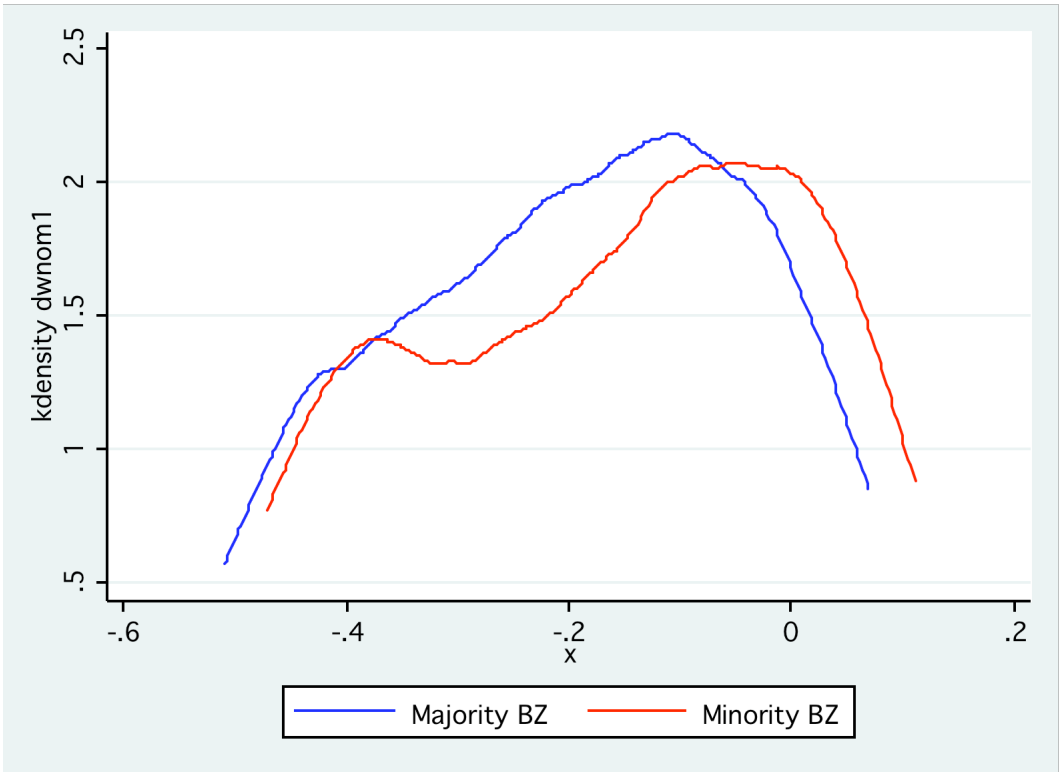


Figure 8: House Democrats Block-Out Zones DW-NOMINATE Scores, 82nd-84th Congresses

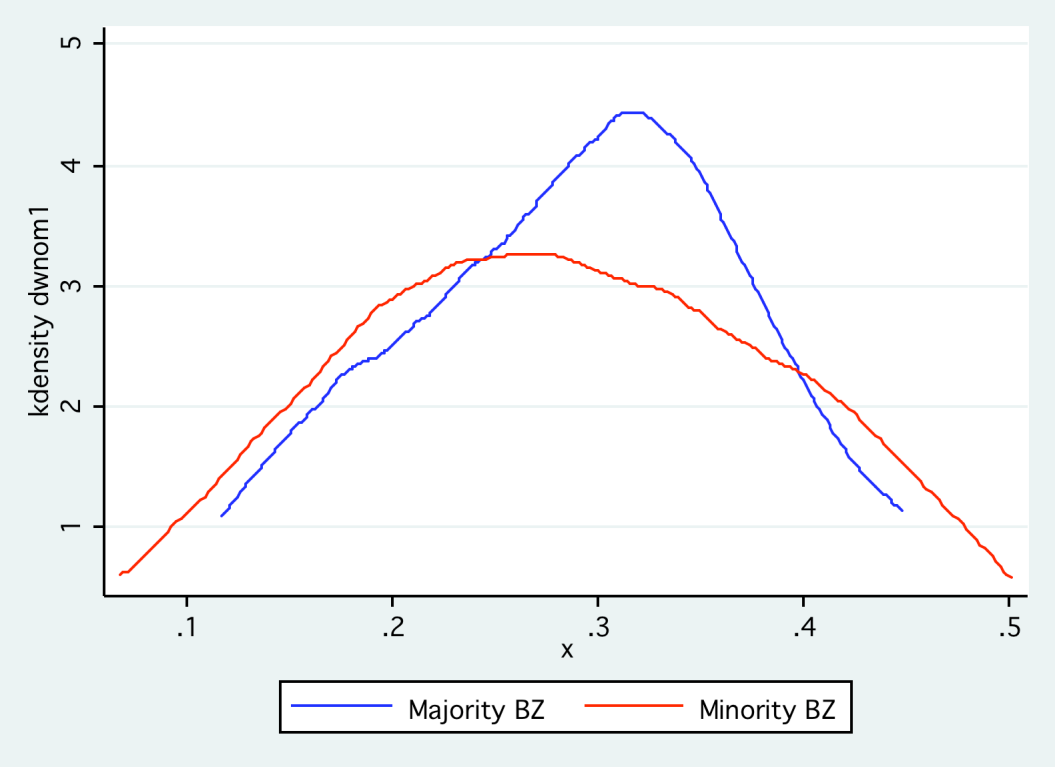


Figure 9: House Republicans Block-Out Zones DW-NOMINATE Scores, 82nd-84th Congresses

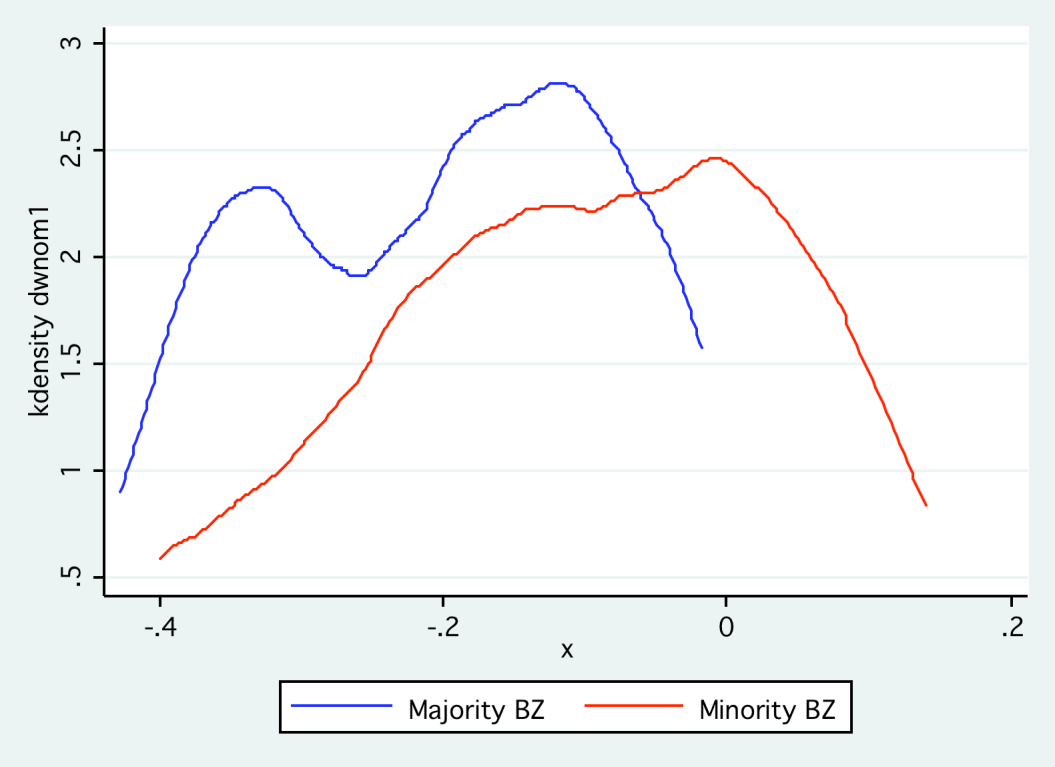


Figure 10: House Democrats Block-Out Zones DW-NOMINATE Scores, 80th-81st Congresses

Figure 11: House Republicans Block-Out Zones DW-NOMINATE Scores, 80th-81st Congresses

Next, the Senate did not exhibit significant changes in its party block-out zones following a switch in majority party. This is unsurprising as the Senate Majority Party Leader enjoys less control over the floor agenda than does the Speaker in the House. Therefore, the appearance of ideology via DW-NOMINATE should be less affected by changes in majority party status as the menu of floor votes is less affected by changes in majority party. Again, however, these tests examined DW-NOMINATE scores calculated on *all* votes, rather than only final passage votes, so it may be the case that the party block-out zones do, in fact, behave differently with respect to those votes in the Senate as well.

1.8 Test II

In this section, I delve further into the changes in distribution points due to a change in majority status by using parametric tests on the populations described above. It is appropriate to consider these tests in the context of the evidence provided by the nonparametric test already performed. Due to the changing nature of the artificial unit constraint imposed upon DW-NOMINATE scores, it is important that these results be taken in tandem with the evidence suggested by the Kolmogorov-Smirnov tests presented above.

First, I use a t-test to determine whether the mean DW-NOMINATE score of a group of majority party legislators serving in the restricted block-out zone is significantly different from that same group when serving as minority members. Similarly, I use the t-test to examine changes in the means for my control group, restricted block-out zone members who serve in consecutive congresses in which there is no change in majority status.

Second, I perform an F-test to determine whether the variance legislator DW-NOMINATE scores within the party block-out zones changes following a change in majority status. Again, I perform the same test on my control groups to determine whether a change in variance merely follows a change in Congress.

Below are the results of both tests. I present results from the House first and also present treatment groups before control groups. I denote majority status next to the Congress with “M” and minority status with “m”.

Table 3: Comparison of Mean Restricted Block-Out Zone DW-NOMINATE Scores, HOUSE TREATMENT GROUPS

Party	Congress	Obs.	Mean	Std. Dev	t-statistic	f-statistic
Dem	80 (m) 81 (M)	114 96	-.103 -.202	.141 .120	5.478***	1.377
Rep	80(M) 81 (m)	108 142	.292 .282	.079 .127	-.6985	.387***
Dem	82 (M) 83 (m)	60 71	-.059 -.035	.080 .083	-1.658*	.914
Rep	82 (m) 83 (M)	66 46	.193 .208	.059 .048	-1.474	1.491
Dem	83 (m) 84 (M)	71 60	-.035 .096	.083 .078	4.317***	1.143
Rep	83 (M) 84 (m)	46 56	.208 .201	.048 .053	.749	.812
Dem	103 (M) 104 (m)	50 97	-.249 -.240	.051 .122	-.514	.179***
Rep	103 (m) 104 (M)	81 78	.267 .328	.087 .064	-4.963***	1.845**
Dem	109 (m) 110 (M)	96 69	-.320 -.329	.081 .061	.810	1.736**
Rep	109 (M) 110 (m)	93 92	.433 .415	.049 .084	1.789*	.333***

Table 4: Comparison of Mean Restricted Block-Out Zone DW-NOMINATE Scores, HOUSE CONTROL GROUPS

Party	Congress	Obs.	Mean	Std. Dev	t-statistic	f-statistic
Dem	81 (M) 82 (M)	49 56	-.113 -.081	.075 .103	-1.828*	.526**
Rep	81(m) 82 (m)	62 51	.180 .189	.012 .011	-.523	1.284
Dem	84 (M) 85 (M)	62 58	-.036 -.046	.124 .126	.450	.965
Rep	84 (m) 85 (m)	64 43	.201 .137	.068 .093	4.095***	.533**
Dem	104 (m) 105 (m)	80 69	-.269 -.258	.103 .112	-.622	.853
Rep	104 (M) 105 (M)	90 87	.329 .346	.006 .007	-1.790*	.967
Dem	108 (m) 109 (m)	82 91	-.297 -.329	.081 .077	2.660***	1.1212
Rep	108 (M) 109 (M)	90 102	.413 .434	.007 .005	-2.544**	1.690**

Table 5: Comparison of Mean Restricted Block-Out Zone DW-NOMINATE Scores, SENATE TREATMENT GROUPS

Party	Congress	Obs.	Mean	Std. Dev	t-statistic	f-statistic
Dem	80 (m)	12	-.005	.050	2.854**	.685
	81 (M)	12	-.069	.060		
Rep	80 (M)	15	.220	.065	1.644	.531
	81 (m)	18	.174	.089		
Dem	82 (M)	10	-.013	.071	-.695	.815
	83 (m)	15	.008	.079		
Rep	82 (m)	8	.193	.060	.887	5.746**
	83 (M)	7	.171	.025		
Dem	83 (m)	15	.008	.079	2.933**	.955
	84 (M)	12	-.082	.080		
Rep	83 (M)	7	.171	.025	-2.677**	.311
	84 (m)	5	.225	.045		
Dem	96 (M)	18	-.227	.059	-2.273**	.467
	97 (m)	12	-.173	.087		
Rep	96 (m)	14	.058	.109	-.852	2.895*
	97 (M)	12	.088	.064		
Dem	99 (m)	25	-.237	.094	1.316	1.766
	100 (M)	20	-.270	.071		
Rep	99 (M)	17	.114	.089	-.075	.560
	100 (m)	22	.116	.119		
Dem	103 (M)	19	-.290	.048	-.0732	.352**
	104 (m)	24	-.275	.082		
Rep	103 (m)	20	.182	.133	-.1426	1.534
	104 (M)	19	.238	.108		
Dem	106 (m)	16	-.278	.085	.588	.889
	107 (M)	16	-.297	.091		
Rep	106 (M)	21	.308	.070	2.091**	.348**
	107 (m)	15	.242	.119		
Dem	107 (M)	16	-.297	.091	.218	.954
	108 (m)	14	-.304	.093		
Rep	107 (m)	15	.242	.119	-1.217	1.799
	108 (M)	20	.285	.089		
Dem	109 (m)	16	-.296	.089	.946	.863
	110 (M)	22	-.325	.096		
Rep	109 (M)	23	.289	.087	-1.266	1.445
	110 (m)	18	.322	.072		

Table 6: Comparison of Mean Restricted Block-Out Zone DW-NOMINATE Scores, SENATE CONTROL GROUPS

Party	Congress	Obs	Mean	Std. Dev	t-statistic	f-statistic
Dem	81 (M) 82 (M)	14 15	-.073 -.050	.058 .079	-.913	.532
Rep	81 (m) 82 (m)	15 17	.157 .225	.095 .080	-2.193**	1.411
Dem	84 (M) 85 (M)	10 6	-.080 -.038	.106 .068	-.853	2.411
Rep	84 (m) 85 (m)	9 17	.234 .362	.074 .087	-3.758***	.735
Dem	95 (M) 96 (M)	3 9	-.221 -.216	.042 .065	-.130	.412
Rep	95 (m) 96 (m)	4 4	.059 .105	.137 .124	-.495	1.235
Dem	98 (m) 99 (m)	14 9	-.194 -.178	.084 .096	-.440	.758
Rep	98 (M) 99 (M)	5 6	.098 .080	.087 .099	.327	.787
Dem	102 (M) 103 (M)	20 22	-.271 -.285	.044 .048	.966	.839
Rep	102 (m) 103 (m)	17 20	.129 .153	.128 .127	-.570	1.015
Dem	108 (m) 109 (m)	16 22	-.296 -.325	.089 .096	.946	.863
Rep	108 (M) 109 (M)	23 18	.289 .322	.087 .072	-1.266	1.445

The evidence from the parametric tests is mixed, at best. In five of the ten treatment cases, the mean DW-NOMINATE score of a restricted block-out zone legislator changed significantly following a change in majority status. However, five of eight control cases also showed a significant change in mean DW-NOMINATE score following a change in Congress. Similarly, half of the treatment cases showed a positive

change in the variance of restricted block-out zone DW-NOMINATE scores, while three of eight control cases showed a significant change in variance.

In four of the five significant shifts in mean DW-NOMINATE scores for the House, the mean score of legislators serving in the restricted block-out zone became more partisan; that is, the mean shifted left for Democrats and right for Republicans. However, Democrats in the 83rd-84th Congresses became more centrist in the 84th Congress, after they had regained majority control.

In all five treatment cases where variance was significantly different following a shift from or to majority status, the standard deviation of restricted block-out zone legislators' scores was smaller than their scores while serving as minority members. While not compelling evidence, it is interesting to note that in the three control cases which showed significant changes in both mean score and variance, a more centrist mean implied a greater variance.

In the Senate, as before, the evidence is also mixed. Only five of the eighteen treatment cases exhibited a significant shift in mean score compared to two of twelve control cases. Four of eighteen treatment cases exhibited a significant shift in variance compared to no control cases. However, all treatment cases which exhibited a significant shift in variance showed a smaller standard deviation in scores for Senators serving in the majority party.

Finally, these results suggest a further avenue of research: the changing composition of the restricted block-out zone. Though data was first restricted to consecutively-serving Congress members, the composition of the restricted block-out zone was allowed to fluctuate as defined by the DW-NOMINATE medians. That is, a

House member who served in both the 80th and 81st Congress may have been located in the restricted block-out zone in the 80th Congress but not the 81st. Her score was then included in the analysis of the 80th Congress but not the 81st.

1.9 Conclusions

With respect to the House, legislators who served in the *n*th Congress as majority members in their party's block-out zone, looked ideologically dissimilar *from themselves* in previous or following Congresses in which they served as minority members. Conversely, this effect was not present for legislators who served as majority (or minority) legislators in two consecutive Congresses. Also, as is evidenced by the Kolmorogov-Smirnov tests presented in Appendix 2, these changes in ideological distribution cannot be attributed to coincidence of changes in the political landscape, as the overall party distributions did *not* change following a switch in majority status.

Appendix 1: Changes in Majority Party, 80th-110th Congresses: House and Senate Treatment and Control Groups

Congress	Years	Majority Party House	Majority Party Senate
80	1947-1949	Republican	Republican
81	1949-1951	Democrat	Democrat
82	1951-1953	Democrat	Democrat
83	1953-1955	Republican	Republican
84	1955-1957	Democrat	Democrat
85	1957-1959	Democrat	Democrat
86	1959-1961	Democrat	Democrat
87	1961-1963	Democrat	Democrat
88	1963-1965	Democrat	Democrat
89	1965-1967	Democrat	Democrat
90	1967-1969	Democrat	Democrat
91	1969-1971	Democrat	Democrat
92	1971-1973	Democrat	Democrat
93	1973-1975	Democrat	Democrat
94	1975-1977	Democrat	Democrat
95	1977-1979	Democrat	Democrat
96	1979-1981	Democrat	Democrat
97	1981-1983	Democrat	Republican
98	1983-1985	Democrat	Republican
99	1985-1987	Democrat	Republican
100	1987-1989	Democrat	Democrat
101	1989-1991	Democrat	Democrat
102	1991-1993	Democrat	Democrat
103	1993-1995	Democrat	Democrat
104	1995-1997	Republican	Republican
105	1997-1999	Republican	Republican
106	1999-2001	Republican	Republican
107	2001-2003	Republican	Democrat*
108	2003-2005	Republican	Republican
109	2005-2007	Republicans	Republican
110	2007-2009	Democrat	Democrat

A control group consists of at least two consecutive Congresses during which there was no change in majority party.
A treatment group consists of at least two consecutive Congresses during which there was a change in majority party.
Therefore, Representatives serving both the 108th and 109th Congress are included into Control Group 5; while Representatives serving both the 109th and 110th Congresses are included in the Treatment Group 5.

*In the 107th Congress, the Democrats held 50 seats as did Republicans. From January 3, 2001, outgoing Vice President Gore gave the Democrats majority party status; from January 20, 2001 until May 23, 2001, Vice President Cheney gave Republicans majority status. On May 24, 2001, Senator Jeffords of Vermont left the Republian party to become an independent, choosing to caucus with the Democrats, again giving majority party status to the Democrats.

Appendix 2: Kolmorogov-Smirnov Results for All Consecutively Serving LegislatorsHouse Results of the Two-Sample Kolmorogov-Smirnov Test of Equality of Distribution Functions for All Consecutively-Serving Representatives

Treatment	Control
House Democrats, 80th-81st:	**House Democrats, 81st-82nd:**
Group D p Corrected Min .084 .334 Maj -.007 .994 Combined .084 .643 .592	Group D p Corrected 81 .000 1.000 82 -.148 .003 Combined .148 .066 .05*
House Republicans, 80th-81st:	**House Republicans, 81st-82nd:**
Group D p Corrected Min .090 .285 Maj -.045 .730 Combined .090 .556 .503	Group D p Corrected 81 .095 .256 82 -.048 .705 Combined .095 .503 .449
House Democrats, 82nd-84th:	**House Democrats, 84th-85th:**
Group D p Corrected Min .048 .641 Maj -.058 .519 Combined .058 .090 .875	Group D p Corrected 84 .082 .154 85 -.023 .862 Combined .082 .307 .271
House Republicans, 82nd-84th:	**House Republicans, 84th-85th:**
Group D p Corrected Min .048 .641 Maj -.058 .519 Combined .058 .899 .875	Group D p Corrected 84 .058 .469 85 -.099 .106 Combined .099 .212 .180

Continued Appendix 2: Kolmorogov-Smirnov Results for All Consecutively Serving LegislatorsHouse Results of the Two-Sample Kolmorogov-Smirnov Test of Equality of Distribution Functions for All Consecutively-Serving Representatives

Treatment	Control
House Democrats, 103rd-104th:	**House Democrats, 104th-105th:**
Group D p Corrected Min .068 .413 Maj -.042 .715 Combined .068 .768 .729	Group D p Corrected 104 .024 .907 105 -.098 .210 Combined .098 .416 .366
House Republicans, 103rd-104th:	**House Republicans, 104th-105th:**
Group D p Corrected Min .096 .239 Maj -.006 .471 Combined .096 .471 .418	Group D p Corrected 104 .098 .157 105 -.010 .980 Combined .097 .313 .271
House Democrats, 109th-110th:	**House Democrats, 108th-109th:**
Group D p Corrected Min .037 .774 Maj -.089 .220 Combined .089 .436 .388	Group D p Corrected 108 .070 .401 109 -.065 .459 Combined .070 .751 .710
House Republicans, 109th-110th:	**House Republicans, 108th-109th:**
Group D p Corrected Min .075 .353 Maj -.128 .047 Combined .128 .093 .075	Group D p Corrected 108 .063 .444 109 -.058 .500 Combined .063 .811 .778

Continued Appendix 2
Senate Results of Two-Sample Kolmorogov-Smirnov Test for Equality of Distribution Functions for All Consecutively-Serving Senators

Treatment	**Control**
Senate Democrats, 80th-81st: Group D p Corrected Min .051 .903 Maj -.051 .903 Combined .051 1.00 1.00 **Senate Republicans, 80th-81st:** Group D p Corrected Min .077 .794 Maj -.051 .903 Combined .077 1.00 1.00	**Senate Democrats, 81st-82nd:** Group D p Corrected 81 .095 .683 82 -.071 .807 Combined .095 .991 .984 **Senate Republicans, 81st-82nd:** Group D p Corrected 81 .079 .789 82 -.079 .789 Combined .079 1.00 1.00
Senate Democrats, 82nd-84th: Group D p Corrected Min .103 .619 Maj -.088 .703 Combined .103 .970 .951 **Senate Republicans, 82nd-84th:** Group D p Corrected Min .156 .353 Maj -.125 .513 Combined .156 .675 .590	**Senate Democrats, 84th-85th:** Group D p Corrected 84 .050 .951 85 -.200 .449 Combined .200 .819 .739 **Senate Republicans, 84th-85th:** Group D p Corrected 84 .174 .499 85 -.130 .676 Combined .174 .878 .816

Continued Appendix 2
Senate Results of Two-Sample Kolmorogov-Smirnov Test for Equality of Distribution Functions for All Consecutively-Serving Senators:

Treatment	Control
Senate Democrats, 96th-97th: Group D p Corrected Min .159 .328 Maj -.114 .567 Combined .159 .634 .550 **Senate Republicans, 96th-97th:** Group D p Corrected Min .108 .649 Maj -.108 .649 Combined .108 .982 .969	**Senate Democrats, 95th-96th:** Group D p Corrected 95 .167 .469 96 -.160 .497 Combined .167 .843 .774 **Senate Republicans, 95th-96th:** Group D p Corrected 95 .143 .788 96 -.171 .710 Combined .171 .995 .989
Senate Democrats, 99th-100th: Group D p Corrected Min .047 .911 Maj -.116 .559 Combined .116 .933 .900 **Senate Republicans, 99th-100th:** Group D p Corrected Min .114 .567 Maj -.091 .695 Combined .114 .939 .908	**Senate Democrats, 98th-99th:** Group D p Corrected 98 .126 .685 99 -.276 .162 Combined .276 .323 .235 **Senate Republicans, 98th-99th:** Group D p Corrected 98 .106 .772 99 -.053 .937 Combined .106 1.00 .999

Continued Appendix 2
Senate Results of Two-Sample Kolmorogov-Smirnov Test for Equality of Distribution Functions for All Consecutively-Serving Senators:

Treatment	Control
Senate Democrats, 103rd-104th:	**Senate Democrats, 102nd-103rd:**
Group D p Corrected Min .167 .264 Maj -.042 .920 Combined .167 .518 .434	Group D p Corrected 102 .083 .717 103 -.083 .717 Combined .083 .996 .993
Senate Republicans, 103rd-104th:	**Senate Republicans, 102nd-103rd:**
Group D p Corrected Min .122 .543 Maj -.073 .803 Combined .122 .921 .882	Group D p Corrected 102 .079 .789 103 -.079 .789 Combined .079 1.00 1.00
Senate Democrats, 106th-108th:	**Senate Democrats: 108th-109th:**
Group D p Corrected Min .079 .729 Maj -.079 .729 Combined .079 .997 .995	Group D p Corrected 108 .095 .683 109 -.095 .683 Combined .095 .991 .984
Senate Republicans, 106th-108th:	**Senate Republicans, 108th-109th:**
Group D p Corrected Min .075 .741 Maj -.213 .090 Combined .213 .180 .130	Group D p Corrected 108 .163 .271 109 -.041 .922 Combined .163 .531 .448

Continued Appendix 2
Senate Results of Two-Sample Kolmorogov-Smirnov Test for Equality of Distribution Functions for All Consecutively-Serving Senators:

Treatment	Control
Senate Democrats, 109th-110th: Group D p Corrected Min .091 .675 Maj -.062 .832 Combined .091 .989 .982 **Senate Republicans, 109th-110th:** Group D p Corrected Min .050 .876 Maj -.109 .530 Combined .109 .909 .871	

Chapter 2: Agenda Control and DW-NOMINATE Misclassification Error

2.1 Introduction.

In this chapter, I extend my analysis of the effects of agenda control on DW-NOMINATE scores and examine the probability of a misclassification error for legislators who are in the party block-out zones. Here, I first explain the nature and history of the spatial model. I then discuss the DW-NOMINATE model and its predictions concerning correct classification of legislators' votes and the attending hypotheses for spatial models of Congress. Finally, I examine the same legislators as described in Chapter 1, and use the logit model to determine the effect of majority status on the probability of a misclassification error. I find that the probability that a Representative's vote is misclassified by DW-NOMINATE is significantly lower for members serving in the majority party's block-out zone than it is for those in the minority party's block-out zone. Further, the evidence for the Senate regarding the misclassification errors is mixed, which comports with the lower degree of agenda control enjoyed by the Senate majority party leadership.

2.2 Background.

The spatial model, upon which much economic, political science and psychometric literature is based, presumes that legislators have a preferred policy, and alternatives to that policy may be ordered in terms of most similar to the ideal policy to least similar. Hotelling (1929) first articulated the theory of spatial competition in a duopoly setting, paving the way for game-theoretic studies and the subgame-perfect equilibrium concept. His work concerned the optimal spatial location of two firms in a

defined geographic area; namely, the median location in all dimensions. This work was then applied by Black (1948) and Downs (1957) to the theory of voting.

Black (1948) and Downs (1957) articulated the median voter theorem, which theorizes that political alternatives may be mapped spatially according to a legislator or voter's preferences. That is, a voter most prefers one policy, and alternatives to that policy may be rank-ordered in terms of most preferred to least preferred. If those alternatives are mapped onto a single dimension, and two alternatives are pitted against each other in a majority-voting setting, the policy closest to the median voter's most preferred policy (or ideal point) will prevail.

While mathematically appealing, psychometricians have since studied humans' ability to distinguish between similar alternatives and found that when two alternatives are very similar, humans have difficulty determining which alternative is closest to his or her ideal point (Coombs, 1964). Therefore, in the majority-voting context, "errors" may occur wherein the median voter votes for policy A which is actually somewhat further away from his or her ideal point than policy B.

Poole and Rosenthal (2008, pp. 24-25) note this effect in discussing their model's ability to correctly classify, or predict, legislators' votes:

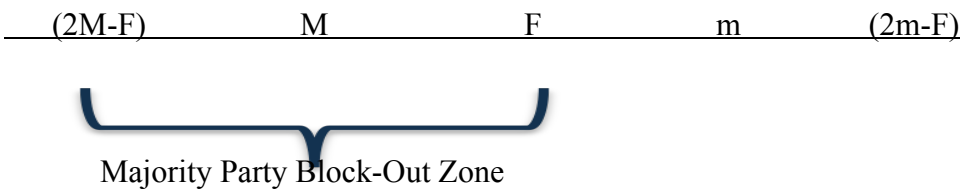
> If one alternative is at the legislator's ideal point and the other is very far from it, he has a probability of one of voting for the closer alternative. At the other extreme, if the alternatives are equidistant from him, the legislator acts as if he based his decision on a coin toss.

2.3 Agenda Control and DW-NOMINATE Classification Errors

As described in Chapter 1, legislators near the cutting line, or the line dividing the yays from nays, are nearly equidistant from the two proposed alternatives. Therefore, those legislators are more likely to be misclassified; that is, DW-NOMINATE is more likely to incorrectly predict those legislators' votes.

As in Chapter 1, we may derive hypotheses from the median voter theorem and the majority gate-keeping models of Congress. In a party-less Congress, or a Congress in which the majority party is unable to exercise gate-keeping control over the legislative agenda, we would expect the distribution of cutting lines to depend only upon the distribution of status quos relative to the distribution of legislator ideal points. Therefore, merely moving from Congress to Congress may change a legislator's incidence of being incorrectly classified by DW-NOMINATE; however, we have no prediction on whether he or she will be more often misclassified or less often.

The gate-keeping model suggests that the majority party will not allow votes on policies whose status quos reside in the majority party's block-out zone, {2M-F, F}. Recall from Chapter 1, that under a Democratic Congress, this would look like the following:



Also, as discussed in Chapter 1, the gate-keeping model suggests that a greater number of cutpoints will reside in the minority party block-out zone (F, 2m-F) than in the

majority party block-out zone. However, while status quos residing in the majority party block-out zone will be blocked from a vote on the floor, cutpoints may still fall within the majority party's block-out zone, in the (2M-F, F) region as votes on status quos located to the left of (2M-F) in the example of above could generate a cutpoint within the (2M-F, F) region, where a majority of the majority party would favor a move to the median voter, but members within the block-out zone would prefer the status quo policy located outside of the block-out zone.

2.4 Hypotheses

Therefore, if the gate-keeping model of Congress is correct, we have clear predictions on the frequency with which a member is misclassified. Specifically,

- The misclassification rate, or ratio of misclassified votes to correctly classified votes, will increase following a change in minority status to majority status.
- The misclassification rate of a member of the minority party restricted block-out zone will increase following a change in majority status to minority status.
- Within each Congress, members of the restricted majority party block-out zone will be misclassified less often than legislators in the minority party block-out zone.

I test these hypotheses on the four groups as defined in Chapter 1:

1. Democrats who served as majority party restricted block-out zone legislators in the *n*th Congress and as minority party legislators in the (*n* + *1*)th Congress.
2. Republicans who served as majority-party restricted block-out zone legislators in the *n*th Congress and as minority legislators in the (*n* + *1*)th Congress.

3. Democrats who served as majority (minority) restricted party block-out zone legislators in the *n*th Congress and as majority (minority) restricted block-out zone legislators in the (*n + 1*)th Congress.
4. Republicans who served as majority (minority) party restricted block-out zone legislators in the *n*th Congress and as majority (minority) party restricted block-out zone legislators in the (*n + 1*)th Congress.

Again, as in Chapter 1, I allow membership to the restricted block-out zones to fluctuate as determined by the floor and party medians, including all those who serve within that zone in a given Congress and exclude all those who are not located within these zones. Therefore, while only those legislators who served in both Congresses may be included, they did not have to serve in the block-out zone in both Congresses.

2.5 Methods and Results

To analyze the effect of membership in the majority party block-out zone versus the minority party block-out zone, I use a logit regression to determine the probability with which a member's vote is misclassified by the DW-NOMINATE model.

Results of the logit regression are below; Congresses in which there was a change are denoted (T) and the independent variable is majority status. Congresses during which there was no change in majority status are denoted (C) and the independent variable is Congress:

Table 7: Logit Results, Effect of Change in Majority Status on Probability of DW-NOMINATE Misclassification in the House

Cong	Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
80-81 (T)	Dem	Majstat Constant	-.171*** -1.94	.032 .023	.000 .000	-13733.521 (38369 obs)
80-81 (T)	Rep	Majstat Constant	-.445*** -1.797	.033 .016	.000 .000	-17134.682 (45190 obs)
81-82 (C)	Dem	Congress Constant	.062** -7.204	.028 2.26	.024 .001	-18778.856 (54692 obs)
81-82 (C)	Rep	Congress Constant	-.003 -1.552	.027 2.19	.915 .479	-19828.468 (48197 obs)
82-84 (T)	Dem	Majstat Constant	-.268*** -1.585	.029 .023	.000 .000	-17802.361 (45494 obs)
82-84 (T)	Rep	Majstat Constant	-.373*** -1.617	.031 .015	.000 .000	-19512.972 (45790 obs)
84-85 (C)	Dem	Congress Constant	.10*** -10.269	.028 2.333	.000 .000	-19171.562 (48839 obs)
84-85 (C)	Rep	Congress Constant	-.117*** 8.447	.025 2.119	.000 .000	-20729.75 (43011 obs)
103-104 (T)	Dem	Majstat Constant	-.366*** -1.91	.012 .007	0.000 0.000	-115751.7 (323336 obs)
103-104 (T)	Rep	Majstat Constant	-.489*** -2.030	.013 .008	0.000 0.000	-94430.207 (304299 obs)
104-105 (C)	Dem	Congress Constant	.042*** -6.269	.012 1.10	0.000 0.000	-124044.21 (326731 obs)
104-105 (C)	Rep	Congress Constant	.213*** -24.70	.012 1.30	0.000 0.000	-97527.915 (342641 obs)

Continued Table 7: Logit Results, Effect of Change in Majority Status on Probability of DW-NOMINATE Misclassification in the House

Cong	Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
108-109 (C)	Dem	Congress Constant	.036** -6.331	.124 1.347	0.003 0.000	-97501.96 (338268 obs)
108-109 (C)	Rep	Congress Constant	.280*** -33.017	.014 1.533	0.000 0.000	--79618.817 (318414 obs)
109-110 (T)	Dem	Majstat Constant	-1.022*** -2.373	.013 .009	0.000 0.000	-88178.099 (436223 obs)
109-110 (T)	Rep	Majstat Constant	-.107*** -2.366	.011 .007	0.000 0.000	-120752.39 (423157 obs)

Table 8: Logit Results, Effect of Change in Majority Status on Probability of DW-NOMINATE Misclassification in the Senate

Cong	Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
80-81 (T)	Dem	Majstat Constant	-.496*** -1.484	.052 .040	.000 .000	-5059.981 (12490 obs)
80-81 (T)	Rep	Majstat Constant	-.448*** -1.522	.045 .024	.000 .000	-7795.743 (17941 obs)
81-82 (C)	Dem	Congress Constant	.224*** -10.127	.047 3.797	.000 .000	-6296.245 (16035 obs)
81-82 (C)	Rep	Congress Constant	-.162*** -11.594	.040 3.27	.000 .000	-8744.845 (19373 obs)
82-84 (T)	Dem	Majstat Constant	-.152*** -1.659	.045 .034	.001 .000	-6750.833 (16109 obs)
82-84 (T)	Rep	Majstat Constant	-.296*** -1.719	.053 .027	.000 .000	-6249.23 (15365 obs)
84-85 (C)	Dem	Congress Constant	.10*** -10.269	.028 2.333	.000 .000	-19171.562 (48839 obs)
84-85 (C)	Rep	Congress Constant	-.117*** 8.447	.025 2.119	.000 .000	-20729.75 (43011 obs)
95-96 (C)	Dem	Congress Constant	-.029*** -1.20	.021 2.05	0.179 0.559	-27908.682 (60278 obs)
95-96 (C)	Rep	Congress Constant	-.144*** -15.312	.024 2.276	0.000 0.000	-22704.731 (49164 obs)
96-97 (T)	Dem	Majstat Constant	.045** -1.671	.021 .015	0.038 0.000	-27534.631 (62365 obs)
96-97 (T)	Rep	Majstat Constant	-.328*** -24.70	.025 .016	0.000 0.000	-22352.877 (51601 obs)

Continued Table 8: Logit Results, Effect of Change in Majority Status on Probability of DW-NOMINATE Misclassification in the Senate

Cong	Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
99-100 (T)	Dem	Majstat Constant	-.489*** -1.569	.026 .016	0.000 0.000	-20698.378 (50355 obs)
99-100 (T)	Rep	Majstat Constant	-.057** -1.684	.026 .018	0.028 0.000	-19524.509 (45610 obs)
100-101 (C)	Dem	Congress Constant	.457*** -47.807	.027 2.756	0.000 0.000	-18187.523 (47718 obs)
100-101 (C)	Rep	Congress Constant	.018 -3.471	.027 2.705	0.499 0.199	-18141.365 (40932 obs)
102-103 (C)	Dem	Congress Constant	-.300*** 28.800	.029 2.983	0.000 0.000	-16314.087 (43810 obs)
102-103 (C)	Rep	Congress Constant	-.102*** 8.586	.029 2.970	0.000 0.004	-16390.017 (41144 obs)
103-104 (T)	Dem	Majstat Constant	.-274*** -1.822	.025 .015	0.000 0.000	-23573.629 (62098 obs)
103-104 (T)	Rep	Majstat Constant	-.479*** -1.951	.029 .019	0.000 0.000	-17283.244 (52861 obs)
108-109 (C)	Dem	Congress Constant	.172*** -21.044	.035 3.836	0.000 0.000	-11991.441 (40783 obs)
108-109 (C)	Rep	Congress Constant	.451*** -51.430	.036 3.923	0.000 0.000	-12034.867 (45593 obs)
109-110 (T)	Dem	Majstat Constant	-.441*** -2.257	.037 .024	0.000 0.000	-11388.626 (41584 obs)
109-110 (T)	Rep	Majstat Constant	-.353*** -1.971	.031 .020	0.000 0.000	-15468.075 (45735 obs)

Clearly, moving into the majority party block-out zone from the minority party block-out zone significantly lowers the probability that a Representative's vote is misclassified by DW-NOMINATE and vice versa. While mere changes in Congress do sometimes affect legislators' probability of being misclassified, the direction of this change is seemingly random and at times insignificant. The coefficients for majority status are all significant and negative, ranging from -.079 for Democrats in the 80^{th}-81^{st} Congresses to -1.032 for Democrats in the 109^{th}-110^{th} Congresses.

For the Senate, all treatment Congresses except for the Democrats in the 82^{nd} -84^{th} and Republicans in the 99^{th}-100^{th} Congresses displayed the same result; moving from the majority party restricted block-out zone to the minority party restricted block-out zone significantly increases the probability that a Senator's votes are misclassified. Similarly, moving from the minority party restricted block-out zone to the majority party restricted block-out zone significant decreases the probability that a Senator's votes are misclassified. Further, the Republican counterparts enjoyed a relatively large drop between those Congresses, which may suggest that the change in Congress affected the result more than majority status. However, it is suggestive that the effect is present in both the House than in the Senate.

To determine the extent of the noise introduced into the logit results by moving from Congress to Congress, I next examine the effect of majority status on the probability of a vote being misclassified by DW-NOMINATE within single Congresses. Again, I use the logit model and examine the effect of majority status on the probability of a vote being misclassified by DW-NOMINATE for legislators located in the majority and

minority party block-out zones (not restricting analysis to consecutively serving legislators).

Table 9: House DW-NOMINATE Misclassifications, All Restricted Block-Out Zone Legislators, by Congress:

Cong	Controlling Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
80	Republicans	Majstat	-.406***	.036	0.000	-11247.806
		Constant	-1.823	.028	0.000	(32510 obs)
81	Democrats	Majstat	-.497***	.027	0.000	-19874.843
		Constant	-1.672	.021	0.000	(54824 obs)
82	Democrats	Majstat	-.364***	.032	0.000	-14248.132
		Constant	-1.666	.025	0.000	(36970 obs)
83	Republicans	Majstat	-.662***	.035	0.000	-11012.382
		Constant	-1.373	.026	0.000	(27155 obs)
84	Democrats	Majstat	-.519***	.033	0.000	-12354.498
		Constant	-1.399	.026	0.000	(29413 obs)
85	Democrats	Majstat	-.421***	.028	0.000	-18146.231
		Constant	-1.413	.022	0.000	(42139 obs)
86	Democrats	Majstat	-.463***	.031	0.000	-15058.026
		Constant	-1.537	.024	0.000	(38037 obs)
87	Democrats	Majstat	-.774***	.032	0.000	-14312.369
		Constant	-1.613	.025	0.000	(42867 obs)
88	Democrats	Majstat	-.899***	.036	0.000	-11365.255
		Constant	-1.625	.027	0.000	(36085 obs)
89	Democrats	Majstat	-.796***	.037	0.000	-10558.87
		Constant	-1.697	.029	0.000	(33566 obs)
90	Democrats	Majstat	-.599***	.033	0.000	-15628.147
		Constant	-1.705	.027	0.000	(47155 obs)
91	Democrats	Majstat	-.315***	.039	0.000	-13025.835
		Constant	-1.744	.034	0.000	(35579 obs)

Continued Table 9: House DW-NOMINATE Misclassifications, All Restricted Block-Out Zone Legislators, by Congress

Cong	Controlling Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
92	Democrats	Majstat	-.134***	.032	0.000	-19277.378
		Constant	-1.637	.029	0.000	(45857 obs)
93	Democrats	Majstat	-.273***	.030	0.000	-27271.202
		Constant	-1.571	.027	0.000	(66965 obs)
94	Democrats	Majstat	-.165***	.038	0.000	-17612.025
		Constant	-1.637	.035	0.000	(42655 obs)
95	Democrats	Majstat	-.149***	.012	0.000	-98900.472
		Constant	-1.572	.010	0.000	(226594 obs)
96	Democrats	Majstat	-.308***	.025	0.000	-23468.705
		Constant	-1.553	.021	0.000	(56587 obs)
97	Democrats	Majstat	-.463***	.062	0.000	-5418.262
		Constant	-1.550	.055	0.000	(14299 obs)
98	Democrats	Majstat	-.677***	.078	0.000	-3052.735
		Constant	-1.526	.068	0.000	(8754 obs)
99	Democrats	Majstat	-.812***	.014	0.000	-65179.848
		Constant	-1.328	.011	0.000	(165548 obs)
100	Democrats	Majstat	-.908***	.015	0.000	-65375.814
		Constant	-1.555	.010	0.000	(194283 obs)
101	Democrats	Majstat	-.728***	.014	0.000	-70480.347
		Constant	-1.515	.010	0.000	(192056 obs)
102	Democrats	Majstat	-.655***	.018	0.000	-41713.99
		Constant	-1.533	.014	0.000	(111659 obs)
103	Democrats	Majstat	-.458***	.013	0.000	-83466.377
		Constant	-1.789	.010	0.000	(239636 obs)
104	Republicans	Majstat	-.882***	.011	0.000	-112124.08
		Constant	-1.621	.008	0.000	(342523 obs)

Continued Table 9: House DW-NOMINATE Misclassifications, All Restricted Block-Out Zone Legislators, by Congress

Cong	Controlling Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
105	Republicans	Majstat	-.531***	.012	0.000	-93855.971
		Constant	-1.794	.009	0.000	(277915 obs)
106	Republicans	Majstat	-.421***	.028	0.000	-18146.231
		Constant	-1.413	.022	0.000	(42139 obs)
107	Republicans	Majstat	-.702***	.016	0.000	-56493.677
		Constant	-1.990	.012	0.000	(200704 obs)

Table 10: Senate DW-NOMINATE Misclassifications, All Restricted Block-out Zone Legislators, by Congress:

Cong	Controlling Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
80	Republicans	Majstat	-.486***	.056	0.000	-4655.721
		Constant	-1.429	.046	0.000	(11273 obs)
81	Democrats	Majstat	-.751***	.042	0.000	-7490.570
		Constant	-1.222	.032	0.000	(17693 obs)
82	Democrats	Majstat	-.233***	.051	0.000	-5432.234
		Constant	-1.543	.040	0.000	(12600 obs)
83	Republicans	Majstat	-.525***	.048	0.000	-6135.886
		Constant	-1.580	.029	0.000	(15162 obs)
84	Democrats	Majstat	-.158**	.058	0.007	-4213.032
		Constant	-1.591	.046	0.000	(9549 obs)
85	Democrats	Majstat	-.128**	.046	0.006	-6406.858
		Constant	-1.686	.030	0.000	(15218 obs)
86	Democrats	Majstat	-.254***	.046	0.000	-6804.809
		Constant	-1.603	.037	0.000	(16462 obs)
87	Democrats	Majstat	-.441***	.041	0.000	-9291.148
		Constant	-1.568	.033	0.000	(22642 obs)
88	Democrats	Majstat	-.201***	.041	0.000	-11740.011
		Constant	-1.759	.033	0.000	(24010 obs)
89	Democrats	Majstat	-.321***	.041	0.000	-8747.778
		Constant	-1.482	.033	0.000	(20420 obs)
90	Democrats	Majstat	-.171***	.037	0.000	-10529.138
		Constant	-1.43	.030	0.000	(22700 obs)
91	Democrats	Majstat	-.297***	.035	0.000	-10797.586
		Constant	-1.451	.026	0.000	(24217 obs)

Continued Table 10: Senate DW-NOMINATE Misclassifications, All Restricted Block-Out Zone Senators, by Congress

Cong	Controlling Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
92	Democrats	Majstat	-.274***	.029	0.000	-18232.759
		Constant	-1.506	.023	0.000	(42350 obs)
93	Democrats	Majstat	-.424***	.026	0.000	-22070.22
		Constant	-1.416	.021	0.000	(51760 obs)
94	Democrats	Majstat	-.239***	.026	0.000	-22653.665
		Constant	-1.592	.021	0.000	(54233 obs)
95	Democrats	Majstat	-.091***	.025	0.000	-23233.266
		Constant	-1.450	.020	0.000	(49164 obs)
96	Democrats	Majstat	-.327***	.024	0.000	-24363.962
		Constant	-1.275	.020	0.000	(51435 obs)
97	Republicans	Majstat	-.296***	.026	0.000	-21363.399
		Constant	-1.574	.020	0.000	(51513 obs)
98	Republicans	Majstat	-.288***	.030	0.000	-1476.29
		Constant	-1.432	.024	0.000	(32978 obs)
99	Republicans	Majstat	-.382***	.027	0.000	-18436.293
		Constant	-1.347	.020	0.000	(40562 obs)
100	Democrats	Majstat	-.529***	.029	0.000	-16508.251
		Constant	-1.531	.023	0.000	(42450 obs)
101	Democrats	Majstat	-.207***	.030	0.000	-15511.836
		Constant	-1.667	.024	0.000	(34163 obs)
102	Democrats	Majstat	-.234***	.033	0.000	-13376.632
		Constant	-1.561	.026	0.000	(31425 obs)
103	Democrats	Majstat	-.416***	.030	0.000	-16167.556
		Constant	-1.676	.023	0.000	(43123 obs)
104	Republicans	Majstat	-.874***	.027	0.000	-19061.909
		Constant	-1.553	.019	0.000	(55880 obs)

Continued Table 10: Senate DW-NOMINATE Misclassifications, All Restricted Block-Out Zone Senators, by Congress

Cong	Controlling Party	DW Error	Coeff.	Std. Error	P-Value	Log Likelihood
105	Republicans	Majstat	-.402***	.036	0.000	-11218.527
		Constant	-1.778	.028	0.000	(31583 obs)
106	Republicans	Majstat	-.400***	.037	0.000	-10999.196
		Constant	-2.049	.029	0.000	(36386 obs)
107	Democrats*	Majstat	-.255***	.037	0.000	-10793.208
		Constant	-1.995	.029	0.000	(32447 obs)
108	Republicans	Majstat	-.631***	.040	0.000	-9743.6151
		Constant	-2.113	.030	0.000	(36833 obs)
109	Republicans	Majstat	-.238***	.036	0.000	-11726.43
		Constant	-2.066	.029	0.000	(36660 obs)
110	Democrats	Majstat	-.902***	.036	0.000	-11148.61
		Constant	-1.791	.026	0.000	(37981 obs)

After eliminating the noise of changing Congresses, we see again that the probability that House Representatives in the majority party restricted block-out zone are misclassified by DW-NOMINATE is much lower than for those in the restricted minority block-out zone. Coefficients on majority status are always significant and range from -.134 in the 92nd Congress to -1.207 in the 110th.

In the Senate, the evidence is equally strong. Coefficients are always significant, in all but two cases at the .005 level, and range in value from -.091 in the 95th Congress to -.902 in the 110th Congress.

2.6 Conclusions

Under the median voter theorem, where parties do not exert any institutional or agenda effects, there is no reason to expect that majority party members would be misclassified less often than minority members. They are assumed to share the same random utility model, and enjoy the same access to the floor agenda. That majority status had such a large effect on one's misclassification rate suggests that parties are in fact shaping the landscape in ways that affect the roll call data. In the U.S. House, the result cannot be interpreted that majority party members are simply more disciplined, as there are no pressures to induce discipline exerted on the majority party but not the minority party. Rather, majority party members in the House are presented with fewer opportunities to deviate from their perceived ideological stance.

Also evident from this analysis is that the Senate does not enjoy the same negative agenda control as does the House. The misclassification analysis yielded results slightly more favorable to the Cartel Agenda Model than the tests performed in Chapter 1; a move to the majority party block out zone lowered the probability of misclassification for all but two treatment cases, Democrats in the 82^{nd} -84^{th} and Republicans in the 99^{th}-100^{th} Congresses. However, when individual Congresses were isolated to examine the difference in misclassifications between the two parties' block-out zones, all Congresses showed a significant and negative coefficient for majority status.

As noted above, however, this result is unsurprising; while there is much evidence that parties do exert power in the Senate, it is rarely argued to be of the same strength as that exerted in the House. Further, it serves to strength the interpretation of the overall

contention that agenda control does filter into DW-NOMINATE output through the roll call data. The House enjoys more majority party agenda control, and the results comport with this.

In assessing Chapters 1 and 2, it is important to note that DW-NOMINATE does an excellent job estimating legislator ideal points *given the data* provided by the roll call record. However, it is clear from the House that there is data "missing" from the roll call record; namely, votes the majority party blocks from ever reaching the floor. I have argued in these first two chapters that negative agenda control results in an imbalance of cutpoints between the minority and majority party's block-out zones, which in turn is reflected in the legislator estimates vis-à-vis the shape of the ideological distribution over *all* votes.

In terms of the importance of this analysis, it is clear that there are ramifications on the use of ideological scores derived from roll call data. While certainly continuing to serve an important role in legislative research, the way in which these scores are used must be with thoughtful attention to underlying data. For instance, research comparing roll rates by distance to the floor median should employ some form of control against the significantly different distributions from which these scores are stemming. Interpretation of those results should be informed by the difference in "strength" or consistency of those scores between the two parties. Clearly, the scores of legislators in the majority and minority party block-out zone not only come from different distributions, they vary consistently in the frequency with which they correctly predict votes. Therefore, analyses using these scores, especially analyses geared toward detecting the presence of agenda control, must take these differences into account or risk incorrectly interpreting any

results. In Chapter 3, I provide an example of one such way to control the bias present in ideological scores while incorporating these data into my analyses.

Chapter 3: Gate-keeping in House and Senate Committees

An Aide to Senator Grassly (R-Iowa): *"When Thurmond introduces a bill, he has a hearing the next week, then it goes to the top of the agenda."*

Evans: *"By unanimous consent?"*

Aide: *"No. By Senator Thurmond. You have to have unanimous consent unless the Chair decides. He sets the agenda."*[1]

***

3.1 Introduction.

One of the debates concerning the organization of Congress questions the relative importance of committees vis-à-vis parties and the floor median. While much of the scholarly work in this area has focused upon the House, the very differences between the two chambers present an opportunity to better answer this debate.

The Senate is often depicted as an atomistic, informal chamber in which party or majority status means little in structuring legislative outcomes (Ripley 1969; Davidson 1985, 1989; Smith and Flathman 1989; Sinclair 2001a). Floor practices and procedures peculiar to the Senate, such as the filibuster and non-germane amendment activity, have cast doubt on the ability of the majority party to control the floor agenda. While there is a large body of literature modeling and testing the effects of partisanship in the House, these models and empirical techniques have rarely been applied within the context of the Senate.[2] Rather, much of the Senate literature has been comprised of studies of individual leaders or Senators.[3] Further, rarely are the two chambers discussed and studied in relation to one another. Finally, to control for the distributional differences between

[1] Both of these quotes are taken from Evans, 1991.

[2] For work discussing partisan control of the House, see Cox and McCubbins 1993, 2006; Rohde, 1991; Aldrich, 1995; Aldrich and Rohde, 1995, Dion and Huber, 1996; Sinclair 1992 for "strong party" arguments. For "weak party" arguments, see Krehbiel 1993, 1995, 1997; Schickler and Rich, 1997.

[3] For notable eceptions, see Sinclair 1989; Smith 1989; Hurley and Wilson 1989; Binder 1997; Krehbiel 1998.

majority and party members, I employ simple matching to offer a robust measure of agenda control in this context.

Here, I examine the fit of the three most prominent models of committee organization and function: the gains-from-trade model (Shepsle 1986; Shepsle and Weingast, 1987a; Weingast and Marshall 1988), the information model (Krehbiel 1991; Gilligan and Krehbiel 1990) and the majority gate-keeping model (Kiewiet and McCubbins 1991; Cox and McCubbins 1993, 2006; Aldrich and Rohde, 2005). To preview my results, it appears that the majority gate-keeping model fares best in both expectations of agenda control and committee composition for the two chambers, though the evidence is much stronger in the House.

This chapter is organized as follows: In section 1, I present an overview of the three theories of committee structure and purpose. In section 2, I derive the comparable hypotheses from the three theories, and discuss my operationalization of agenda control or gate-keeping. In sections 3 and 4, I discuss the data and methods I used, and finally, turn to my results and conclusions. I now turn to a brief discussion of these three models.

3.2 Literature

There are three main theories of committee organization and function. In the first model, the committees are believed to be organized to facilitate gains from trade (Shepsle 1986, Shepsle and Weingast, 1987a; Weingast and Marshall 1988). That is, legislators self-select onto committees, choosing committees whose jurisdictions are extremely important to their constituents, increasing the incidence of preference outliers on the committees. In order to enjoy agenda control over their chosen jurisdiction, committee members cede agenda power on all other jurisdictions. This trade facilitates bargaining

across policy dimensions and reduces the occurrence of post-agreement reneging. In this model, however, there is no room for partisanship or party leadership; rather, committees act autonomously, its members pursuing goals within their jurisdiction alone.

The second prominent model focuses not on the problem of contracting and reneging over policy dimensions, but upon the informational requirements of multiple policy dimensions (Krehbiel 1991; Gilligan and Krehbiel 1990). This model assumes that all legislators face uncertainty over the outcomes of any given policy, and further that acquiring the information necessary to reduce this uncertainty is costly. To induce members to acquire this information (specialize), parliamentary rights are bestowed upon a committee's members. To ensure that the committee reports information faithfully and completely, the full legislative body makes committee assignments to reduce the incidence of preference outliers on the committees. In this model agenda power is ceded to committees only up to the point at which efficient information is obtained for the full legislative body. Parties have no place in this model either.[1]

A third model views committees as agents of the majority party (Kiewiet and McCubbins, 1991; Cox and McCubbins, 1993; Aldrich and Rohde, 2005). According to this model, the majority party leadership exerts influence over the legislative output of committee members through judicious committee appointments, transfers and removals. The goal of each party's Committee on Committees is to distribute committee seats such that they maximize the number of seats won in the next election. The party, then, cares about those policies around which it has built its reputation. This allows for self-

[1] Here, we assume all actors are arranged according to their preferences along the one-dimensional policy spectrum. The filibuster pivot, then, is the *n*th member, where *n* is calculated according to number of votes required for cloture.

selection to committees that are relatively insulated (such as Agriculture), but strict supervision over assignments to committees who impose an electoral externality on other members (such as Appropriations or Rules). Thus, in this model, while committee members are sometimes 'agents of themselves' (such as in the gains-from-trade model), certain committee assignments are highly partisan and its members are therefore agents of the majority party. Further, majority party members on the more partisan committees are expected to use their blocking or gate-keeping power to protect majority-favored status quos.

How do these models fit with what we observe in the House? Moreover, how do these models fare in the Senate, which is frequently depicted as individualistic, egalitarian, and decentralized?[2] Senate committee members do not enjoy the strict parliamentary rights over areas of their jurisdictions as described in the models above; rather, any Senator may make non-germane amendments. The contrast in floor procedure, combined with the smaller size of the Senate, have led to what Fenno calls the "permeability" of Senate committees, and his conclusion that "decision-making inside the Senate is much less of a committee-dominated process than it is in the House" (Fenno 1973, 147).

In short, the open floor procedure and lack of a germaneness requirement for amendments cast doubt upon all three of these theories of committee organization and function within the Senate. If committees are frequently and successfully bypassed on the Senate floor, then the information/expertise model of committees model would fail to

[2] See Davidson 1989; Smith 1989; Smith and Flathman 1989; and Sinclair 1989 for this characterization of the Senate.

apply, as the Senate would be voting routinely upon bills without the 'expertise' and valuable information provided by committees. The gains-from-trade model would also fail to apply, as there would be no enforcement mechanism on the ex-post reneging that would cause the entire deal to unravel. Finally, the partisan model would not apply, as minority party members would be able to leapfrog the committees' blocking power and bring bills as amendments directly to the floor. While House members may attempt to discharge the committee or pursue amendatory motions to recommit, the costs of bypassing the committee are so high that committee chairs may almost always effectively kill legislation by refusing to report it from committee. However, in the Senate, a minority member may threaten a majority-favored status quo by simply offering a bill as a non-germane amendment to legislation already on the floor.

Committees and the majority party leadership in the Senate are not, in fact, completely without tools with which to protect their turf, so to speak. Evans, for example, identifies two sources of legislative leadership agenda power in Senate committees: information, and procedure (1991). In the first, committee leaders (the Chair and ranking minority member) use their disproportionate access to informational resources to bend policy outcomes in their direction. At first glance, this type of agenda power fits more closely with the information model of committees; however, the Chair's larger share of these resources vis-à-vis the ranking minority member may work toward a more partisan theory of Senate committees.

The second source of agenda power, procedural, is a clear example of partisan agenda control. This is, of course, the central tenet of the Cartel Agenda model. Procedural control, or scheduling power, is the sole prerogative of the leadership. Using

case studies, Evans reports occasions in which Senators who opposed a chair on some particular bill later experienced difficulty in getting their own legislation scheduled later; by contrast, more cooperative members enjoyed almost immediate access to the floor for their bills. Therefore, while a disgruntled member of the Senate may bypass an unfriendly committee (or committee chair, as the case may be), that member will have to expend many of his or her own resources in information-gathering and coalition-building for the bill; in short, circumventing his or her committee takes an enormous amount of time, which is increasingly scarce in the Senate environment.[3]

Further, a chair may attempt to kill a bill in committee by filling the two-hour limit for bill mark-up by offering numerous amendments.[4] Majority party members, Strom Thurmond (R-SC) and Don Nickles (R-OK), for example, attempted to kill a minority-sponsored bill, S.974, in 1985 at the subcommittee stage by offering nearly twenty amendments—most of which were drafted by the committee chair, Orin Hatch (R-UT), expecting to reach the two-hour time limit. However, if the bill's supporters have the foresight, time, and means to procure a unanimous consent agreement (UCA) in advance, this time limit may be waived. While Thurmond and Nickles were successfully outmaneuvered at markup by the UCA, Hatch responded by simply refusing to schedule the bill for full committee consideration. When asked why the bill's sponsor did not simply take the bill to the floor, his staffer replied, "In the current administrative climate, you just never know what is going to happen when you circumvent committee" (Evans 1991, 47).

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[3] See Oppenheimer 1985; Evans 1991; Sinclair 1986.
[4] In the Senate, you may not allow markup to proceed for more than two hours after the Senate goes into session (Evans 1991).

In the House, however, the majority party is perceived to be much more privileged with concern to setting the floor agenda. Therefore, majority-party members on a given committee are in a much better position to prevent disfavored bills from reaching the floor with respect to their minority counterparts. Cox (2001), for instance, examines dissents on all final passage votes and committee reports in the 84th through 98th Congresses. He finds that, ceteris paribus, majority-party members dissent much less often than do minority members—with more than 50% of majority-party members never dissenting. Further, Cox and McCubbins (1993) find that of all bills reported from committees within the 82nd and 83rd Congresses, only 26% and 13% of all bills, respectively, were sponsored by minority members. Similarly, Connelly and Pitney (1994) found that in the 103rd and 104th Congresses, minority members sponsored only 14% and 16%, respectively, of all bills signed into law by President Clinton.

However, the perception that committee members, and not necessarily majority party committee members, enjoy gate-keeping power continues to receive much support. As Rogers stated in 1926, "In the House of Representatives, even though a majority would wish, say, to change a tariff schedule, it could not do so without the consent of a majority of the Ways and Means Committee. That body has *absolute control*," (1926, 131). Kollman furthers this view saying, "Committees, notably in the House, often exert considerable gate-keeping and agenda-setting powers" (1997). Finally, Janda, Barry and Goldman (1995, 380) succinctly sum up this view: "[G]overnment by committee vests a tremendous amount of power in the committees and subcommittees of Congress—especially in their leaders. Committee members can bury a bill by not reporting it to the full House or Senate."

3.3 Testing the Theories

These three theories all assign agenda control over bills of a certain legislative jurisdiction to different members: the majority gate-keeping model assigns agenda control to the majority party; the gains-from-trade model argues that this control belongs to committee members in a non-partisan manner; finally, the information model assigns this control the floor median. Therefore, the first task is to clearly define agenda control and, next, to operationalize this concept.

Negative agenda control, or gate-keeping power, is a theoretical construct that captures the ability of a legislator's (or groups of legislators') ability to *block* a bill's progression through the legislative process (Cox and McCubbins, 2006). On the other hand, positive agenda control refers to the ability of a legislator to move policies towards him or herself. In other words, it is the ability of the legislator to *move* bills he or she favors to the status quo through the legislative process, past veto gates, such as Senate committees, and into enactment. In the case of the former, I assume a legislator lacks negative agenda control if he or she routinely votes *against* bills that pass nonetheless. Therefore, a roll, here defined as bill that a legislator votes against that nonetheless passes, is an instance of failed gate-keeping power. That legislator's cumulative roll rate (the number of bills a legislator voted against bills which passed as a ratio to the total number of times that legislator voted on the final passage of bills) allows us to compare the negative agenda control of all Senators on a given set of bills. Those who are rolled less frequently display more blocking or gate-keeping power than those who are rolled more often.

As Cox and McCubbins (2006) warn, this does not perfectly capture those instances in which a bill may be against the preferences of a legislator, but he or she votes *for* the bill for other reasons; similarly, a legislator may prefer some bills, but vote against them for political or party reasons. Rather, this measure treats final passage votes as true representations of a legislator's preferences.

Main Hypotheses:

Majority Gate-keeping Model: The distribution of gate-keeping power favors those with majority status. If gate-keeping power is distributed in a partisan manner, then those with majority status will suffer fewer rolls, *ceteris paribus*, than minority party members on bills within any issue jurisdiction.[5]

Gains-From-Trade Model: The distribution of gate-keeping power favors those with committee membership status. If gate-keeping power is distributed to committee members in an non-partisan manner, then those on a committee will suffer fewer rolls on bills in their issue jurisdiction, *ceteris paribus*, than non-committee members on those bills.

Information Model: Those members who are ideologically closer to the floor median on a given issue will suffer fewer rolls. Neither party or committee membership should affect the likelihood that one is rolled.

The following tests ascertain the extent to which this distribution is, in fact, partisan. For each issue, I examine the roll rates of the following four mutually exclusive set of individuals:

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[5] There are sixteen standing committees in the Senate; therefore, for my purposes, I code sixteen distrinct issue jurisdictions.

- Majority party members on the committee related to the issue under examination
- Minority party members on the committee
- Majority party members *not* on the committee
- Minority party members *not* on the committee

3.4 Data

The data for this chapter come from three primary sources. First, I rely upon a dataset compiled by Adler and Wilkerson and the University of Washington's Congressional Bills project.[6] This dataset codes the issue of each bill introduced in the House or Senate for the 80th to 105th Congresses. The dataset also notes the committee to which the bill was referred, as well as the sponsor of the bill. Finally, it notes the origin of each bill—that is, whether it is a House-originated or Senate-originated bill.

This dataset was merged with Poole and Rosenthal's ICPSR dataset (derived from the House and Senate manuals) to determine the outcome of each bill, as well as the way each member voted. From this I calculate each Representative's and Senator's roll rate on bills pertaining to a set of committees; in particular, I examine Agriculture, Banking, Commerce, Defense (Armed Services) and Energy in the Senate. In the House, I examine bills pertaining to Agriculture, Banking, Energy and Commerce, Defense and Ways and Means committees. I first examine the mean roll rates of minority and majority committee members, majority and minority non-committee members, and the cross product of the two within both chambers on bills within the committees'

[6] See http://congresionalbills.org, E. Scott Adler and John Wilkerson, Cngressional Bills Project: 2007, NSF 0080066 and 00880061.

jurisdiction. Finally, I used Nelson's dataset coding the committee membership of each Representative and Senator.

Next, within each chamber, I use the nearest neighbor algorithm to I restrict analysis to pairs of minority party and majority party members who are similarly distant from the floor median as measured by their DW-Nominate scores.[7] By restricting the data analyzed in this way, I control for any differences in the ideological distribution of the two parties with respect to the floor median (this issue was developed in earlier chapters). This also controls for the difference in size between the two parties (or the size of the majority enjoyed by the majority party). I then use logit to examine the individual-level effects of majority or committee status and DW-Nominate distance from the floor median on the probability that one is rolled on a particular bill. I also interact majority status and floor distance in order to determine whether floor distance matters more to a minority member's probability of being rolled.

3.5 Methods and Results

I first determined those bills that fell under the jurisdiction of committee *J*, and restricted the set of roll calls analyzed to final passage votes.[8] Next, I determined the number of times a member, *i*, of committee *J* was "rolled" on bills falling in the jurisdiction of *J*. Here, I say a committee member, *i*, is rolled on bill x_j if *i* votes against

[7] Specifically, I use the Matchit program by Ho, et al, and the nearest neighbor matching algorithm. For instance, I matched minority members to majority members upon their DW-Nominate distance to the floor median ((Fdist). The program finds an appropriate majority-member "match", if one exists, for each minority member. Those members who do not have an appropriate match are discarded. Only "natural governments" with a difference of means of 25 or less were included in the following logit analysis. Therefore, if the difference between the minority mean Fdist and the majority mean Fdist was greater than .25, that natural government-issue unit was discarded. See Ho et al., for a discussion of balance between the treatment and control units.

[8] This analysis includes only results obtained for Agriculture, Banking, Commerce, Defense and Energy committees (Senate) and Agriculture, Banking, Energy and Commerce, Defense, and Ways and Means (House).

x_j and it passes nonetheless. If the gate-keeping model of committees is correct, then the number of times majority committee members are rolled should be zero (under the strong assumptions)[9]. If the gains-from-trade model of committees is correct, committee members will never be rolled, regardless of majority or minority party status.

[9] See Appendix 1 of Cox and McCubbins (2006) for these assumptions.

Table 11: Predictions on Differences of Means in Roll Rates

Majority Gate-keeping vs. Gains-from-Trade

Majority Gatekeeping	**Gains From Trade**
Mean Roll Rate $_{\text{Majority Party Non-committee members}}$ < Mean Roll Rate$_{\text{Minority Committee members}}$	Mean Roll Rate$_{\text{Majority Party Non-Committee members}}$ > Mean Roll Rate$_{\text{Minority Committee members}}$
Mean Roll Rate$_{\text{Majority Party Committee members}}$ < Mean Roll Rate$_{\text{Minority Party Committee members}}$	Mean Roll Rate$_{\text{Majority Party Committee members}}$ = Mean Roll Rate$_{\text{Minority Committee members}}$
Mean Roll Rate$_{\text{Majority Party members}}$ < Mean Roll Rate$_{\text{Minority Party members}}$	Mean Roll Rate$_{\text{Committee members}}$ < Mean Roll Rate$_{\text{Non-Committee members}}$

That is, in the majority gate-keeping model, majority members always do better than minority members, regardless of committee status. Specifically, no bill should reach the floor that the majority party disfavors. In the gains-from-trade model, those with committee membership always fare better than non-committee members, regardless of majority party status. In this model, no bill should reach the floor that the committee disfavors. In the following tables, I present the results from the unpaired t-tests, comparing the mean roll rates of majority party committee members, minority committee members, non-committee majority party members, non-committee minority party members for Agriculture, Banking, Commerce, Defense, and Energy in the Senate and Agriculture, Banking, Energy and Commerce, Defense and Ways and Means in the House. The trusting reader may skip to Table 7 for a summary of the results.

Table 12: T-test Results, Majority Party Non-Committee Members' Roll Rate = Minority Party Committee Members' Roll Rate

HOUSE

Issue	Majority Party Non-Committee Member	Minority Party Committee Member	t-value
Agriculture	.2337 (*n*=23548)	.3503 (*n*=1467)	-3.997**
Banking	.1577 (*n*=27162)	.3472 (*n*=1376)	-10.91**
Commerce and Energy	.1505 (*n*=25248)	.3193 (*n*=1646)	-7.83**
Defense	.1793 (*n*=44005)	.2275 (*n*=3179)	-3.94**
Ways and Means	.2133 (*n*=20869)	.3675 (*n*=973)	-5.16**

SENATE

Issue	Majority, Non-committee Member	Minority, Committee Member	t-value
Agriculture	.1038 (*n*=307)	.1360 (*n*=35)	-1.302
Banking	.0648 (*n*=417)	.1949 (*n*=48)	-6.203**
Commerce	.1161 (*n*=140)	.1337 (*n*=32)	-0.447
Defense	.0848 (*n*=549)	.1305 (*n*=78)	-2.296*
Energy	.0795 (*n*=241)	.1983 (*n*=36)	-4.810**

Table 13: T-test Results, Majority Party Committee Members' Roll Rate Minority Party Committee Members' Roll Rate

HOUSE

Issue	Majority Party Committee Member	Minority Party Committee Member	t-value
Agriculture	0.11 (*n*= 2352)	0.35 (*n*=1467)	-8.317**
Banking	.0909 (*n*=1994)	.3472 (*n*=1376)	-19.85**
Commerce and Energy	.1002 (*n*=2666)	.3193 (*n*=1646)	-9.96**
Defense	.1224 (*n*=4767)	.2275 (*n*=3179)	-9.82**
Ways and Means	.1477 (*n*=1783)	.3675 (*n*=973)	-8.82**

SENATE

Issue	Majority Party, Committee Member	Minority Party, Committee Member	t-value
Agriculture	.1025 (*n*=59)	.1360 (*n*=35)	-1.176
Banking	.0537 (*n*=75)	.1949 (*n*=48)	-4.867**
Commerce	.0620 (*n*=51)	.1337 (*n*=32)	-2.033*
Defense	.0847 (*n*=117)	.1305 (*n*=78)	-1.799*
Energy	.0621 (*n*=56)	.1983 (*n*=36)	-4.344**

Table 14: T-test Results, Committee Members' Roll Rate = Non-Committee Members' Roll Rate

HOUSE

Issue	Committee Member	Non-Committee Member	t-value
Agriculture	.2032 (3819)	.3166 (38879)	-6.06**
Banking	.1956 (*n*=3370)	.239 (*n*=44174)	-4.05**
Commerce and Energy	.1838 (*n*=4312)	.2308 (*n*=41470)	-3.2**
Defense	.1646 (n=7925)	.1997 (n=72611)	-4.52**
Ways and Means	.2253 (*n*=2756)	.289 (*n*=34662)	-3.63**

SENATE

Issue	Committee Member	Non-Committee Member	t-value
Agriculture	.1150 (*n*=94)	.1211 (*n*=511)	-0.351
Banking	.1088 (*n*=123)	.0961 (*n*=683)	-.810
Commerce	.0896 (*n*=83)	.1664 (*n*=221)	-2.683*
Defense	.1031 (*n*=195)	.1071 (*n*=919)	-0.271
Energy	.1154 (*n*=92)	.1330 (*n*=416)	-0.847

Table 15: T-test Results, Majority Party Member's Roll Rate = Minority Party Member's Roll Rate
HOUSE

Issue	Majority Party Member	Minority Party Member	t-value
Agriculture	.2226 (*n*=25900)	.4359 (*n*=16798)	-19.595**
Banking	.1532 (*n*=29156)	.3671 (*n*=18388)	-38.48**
Commerce and Energy	.1457 (*n*=27914)	.3524 (*n*=17868)	-23.63**
Defense	.1728 (*n*=48751)	.2308 (*n*=31785)	-12.04**
Ways and Means	.2081 (*n*=22652)	.4011 (*n*=14766)	-20.67**

SENATE

Issue	Majority Party Member	Minority Party Member	t-value
Agriculture	.1036 (*n*=366)	.1456 (*n*=239)	-3.290**
Banking	.0631 (*n*=492)	.1528 (*n*=314)	-8.059**
Commerce	.1016 (*n*=191)	.2195 (*n*=113)	-4.564**
Defense	.0848 (*n*=666)	.1385 (*n*=448)	-4.703**
Energy	.0763 (*n*=297)	.2052 (*n*=211)	-8.461**

Overall, the results from these analyses are quite suggestive of the Majority Gate-keeping model of committees. However, it is clear that majority gate-keeping is an even better fit in the House than it is in the Senate. For instance, in all House committees examined, majority party non-committee members enjoyed a lower roll rate than did minority party committee members. In Table 10, the null hypothesis, that majority party committee members' roll rates are equal to that of minority party committee members' rates, is also rejected for all cases.

While Table 11 demonstrates that House committee members enjoy a lower a roll rate than non-committee members, this is not in conflict with the gate-keeping theory of Congress. Gate-keeping theory states only that majority members should enjoy lower roll rates than minority members. Table 12, which compares roll rates for all majority and minority members, provides further evidence of this in all cases studied.

As noted above, however, the evidence for the Senate is weaker. While the gate-keeping model outperforms the committee theory, not all roll rate comparisons are correctly predicted. In Table 10, neither Agriculture nor Commerce are correctly predicted by gate-keeping theory and we fail to reject the null hypothesis that majority party non-committee members suffer the same roll rate as minority committee members. Similarly, in Table 11, while we may reject the hypothesis that majority party committee members' roll rates are equal to that of their minority committee counterparts for four of five cases, the Agriculture committee fails to yield positive evidence for gate-keeping. However, Table 13 yields positive evidence in all five cases: majority party Senators enjoy a lower roll rate than their minority party counterparts.

In Table 14 and 15 below, I list the two theories' predictions as well as the committees and issues which met those predictions in both chambers.

Table 16: Summary of Results, House

Majority Gatekeeping	**Gains From Trade**
Mean Roll Rate$_{\text{Majority Party Non-committee members}}$ < Mean Roll Rate$_{\text{Minority Committee members}}$ • Agriculture ($p < .0005$) • Banking ($p < .0005$) • Commerce and Energy ($p < .0005$) • Defense ($p < .0005$) • Ways and Means ($p < .0005$)	Mean Roll Rate$_{\text{Majority Party Non-Committee members}}$ > Mean Roll Rate$_{\text{Minority Committee members}}$
Mean Roll Rate$_{\text{Majority Party Committee members}}$ < Mean Roll Rate$_{\text{Minority Party Committee members}}$ • Agriculture ($p < .0005$) • Banking ($p < .0005$) • Commerce and Energy ($p < .0005$) • Defense ($p < .0005$) • Ways and Means ($p < .0005$)	Mean Roll Rate$_{\text{Majority Party Committee members}}$ = Mean Roll Rate$_{\text{Minority Committee members}}$
Mean Roll Rate$_{\text{Majority Party members}}$ < Mean Roll Rate$_{\text{Minority Party members}}$ • Agriculture ($p < .0005$) • Banking ($p < .0005$) • Commerce and Energy ($p < .0005$) • Defense ($p < .0005$) • Ways and Means ($p < .0005$)	Mean Roll Rate$_{\text{Committee members}}$ < Mean Roll Rate$_{\text{Non-Committee members}}$ • Agriculture ($p < .0005$) • Banking ($p < .0005$) • Commerce and Energy ($p < .0005$) • Defense ($p < .005$) • Ways and Means ($p < .005$)

Table 17: Summary of Results, Senate

Majority Gatekeeping	**Gains From Trade**
Mean Roll Rate$_{\text{Majority Party Non-committee members}}$ < Mean Roll Rate$_{\text{Minority Committee members}}$ • Banking ($p < .0005$) • Defense ($p < .05$) • Energy ($p < .0005$)	Mean Roll Rate$_{\text{Majority Party Non-Committee members}}$ > Mean Roll Rate$_{\text{Minority Committee members}}$
Mean Roll Rate$_{\text{Majority Party Committee members}}$ < Mean Roll Rate$_{\text{Minority Party Committee members}}$ • Banking ($p < .0005$) • Commerce ($p < .05$) • Energy ($p < .0005$)	Mean Roll Rate$_{\text{Majority Party Committee members}}$ = Mean Roll Rate$_{\text{Minority Committee members}}$
Mean Roll Rate$_{\text{Majority Party members}}$ < Mean Roll Rate$_{\text{Minority Party members}}$ • Agriculture ($p < .0005$) • Banking ($p < .0005$) • Commerce ($p < .0005$) • Defense ($p < .0005$) • Energy ($p < .0005$)	Mean Roll Rate$_{\text{Committee members}}$ < Mean Roll Rate$_{\text{Non-Committee members}}$ • Commerce ($p < .0005$)

As one can see in Tables 14 and 15, on those predictions in which the majority gate-keeping and gains-from trade models diverge and in which there is a significant difference, the majority gate-keeping model makes the correct prediction, in the House always, and in the Senate more often than not. The result most supportive of the gate-keeping model and most at odds with the gains-from trade model is that *majority party non-committee* members are rolled less than *minority party committee* members on bills related to the Banking, Defense and Energy committees within the Senate and *all* committees considered within the House.

Further, minority party committee members *never* enjoyed significantly lower roll rates than majority party, non-committee members. Finally, when party is no

longer taken into account, committee members do significantly better in only the Commerce committee within the purportedly less partisan Senate; interestingly, committee members did significantly better in all of the committees considered in the House. Importantly, majority members *always* enjoyed a lower roll rate than their minority counterparts in both chambers.

However, these tests are quite rough. Further, while suggestive of the majority gate-keeping model, the static tests on roll rates do little to test the fit of the information model of committees. Therefore, to examine individual-level data, I use the logit model to determine the relative importance of majority status, committee membership and ideological distance from the floor median on the probability that Senator or House member *i* is rolled on a bill from committee *J*'s jurisdiction.

If the information model is correct, distance from the floor median should be the *only* variable which ever impacts one's probability of a roll. If the gains-from-trade model is correct, committee membership should impact one's probability of being rolled, and one should observe no effect of minority or majority status when examining ONLY committee members. Finally, majority status should impact one's likelihood of being rolled if the majority gate-keeping model is correct further, DW-Nominate distance should matter disproportionately for minority members. Note that evidence confirming the relevance of one's distance to the floor median on the probability of a roll does *not* contradict either the gains-from-trade or gate-keeping models.

A first possibility would be to run the logit regression with all three independent variables such that

$$P(Roll_{ij}) = 1/(1+e^{-(a+\beta \cdot min\_stat+\delta Fdist+\gamma \cdot oncom)}).$$

For each senator *i,* bill-*j* observation, "min_stat" takes a 1 if the member belongs to the minority party and zero otherwise, "Fdist" is the ideological distance from the floor median as computed with DW-Nominate scores, and oncom takes a value of 1 if Senator *i* is on committee *j*.

Instead, a more robust test of the three models would examine the impact of majority status, say, on one's probability of being rolled while *holding constant* committee membership and floor distance. Therefore, I first grouped issue-Congress units into "natural governments."[10]

A natural government includes all consecutive Congresses in which the President's party, House majority and Senate majority party were the same. I then used Gary King's matchit program and the nearest neighbor matching algorithm to select minority members whose "Fdist" was similar to that of a majority member's within a given natural government. If no suitable match was found, the observation was discarded. If the overall match was poor (in other words, the data had a poor balance), the natural government-issue unit was excluded from analysis. As noted earlier, if the difference of means on Fdist between the minority (control) and majority (treated) groups was greater than .25, the balance was considered poor and the unit was discarded.

After preprocessing the data in this manner, I then ran the logit model on the

[10] The natural governments occurring within the 80th-105th Congresses are listed in Appendix 1.

following three groups of matched legislators:

1. Minority-party committee members matched with majority-party committee members
2. Minority party committee members matched with majority-party non-committee members
3. Majority party committee members matched with minority-party non-committee members

Because the data had been preprocessed in this manner, I ran a logit of the following functional form:

$$P(Roll_{ij}) = 1/(1+e-(a+\beta \cdot min\_stat+\delta \cdot Fdist+\gamma \cdot Fdist\_min)),$$

where Fdist_maj is the interaction term of Fdist and min_stat. The interaction term was in included in Model II to determine whether Fdist is more important to a minority member's probability of being rolled than to a majority member; however, Model 1 examines only the effects of min_stat and Fdist upon the matched members' roll rates. The results are listed blow in Tables 16 and 17.

Table 18: Logit Analysis of the Impact of Majority Status and Ideological Distance on Members' Roll Rates, HOUSE

Independent Variable	Model I Coefficient	Model II Coefficient
Group: Committee Members		
Min_Stat	-.1.08**	-.344**
	(.026)	(.053)
Fdist	1.901**	-1.254**
	(.069)	(.132)
Fdistmin	–	4.838**
		(.162)
N=54081		*N*=54081
χ^2 (2) = 3924.68		χ^2 (3)4894.25
Pseudo R^2 = 0.08		Pseudo R^2 =.099
Log likelihood = -22730.82		Log likelihood= -22246.04
Group: Non-Committee Members		
Min_Stat	-.752**	-.005
	(.016)	(.035)
Fdist	1.869**	.346**
	(.047)	(.08)
Fdistmin	--	2.381**
		(.10)
N=127468		N = 127468
χ^2 (2) = 4857.62		χ^2(3) = 11.86
Pseudo R^2 = 0.0425		Pseudo R^2 = 0.05
Log likelihood = -54675.982		Log likelihood = 54386.9

Continued Table 18 Logit Analysis of the Impact of Majority Status and Ideological Distance on Members' Roll Rates, HOUSE

Independent Variable	Model I Coefficient	Model II Coefficient
Group: Minority Committee Members, Majority Non-Committee Members		
Min_stat	-.0212	-.577**
	(.033)	(.081)
Fdist	2.518**	1.634**
	(.103)	(.156)
Fdistmin	--	1.574**
		(.208)
N=37506		*N*=37506
χ^2 (2) = 591.14		χ2 (3) = 648.43
Pseudo R^2 = 0.023		Pseudo R^2 = 0.02
Log likelihood = -12811.968		Log likelihood = 12783.3

Table 17: Logit Analysis of the Impact of Majority Status and Ideological Distance on Members' Roll Rates, SENATE

Independent Variable	Model I Coefficient	Model II Coefficient
Group: Committee Members		
Min_Stat	.265*	-.278
	(.114)	(.259)
Fdist	1.370**	.32
	(.391)	(.604)
Fdistmin	–	1.851*
		(.798)
N=3426		*N*=3426
χ^2 (2) = 18.10		χ^2 (3)=23.53
Pseudo R^2 = 0.008		Pseudo R^2 =.01
Log likelihood = -1123.37		Log likelihood=-1111.6
Non-Committee Members		
Min_Stat	.660**	.164
	(.044)	(.092)
Fdist	1.533**	.471*
	(.130)	(.221)
Fdistmin	--	1.661**
		(.276)
N=20509		*N* = 20509
χ^2 (2) = 391.74		χ^2(3) = 428.49
Pseudo R^2 = 0.03		Pseudo R^2 = 0.03
Log likelihood = -7445.99		Log likelihood = -7427.6

Continued Table 19: Logit Analysis of the Impact of Majority Status and Ideological Distance on Senators' Roll Rates, SENATE

Independent Variable	Model I Coefficient	Model II Coefficient
Minority Committee Members, Majority Non-Committee Members		
Min_stat	.348**	.120
	(.086)	(.183)
Fdist	1.427**	1.043**
	(.235)	(.362)
Fdistmin	--	.668
		(.478)
N=5361		*N*=5361
χ^2 (2) = 55.57		χ^2 (3) = 57.53
Pseudo R^2 = 0.014		Pseudo R^2 = 0.015
Log likelihood = -1920.65		Log likelihood = -1919.7

These results echo those found above with the difference of means tests. It is clear that as one's distance from the floor median increases, so does his or her probability of being rolled; however, in almost all cases in *both chambers,* one's distance from the floor median matters considerably more to minority members, as shown with the introduction of the interaction term in Model II. The one case in which this is not true is that of Senate minority-party committee members versus majority party non-committee members. This is the result which lends support for the information model of committees; however, it is noteworthy that under the Model I conditions, minority status does indeed increase one's probability of a roll. This is therefore further evidence that majority status does, in fact, mean more in the House; however, it still seems to carry some benefits within the Senate, as well.

3.6 Conclusions.

This chapter tests theories of Congressional organization using a pattern-matching test design. That is, one may derive multiple predictions from each model, some of which are in direct conflict with one another, some of which are not. While we are interested in determining which model provides the most correct predictions, we are especially interested in those cases where predictions diverge and one model correctly predicts outcomes. Here, I examined three prominent theories of organization: the Information Theory, Gate-keeping Theory, and Gains-from-Trade. While this list is not exhaustive, it this work has provided compelling evidence of the strength of partisan agenda control in both chambers. For instance, I do not explicitly test the Pivot model. In the House, and excluding the Presidential veto override, the only pivot is the median voter, and so that case is covered in the test of the Information theory of Congress. However, the Senate case entails additional pivots, such as the cloture pivot, which are not tested in this chapter.

More research is needed. First, it is well known that different committees are of varying importance to the majority party. Therefore, an investigation of these differences among committees within each chamber seems worthwhile. I would also like to eventually include all of the modern standing committees within the Senate and House. Clearly, there are important committees missing from certain sections of this analysis such as Budget and Foreign Affairs within the Senate and Appropriations within the House. Second, these three models differ with respect to the way in which committee assignments are made. Thus, another promising research avenue will be to examine

Senate and House committee assignments, requests and transfers on an individual level rather than simply comparing committee medians and members' roll rates.

Appendix 3: Natural Governments

Natural Government	Included Congresses
1	80th
2	81st
3	82nd
4	83rd
5	84th, 85th, 86th
6	87th
7	88th, 89th, 90th
8	91st
9	92nd
10	93rd, 94th
11	95th, 96th
12	97th, 98th
13	99th
14	100th
15	101st, 102nd
16	103rd
17	104th

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