

Dimensionality in Congressional Voting:

The Role of Issues and Agendas

By

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Abstract:

Congressional preferences are frequently categorized by a liberal to conservative dimension that splits the two-party system in the modern period. However, recent studies of voting in Congress have challenged that conception (Roberts et al. 2007, Crespín and Rohde 2010, Dougherty et al. 2010). Scholarship that relies exclusively on the roll call record to explain congressional preferences may not account for other dimensions that exist in the legislative process. Partisan agenda control may further lower the dimensionality suggested by roll call voting. In this paper, the strength of the unidimensional model is tested. First, issue areas that should theoretically be poorly accounted for by the unidimensional model are examined. These issues are based on Aage Clausen's "law of categorization" which argues that members of Congress have consistent issue preferences that vary based on the policy considered (Clausen 1974). Policy areas that vary by region are examined, as the economic benefit of a constituency (Fenno 1978) or the political culture of a district should affect voting preferences in Congress (Elazar 1994). The results of this analysis suggest that the unidimensional model performs poorly on many of these issue areas. Second, this paper demonstrates how the changing nature of the congressional agenda affects the importance of extra-dimensional preferences. By creating models using a subset of each Congress, this study shows that issues like abortion have risen on the agenda while a civil rights issue dimension is no longer active. Finally, using the evidence gathered in the previous sections, this paper examines the importance of issue areas on procedural votes as compared with roll calls which change the ideological content of a bill. The results suggest that parties during the Clinton years have overcome these issue dimensions during procedural votes, but votes that affect policy legislators may revert to issue based preferences. Overall, the results of this paper suggest that within specific issue areas, meetings of Congress, and types of roll calls, there is a systematic underperformance of the unidimensional model of preferences.

Introduction

During consideration of the Patient Protection and Affordable Care Act, the landmark health care legislation of Obama's first term, House Speaker Nancy Pelosi (D-CA) encountered a roadblock. Speaker Pelosi would need nearly all of her party caucus, a 37 seat majority, to stand behind the bill for the legislation to pass. However, a group of 40 moderate Democratic members banded together to oppose consideration of the bill due to a possible loophole in the legislation that could funnel taxpayer money to provide abortions (MacGillis 2009). The bill could not proceed without the full support of the party caucus. Speaker Pelosi (D-CA), was forced to consider three separate amendments by Democratic members offering compromises on the question of abortion funding. Rep. Brad Ellsworth (D-IN), a recipient of the lowest possible rating from Planned Parenthood Action Fund for support of reproductive issues, offered one proposal that allowed private contractors to process abortion claims and prohibit health care exchanges from restricting access to plans covering the procedure. Rep. Lois Capps (D-CA), a staunch pro-choice activist, proposed removing all abortion language from the reform plan to prevent any growth or reduction in abortion coverage. The most restrictive proposed amendment on access and funding possibilities for abortions was proposed by Congressman Bart Stupak (D-MI) and Congressman Joseph Pitts (R-PA). After negotiations, and despite more "liberal" amendments being proposed, Pelosi was forced to allow consideration and a roll call vote on the Stupak-Pitts amendment with minor changes. The amendment passed with 64 Democratic yeas to be included in House version of the legislation.

Congressional scholars, who focus on a model of preferences that is a one-dimensional, liberal to conservative continuum, must have been puzzled by this result. Some Democrats voting for this amendment had ideological scores more liberal than that of President Obama. For

example, two of those liberal supporters were committee chairmen Dave Obey of Appropriations and Jim Oberstar of Transportation and Infrastructure. These liberal, yet pro-life, Roman Catholic Democrats pushed for changes to the bill on the question of abortion, yet were strong sponsors of the goal of the legislation. The story of Rep. Stupak and the pro-life Democrats who forced a vote on abortion funding in the Patient Protection and Affordable Care Act tells a different story. In an *Washington Post* op-ed Congressman Stupak explained: “I and other pro-life Democrats are pleased that we were able to hold true to our principles and vote for a bill that is pro-life at every stage of life, and that provides 32 million Americans with access to high quality, affordable health care” (Stupak 2010). The ideology of these Democrats had two distinct components: a traditional liberal to conservative dimension on the role of government in assuring access to health care, and a second dimension on the issue of abortion. From the debate on slavery in the western territories, the coinage of silver, and civil rights these extra dimensions often come to define the political discussion of the day, rather than fall into the traditional ideological debate on the role of government.

The calculus made in voting decisions of members of Congress (MCs) has been an important subject for scholars of the U.S. (Clausen 1974, Kingdon 1981). The importance of parties, constituents, and ideology have all been cited as key influences on the roll call votes for MCs (Miller and Stokes 1963, Clausen 1973, Mayhew 1974, Fenno 1978, Poole and Daniels 1985, Cox and McCubbins 2005, Smith 2007, Lee 2009). Yet political scientists and commentators alike have come to focus on ideology as measured on a single dimension from liberal to conservative as the dominant model of legislative preferences (Converse 1964, Poole and Rosenthal 1997). Though there has been some opposition to this concept (see Lee 2009,

Crespin and Rhode 2010) the categorization of legislative preferences seems to be a single street with a camp on the left, and on the right (Hotelling 1929).

Theories of party government suggest that parties will use the amendment process to move the ideological character of the bill to the party median, rather than the chamber median (Cox and McCubbins 2005). In the case of abortion in the Patient Protection and Affordable Care Act, the most conservative amendment was the only one considered on the floor, and was supported in the roll call by only 27% of the Democratic Caucus. Members of the party leadership like Appropriations Chairman Obey shirked the goals President Obama and Speaker Pelosi and supported a different policy on the question of abortion, showing how salient issue dimensions can rise above party loyalty and traditional ideology.

In the following pages, this research seeks to present evidence of the importance of the ideology beyond the first dimension on roll call voting in the U.S. House of Representatives. After exploring the relevant literature on dimensionality and voting decisions in Congress, this study examines the issue dimensions that are relevant for the modern Congress, how and when those issues feature on the congressional agenda, and which types of votes in the process these issues matter. The results of this analysis suggest that despite the rise of a largely polarized and unidimensional Congress, specific issue areas still have an important impact on the voting preferences of MCs outside the traditional liberal-to-conservative dimension.

Voting Behavior in Congress

The current generation of congressional scholars has produced a model of legislative behavior that looks much different than early studies of congressional decision making. A focus on the role of ideology has replaced an emphasis on the agency and individual calculus of members of Congress (MCs). Studies of the individual's role in Congress produced a model that stressed

economic calculus and reelection goals. These studies moved from a focus on a large number of influences and institutions that affect voting (Kingdon 1981, originally 1969) to Mayhew's (1974) conception of MCs as singularly focused on electoral goals. Studies of MCs outside of the Capitol demonstrated how they interacted in their district (Fenno 1978), how entrepreneurial legislators created "enterprises" to increase their power and influence (Loomis 1990), and the how constituencies influenced voting behavior (Miller and Stokes 1963). Constituency influences have been demonstrated in studies of the 1824 Congress (Carson and Engstrom 2005) and other political development studies (Schickler 2001). However, not all constituency influence is equal. Fenno (1978) stressed the importance of personal and reelection constituencies, while others have conceptualized a "sub-constituency" or "prospective constituency" that focused on the constituency of swing voters and interests as the most influential for MCs (Bishin 2000). For these scholars, there is an individual calculus to voting beyond ideology. The constituency a MC comes from, and the electoral considerations that creates is crucial.

Others reject this individual based model of congressional decision making in favor of an ideology centered approach. Krehbiel (1993) compared constituent variables and found that ADA scores were more effective at accounting for roll-call votes. This focus on policy preferences or "ideology" as a model for legislative behavior has been formalized by creating ideal points for the preferences of legislators on a one or two dimensional structure of ideology (Poole and Daniels 1985, Poole and Rosenthal 1997) and a theory of lawmaking that stresses preferences on a one-dimensional scale (Krehbiel 1998). Ideology, usually conceived as a consistent pattern of preferences held by legislators, is a troublesome idea for other congressional scholars. As Lee (2009) points out, the term ideology is not used in any article on Congress

before 1940. It is hard to distinguish “ideology” from party or regional loyalty (Heckman and Snyder Jr. 1997, Lee 2009). Quantitative methods may place legislators on ideal points, however these techniques inherently capture party and district level concerns as endogenous features of ideology (Maltzman and Smith 1994). For these authors, a conception of ideology as the only theoretically important influence on roll-call voting, as argued by Krehbiel (1998), is flawed.

An alternative model of congressional decision making is provided by Clausen (1973), who contends that MCs do have consistent preferences, but they vary by the issue area considered. Clausen’s argument centers on the “law of categorization,” which suggests that legislators, like the everyday citizen, organize their political preferences based on the category of issue being discussed. Within these distinct categories, MC’s decision making can be consistent because the areas offer distinct ideological positions. For instance, two MCs who would both categorize themselves as “conservative” may have differing opinions on agricultural assistance, civil liberties, and foreign involvement because of the distinct nature of those issue arenas.

Clausen focused on five categories of policy: government management, social welfare, civil liberties, international involvement and agricultural assistance. However, Clausen studied the period from 1953-1964 and he notes that these need not be the same dimension over time, but some if not all are likely to reappear (Clausen 1973, 84-85). Recent studies show that these distinct issue areas can be seen in later Congresses. Crespin and Rohde (2010) find distinct voting differences in the areas of military, foreign affairs and agriculture in appropriations voting. Talbert and Potoski (2002) used co-sponsoring data and found distinct preferences on as many as four dimensions. Even within closely related issues, like rural development and agriculture, distinct policy domains can be shown (Hurwitz et al. 2001). Later policy debates like women’s issues can also be seen as distinct issue arenas (Norton 1999). Some argue that these

competing issue areas show where the influence of parties is lessened by regional, individual or constituent influences (Miller and Stokes 1963, Shipan and Lowry 2001).

Dimensionality in Roll Call Voting

How many issue areas should congressional researchers consider when conceptualizing the preferences of MCs? A first school of thought rejects the idea of policy domains and suggests we consider legislative preferences as a spatial model with a single horizontal axis that is often used to describe the liberal-conservative divide (Krehbiel 1999). The unidimensional model has become almost an assumption in the modern period, as “liberal” and “conservative” approaches to the role of government characterize the beliefs of an entire country. Poole and Rosenthal (1997) in their seminal work on Congress expand the conception of preferences slightly to include a second-dimension that is time sensitive accounting for the important, but divisive, issues of that legislative period. Classic second-dimension issues include slavery, civil rights, and bimetallism. All of these dimensions were regionally important issues that divide parties. They find that 85% of voting can be explained by accounting for preferences in these two dimensions (Poole and Rosenthal 1997, 27), earlier research had a similar finding of 80% using the first dimension and 87% on the second (Poole and Daniels 1985). The first dimension ideological score created by this procedure is now a central feature of studies on congressional voting and ideology, while the second dimension score is largely ignored. As Smith notes, the “spatial theorist does not worry about why legislators hold the policy positions they do and so treats the policy positions as exogenously determined preferences” (2007, 91).

Others who take a view similar to Clausen find these unidimensional conceptions lacking. Those concerned with specific policy positions prefer a multidimensional view of congressional preferences (Koford 1989; Maltzman and Smith 1994; Norton 1999; Snyder and

Groseclose 2001; Crespin and Rhode 2010; Dougherty et al 2010). One key argument against a single dimension of preferences stresses that scaling techniques used in spatial models can identify dimensions but not disaggregate other endogenous components being captured (Smith 2007). This argument stresses that ideological first-dimension scores are the results of a statistical analysis of roll call votes rather than a categorization of votes by a true measure of ideology. A vote on the Stupak-Pitts amendment, discussed earlier, would be weighed the same as a roll call vote on a procedural issue. Poole and Rosenthal describe this point when they say dimensional findings are “blind .. to the substance of the vote” (1997, 7). A second key argument mounted by Koford suggests that while one dimension may be clearly identified, other dimensions can be seen throughout the legislative process and they must be explained as well (1989, 960). Ideological scores based only on roll call voting ignore the complexity of policy issue dimensions that can arise in legislative proposals and committee deliberation.

Poole and Rosenthal challenge Clausen’s policy-context dependent decision rule in their book, using the 95th Congress as an example to test Clausen’s model against their own model that uses a procedure called NOMINATE to create ideological scores for legislators in two dimensions (1997, 54-55 & 233; Carroll et al. 2011). In their defense of a two-dimensional structure of preferences, they often miscategorize the nature of Clausen’s argument. While they find that Clausen’s policy areas fail to generate a separate spatial dimension, they ignore the much longer time horizon used by Clausen, as well as his contention that the policy dimensions he found may be more specific to his period of study. More importantly, these schools of thought conflict in their goals. Clausen’s goal is to describe voting calculus and decisions made in Congress. Distinctively different in aim, Poole and Rosenthal work to achieve ideological scores to predict outcomes and generate effective classifications. Finally, Poole and Rosenthal find that

their model outperforms any constituency based model. This should not be surprising, as the NOMINATE procedure inherently capture endogenous features of preferences, like constituency influences, yet they ignore the nuance of which constituency is effecting voting behavior (Fenno 1978; Bishin 2000). Voting on issues like abortion and gun rights may matter to specific parts of a personal or primary constituency. Finally, the technique used by Poole and Rosenthal may “outperform” other models, but statistical explanatory power is far different than theoretical and conceptual explanatory power. There is utility in the use of ideological voting scores, but reverting to this assumption in all cases neglects the nuance and layers used by legislators in their voting decisions.

Beyond the First Dimension: The Role of Issues

The recent scholarship finding evidence of multi-issue dimensions in congressional voting provides support for a return to Clausen’s law of categorization. Many individual examples of legislators who break from their traditional ideology to support causes in individual issue areas can be found, from pro-choice Republicans to NRA-rated Democrats. Moving from this anecdotal support, a quantitative approach to finding which issue areas break the traditional ideological dimension in the modern Congress can shed light on areas where legislators are operating under the expectations of the law of categorization.

Research Strategy

This research will use data from the Public Institutions and Public Choice (PIPC) database (Rhode 2004), combined with Poole and Rosenthal’s DW -NOMINATE roll call data (Carroll et al 2011) to examine issue areas in the 83-95th Congress and the 96th to the 107th Congress. The 95th Congress was chosen as a dividing line for a number of reasons. Poole and Rosenthal argue that the 95th Congress was an example of a unidimensional Congress with the largest number of

roll-call votes, further they argue that “from the late 1970s onward, roll call voting again became largely a matter of positioning on a single liberal/conservative” dimension (1997, 5). Other congressional scholars have described this period in Congress as “between legislative eras” (Loomis 1990, 15). Dividing the dataset equally, also fits Clausen’s argument about the long time horizon of salient policy domains. The roll-call votes in this data base are limited compared to the universe of roll-call votes in this period, as unanimous votes were not scaled in the DW-NOMINATE procedure and were dropped from analysis.

The dependent variable considered is the absolute value of the cutting line created in a two dimensional space to classify voting on the roll call. This procedure produces a line that correctly classifies a mean of 86% of votes in the pre-96th Congress, and 89% of votes in the post-96th Congress. The cut line produced is an angle separating the yeas and nays in the space, and the resulting angle can explain much about the dimensionality of the vote. Consider a vote with a 90 degree cutting angle; its vertical position means that the horizontal, liberal-conservative ideology is the only important dimension to classify votes. Alternatively, consider a horizontal line with slope of zero degrees, which would run parallel or on top of the traditional first dimension. This cutting angle would exclusively use the second dimension to classify votes. Using this observation, the “steepness” of the cutting line explains how much leverage the second dimension has at classifying votes. The absolute value of the cutting line measures the steepness of each cutting angle as it removes the impact of negative or positively sloped cutting angles.

Issue Areas and Independent Variables

This research tests Clausen’s theory of policy context decision rule by examining how different policy areas affect the steepness of the cutting line produced by the D-W NOMINATE

classification scheme. Beyond original issues considered by Clausen, additional areas are added to this analysis that reflect the categorization component of Clausen's theory. Issue area codes for gun control and abortion are often seen as areas of independence for Republicans and Democrats alike, and provide areas for position taking to reach primary or "prospective" constituencies (Fenno 1978, Bishin 2000).

Rural Development and Agriculture: These areas have been cited as the source of the extra dimensional preferences in many Congresses (Poole and Daniels 1985; Poole and Rosenthal 1997). Hurwitz et al (2001) found that agriculture and rural space is multi-dimensional, even within legislation. Hansen (1991) found significant impacts for the farm lobby on Congress in his research. Additionally, regional and constituent concerns could be captured by these areas. Rural Development is a classification of appropriations voting, whereas the variable for Agriculture includes subsidies and price supports, food stamps, farm credit and other non-appropriations related agriculture bills. As a regional influence, these issues should decrease the steepness of the cutting lines.

Foreign Policy: International involvement was one of Clausen's examples of a distinct policy domain (1973). Other researchers have found Foreign Policy to be an important dimension of congressional decision making (Talbert and Potoski 2002; Crespín and Rhode 2010).

Alternatively, Poole and Daniels found that Foreign Policy was best captured by the first dimension in their study (1985). Following the theory of Elazar (1994), varying regional and individual member's perspectives on foreign involvement should lead to a negative coefficient.

Energy and Environment: Talbert and Potoski (2002) find an environmental dimension to congressional voting. Additionally, issues in this policy area could have constituent, regional, or interest group influences. This category includes votes on oil exploration, energy subsidies,

pollution, National Parks, and vehicle emissions among others. These votes are hypothesized to decrease steepness of the cutting line.

Abortion: Following Norton (1999), who found evidence of dimensionality on gender voting in Congress, votes on abortion will be examined. A category for “gender issues” is not available in the PIPC dataset used to code issue content. Absent a good measure, roll call votes within the health and human services category were used which include the classifications of “family planning” and “abortion”. Abortion votes touch on a salient issue area to many primary constituencies and often are considered outside the traditional liberal to conservative dimension. Further, the political culture of regions can influence attitudes towards issue of family planning and abortion (Elazar 1994). Based on these theories, votes in this category should hypothetically decrease the steepness of the cutting angle showing a negative coefficient.

Crime and Criminal Justice: Civil liberties made Clausen’s list of distinct issue areas and this category of votes in the PIPC classification model fits most closely with the civil liberties arena outline by Clausen. This includes votes on pornography, drug control, criminal procedure, law enforcement assistance and others. Like the abortion vote variable, this category includes many social issues that were often of a second dimension.

Gun Control: Gun Control is also included in crime and criminal justice category, but is controlled for by an additional variable. Preferences on gun rights legislation would, theoretically, be difficult to classify on a liberal-conservative scale under traditional definitions. Additionally, gun rights voters could be a significant component of a “prospective” constituency as outlined by Bishin (2000). Gun control issues may divide parties as well as urban and rural legislators; they should affect the cutting angle.

Civil Rights: Poole and Rosenthal find that civil rights was the main issue comprising the second dimension in the House for the 81st, 86th, 87th, 90th, 92nd, 94th, 96th, and 97th Congresses (1997, 51). Classification success should increase for civil rights issues if it is captured by the second dimension. In the PIPC conception, this includes pay equity, age discrimination, gay rights, busing, as well the historical components usually classified as “civil rights” issues. Including this variable in the model also helps test for model robustness. If civil rights was a key, if not the only, component of the second dimension for a significant era in congressional history, there should be a large effect for civil rights legislation on the angle of the cutting line.

Party and Control Variables: Three additional variables were added to the models. First, a variable for which legislative session the vote is taken in is included. Members may vote differently on policy areas that could impact their electoral chances, especially as the election approaches. Second, dummy variables were added to include if roll call was a final passage or amendment vote. We should expect a more active second dimension on amendment voting because such votes often split parties, and because of this they hamper the success of a unidimensional classification structure.

Results and Discussion

The results of the ordinary least squares (OLS) regression models can be found in Table 1. The data show cautious support for issue-based dimensionality in voting behavior in Congress during the two eras. Poole and Rosenthal cited civil rights as the issue captured by the second dimension during much of the period of votes pooled to make the pre-96th model. As per that hypothesis, the cutting angle for civil rights issues were about 14 degrees less steep than a typical issue with a low standard error of a less than 2 degrees. This result is helpful to confirm the model design. However, other issue variables in the pre-96th Congress show that roll call voting on rural issues,

agriculture, foreign policy, gun rights, and environmental issues had a statistically significant reduction in the steepness, and therefore unidimensional structure of the votes. Roll call votes on amendments also showed significant effects on the cutting line, but only by a few degrees.

The post-96th Congress models found results similar to the model for the previous era. Rural development, agriculture, gun rights, and energy issues all reduced the steepness of the cutting line as with the previous period. The magnitude of the effect varied in some cases, as rural issues' effect on steepness lessened in the post-96th model. However, the most interesting change was the lack of significance for civil rights issues, replaced by the significance of abortion issues, with abortion issues becoming the second highest coefficient next to gun rights issues. There were positive and significant coefficients for crime/criminal justice issues, and final passage votes, suggesting these votes were more unidimensional than the others considered.

Table 1: Regression of Absolute Cutting Line Angle

	Pre 96th Congress	Post 96th Congress
(Intercept)	64.295*** (0.878)	66.618*** (0.578)
Session	-1.939*** (0.494)	-0.823* (0.346)
Rural	-16.109*** (2.419)	-7.028*** (1.266)
Agriculture	-18.568*** (1.280)	-12.931*** (1.431)
Foreign Policy	-6.298*** (0.938)	0.835 (0.693)
Abortion	2.476 (7.972)	-18.137*** (2.037)
Energy and Environment	-4.107*** (0.791)	-3.405*** (0.677)
Gun issues	-22.007** (8.287)	-23.473*** (2.730)
Crime and Criminal Justice	2.307 (2.288)	3.366** (1.153)
Civil Rights	-14.295*** (1.465)	0.757 (1.571)
Amendment	-2.567*** (0.652)	-2.701*** (0.396)
Final Passage	-0.432 (0.608)	2.080*** (0.455)
N	6320	12127

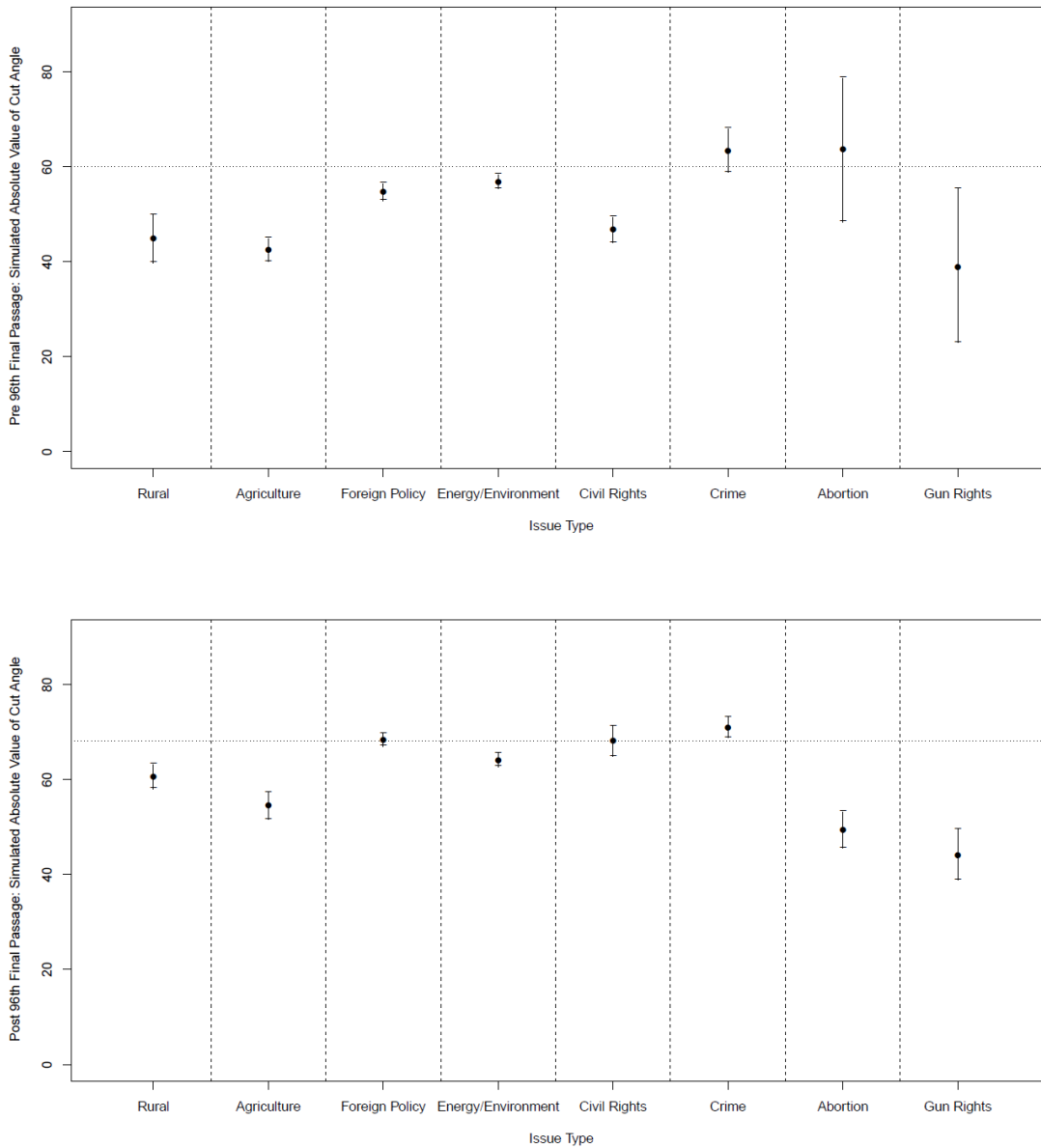
Note: Data from Rhode(2004) and Carroll et al (2011).
Standard errors in parenthesis. $p < .05=*$, $p < .01=**$, $p < .001=***$.

The variable for the session of the roll call was significant and negative. Roll calls which took place in the second session of a Congress, on average, were less clearly classified by the unidimensional structure. This provides some support for an electoral focus for both individual MCs and parties. As the biennial election of Congress nears, members of Congress are more likely to depart from their first dimension ideological preferences. If the first dimension captures party loyalty (Poole and Rosenthal 1997, 35), this result suggests individual concerns may trump party loyalty as the election looms.

Figure 1 shows graphically the changes between issue areas and party control between the pre and post-96th Congress. The Zelig program (Kosuke, King and Lau 2007) was used to conduct a 10,000-vote simulation based on the models specified in Table 1; these graphs show the expected cut line of simulated votes in each issue area with a 95% confidence interval. The horizontal line shown is the median of the absolute cut line in each period which can be used for comparison to the average roll call vote. As is evident on the graph, there were very few roll call votes on abortion and gun rights issues in the pre-96th Congresses, so the confidence interval shown is very large. The most striking evidence from the figure is the change in the status of civil rights issues, and the rise of abortion issues on the second dimension.

Statistical spatial modeling of roll call votes can produce a one dimensional ideology that allows for correct classification of a high percentage of votes. But the models presented here suggest that there is systematic underperformance in that approach when considering specific issue voting. These areas of underperformance are not fatal to the utility of ideology scores or the unidimensional model. In fact, these may actually help to illuminate features of congressional voting behavior and explain what is left unexplained from the unidimensional model.

Figure 1: Simulated Absolute Value of Final Passage Vote Cut Line by Issue Area: Pre and Post 96th Congress



These results lend support to Clausen’s policy context-dependent voting theory. Clausen notes, however, the salient policy contexts vary over time. Historically, regional concerns have been key sources for voting outside of traditional party or ideological-or first dimension-preferences. Regional based concerns like agriculture were significantly classified at a lower

level, so too were classic “culture war” issues like abortion and gun rights. Though it is possible these differences in culture are regional in nature as well (Elazar 1994). Discovering the character and content of the second dimension in the modern period, specifically within each Congress, is important. Dimensionality is a useful topic inasmuch as it informs our thoughts on voting behavior in Congress at a higher level. In this next stage, this research will focus on identifying which of these issues identified in the preceding analysis are affecting voting in each Congress in the post-96th era.

The Modern Congress and the Second Dimension

The evidence presented in the previous section provides support that issue areas have had a systematic correlation with the performance of the unidimensional model in the modern Congress. The models investigated previously cover 10,241 votes from 24 different congressional sessions, precluding the nuanced analysis required to judge the impact of these specific issue focuses in congressional voting. Looking at each Congress in the data set individually provides opportunities to see when these issues matter, and what effect they may have on dimensionality.

Clausen found stability for his issue dimensions over time, arguing that MCs maintained a consistent categorization of these issues in their decisions, but not that these issue categorizations maintained importance in each Congress. In one chapter, he explores the importance of each of the issue categories on voting in the 91st Congress and finds that only 4 of the 5 issue dimensions are operating (1973, 77). The results presented in Table 1 show that issue dimensions, most of which Clausen used in his original analysis, have continued to be significant beyond his period of study. That is not to say that they have been important in every Congress but rather, that there is evidence for the consistency of these issue dimensions over time.

Research Strategy

To examine the importance of these issue areas within each Congress, subsets of data were created for individual Congresses in the post-96th era. Data again were combined from the same sources (Rhode 2004, Carroll et al. 2011). The dependent variable is again the steepness of the cutting line created in DW-NOMINATE process as measured in the degrees. The number of scaled votes that were included in analysis varied from 518 in the 107th Congress to 1176 in the 104th. The results of these models are in Tables 2 and 3.

The models were specified to include every dichotomous variable for issue areas included previously, however in some Congresses these issues were not featured on any roll call vote as coded by the PIPC project (Rhode 2004). Where no results are displayed, as with gun control issues in the 96-98th Congress this is the result of no observations, not absence from the model. In the following pages, each issue area will be considered individually.

Rural Development: Rural development was a significant variable at lowering the steepness of the cutting angle in both periods examined previously. The results presented in these tables suggest that it has been an important issue area on the second dimension, but only for specific Congresses. Each significant coefficient for rural issues (103-105th, 107th Congresses) was in double digits, reaching a peak of an average 30 degree effect in the 104th Congress. The intercept in the 104th is 82, suggesting that most of the roll call votes in this session were more unidimensional.

Agriculture: Agricultural assistance had statistical significance and high magnitude coefficients in a majority of the specific Congresses examined. When pooled, agriculture issues were associated with an on average reduction of 13 degrees in the cutting line, yet in the 107th Congress the coefficient was over twice that estimate.

Table 2: Regression of Slope of Cutting Line by Issue Areas, 96-101st Congress

	96	97	98	99	100	101
(Intercept)	67.013*** (2.449)	44.088*** (3.445)	49.838*** (2.858)	55.203*** (2.264)	59.148*** (2.281)	56.530*** (2.356)
Session	-3.871** (1.331)	1.771 (1.906)	0.080 (1.720)	3.299* (1.334)	-0.994 (1.352)	1.409 (1.364)
Rural	9.343 (8.665)	13.086 (7.716)	13.397 (7.992)	-2.014 (5.553)	-8.164 (10.379)	3.445 (7.353)
Agriculture	2.066 (4.009)	-14.687** (5.070)	5.990 (4.681)	-2.611 (3.450)	5.302 (5.454)	-20.990*** (3.950)
Foreign Policy	2.877 (2.153)	-2.590 (4.092)	1.112 (2.979)	1.119 (2.026)	3.005 (2.355)	0.361 (2.304)
Abortion	-8.419 (14.937)			-10.911 (18.223)		
Energy and Environment	-2.280 (2.160)	-1.532 (3.772)	-2.282 (3.075)	-7.145* (3.304)	-3.273 (2.547)	1.059 (2.443)
Crime	1.959 (5.065)	25.458 (17.133)	9.183 (6.968)	2.388 (5.152)	0.407 (3.331)	0.640 (3.850)
Civil Rights	1.022 (4.894)	7.274 (8.158)	4.608 (6.953)	4.755 (5.314)	8.415 (4.350)	8.347* (3.988)
Gun Control				-18.749* (8.520)	-28.031 (18.160)	-14.698 (13.160)
Amendment	-1.446 (1.656)	8.157*** (2.260)	11.033*** (2.054)	3.632* (1.517)	7.309*** (1.538)	4.512** (1.555)
Final Passage	1.432 (1.709)	17.199*** (2.351)	17.700*** (2.179)	8.336*** (1.750)	9.247*** (1.691)	8.265*** (1.674)
R-squared	0.015	0.093	0.088	0.051	0.061	0.077
N	1067	679	792	777	771	752

Table 3: Regression of Slope of Cutting Line by Issue Areas, 102-107th Congress

	102	103	104	105	106	107
(Intercept)	61.923*** (2.309)	63.549*** (1.921)	82.014*** (1.702)	69.852*** (1.958)	64.472*** (2.182)	65.605*** (2.660)
Session	0.579 (1.289)	-0.032 (1.177)	-5.769*** (1.117)	-0.509 (1.204)	1.014 (1.261)	0.193 (1.654)
Rural	-10.293 (5.568)	-11.264** (4.207)	-29.875*** (3.516)	-16.209*** (3.216)	-3.435 (3.105)	-14.033** (5.384)
Agriculture	-20.672* (10.063)	-22.235* (10.219)	-22.132*** (5.076)	4.083 (8.109)	-26.271*** (6.787)	-27.775*** (4.914)
Foreign Policy	1.886 (2.625)	1.329 (3.353)	1.931 (2.324)	1.790 (2.296)	-3.143 (3.943)	-0.706 (2.979)
Abortion	-14.140* (6.187)	-8.403* (3.522)	-28.832*** (6.567)	-25.496*** (5.077)	-22.997*** (6.747)	-31.023*** (8.765)
Energy and Environment	-0.293 (2.339)	-2.290 (2.141)	-9.280*** (2.156)	-9.775*** (2.596)	-1.087 (2.401)	-12.393** (3.913)
Crime	9.223* (4.352)	7.611** (2.567)	4.570 (2.989)	11.107** (3.917)	-13.823*** (3.962)	17.893 (17.525)
Civil Rights	7.454 (4.697)		-2.699 (7.082)	-23.242 (18.055)	-8.295 (6.341)	3.287 (12.357)
Gun Control	-19.366* (7.810)	-26.813*** (7.629)	-41.469** (12.598)		-10.023 (5.551)	
Amendment	-0.560 (1.501)	0.220 (1.289)	-11.703*** (1.144)	-7.900*** (1.377)	-5.246*** (1.429)	-1.424 (1.805)
Final Passage	3.749* (1.594)	5.901*** (1.591)	-3.414* (1.513)	-2.485 (1.596)	2.165 (1.597)	2.742 (2.018)
R-squared	0.036	0.050	0.202	0.100	0.116	0.114
N	780	969	1176	946	874	518

For the 107th Congress, agriculture votes had an, on average, a change of 150% the standard deviation of the dependent variable. Looking at the error terms in the tables suggests the cases where the agriculture variable was not statistically significant may have been due to lack of observations.

Foreign Policy: The model presented in Table 1 suggested some influence for foreign policy issues on the cutting angle, yet it was low in magnitude. The coefficient showed only a one-fifth change in the standard deviation of the dependent variable. When looking at each Congress individually presented in Tables 2 and 3, these results seem to vanish. In no Congress was this issue area shown to affect the dimensionality of the vote.

Abortion: The most interesting results presented in this model show the rise of abortion as a dimensional issue in Congress. The 96th-101st Congress show nearly no votes on abortion issues, in most cases being dropped as a variable because no votes were classified in this issue area. From the 102nd -107th Congress roll call votes on abortion had a consistently flatter cutting angle than the other issues considered.

Energy and Environment: Energy and environmental issues were sporadic in their impact on the dimensionality of roll call votes, only having significant effects in four of the twelve Congresses modeled. In the cases they were significant, their coefficients were less than half that of other issue areas in the model.

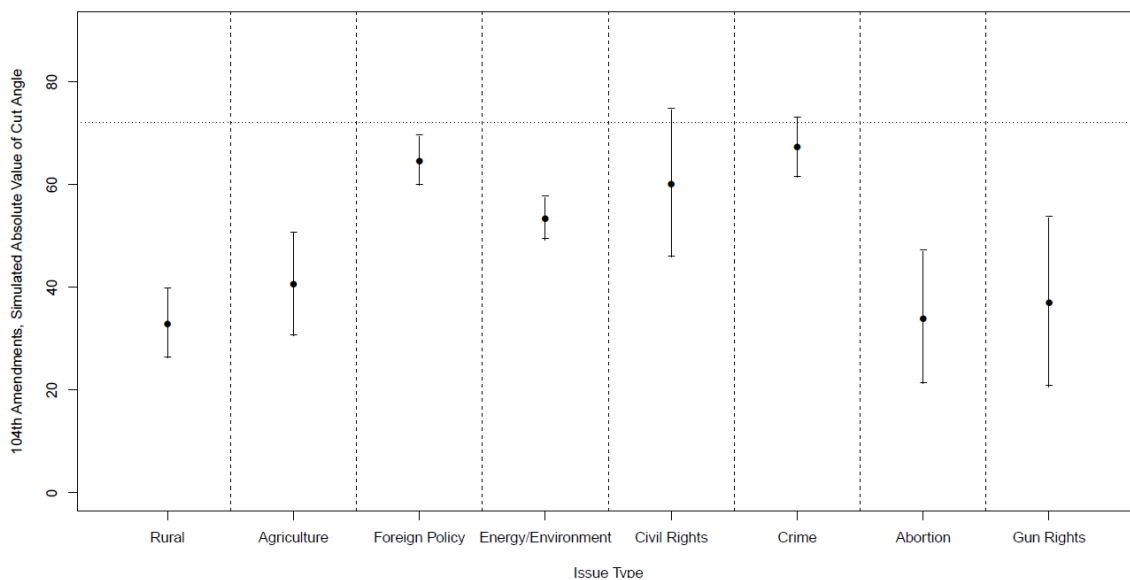
Crime: In all of the models, only four variables showed positive and significant effects on the steepness of the cutting line. Three of these cases were in the crime and criminal justice variable. Though the magnitude was less than other variables, this suggests that votes on crime and criminal justice are explained by liberal to conservative ideology more than other issue areas.

Civil Rights: The results in Table 1 showed that civil rights had not been an issue area with any leverage on the cutting angles of votes in the post-96th Congress. In only one Congress did the issue have a significant effect (p-value=0.036). This result suggests that the civil rights dimension of voting in Congress has largely disappeared and, if anything, on civil rights is largely expressed on the first dimension.

Gun Control: The largest coefficient in the post-96th Congress model in Table 1 was found in the issue variable for gun control. When we look at the level of each Congress, we see that this was largely the impact of a few years of congressional work. In the 104th Congress the coefficient doubles the standard deviation of the dependent variable, representing the largest impact of the variables in the models in Tables 2 and 3. In the following 105th Congress there are no recorded votes coded as gun control issues, 21 votes in 106th, and no votes again in the 107th Congress.

Figure 2 provides the results of a 10,000 vote simulation based on the regression model for the 104th Congress (Kosuke, King and Lau 2007). The 104th Congress, the first term of

Figure 2: Simulated Absolute Value of Amendment Vote Cut Line by Issue Area: 104th Congress



Speaker Newt Gingrich and the “Contract with America” was chosen because it has the highest number of cases, highest r^2 , and largest initial intercept of 82, suggesting a mainly unidimensional Congress.

A horizontal line was placed at the median cutting line of 72.15, the mean was 66, with a standard deviation of 19.2. The bars in each issue area represent the 95% confidence intervals for each issue area. These results can be compared with Figure 1, which displayed the simulation results for the pre and post 96th Congress. The low levels of voting in many of the issue areas precluding an over focus on the results of this simulation. However, the maximum 95% confidence interval for votes on rural development and abortion issues is one standard deviation “flatter” from the mean cutting line. In the 101st Congress, no roll call votes were coded as abortion votes, and rural issues were not correlated with a lower cutting line.

Agenda Setting and Dimensionality

The literature on agenda setting provides theories as to why we should expect certain issues to become salient in any given time period. As with Clausen’s “law of categorization” these ideas are drawn from decision making theories in psychology. Some individuals may pride themselves as multi-taskers, but cognitive processing is generally categorized by selective information and “bottlenecks” of attention (Baumgartner and Jones 2002, 16). This dynamic can also be described as serial, rather than parallel, processing where attention to issues is focused on a case by case, rather than multiple cases at once. For individuals, this is one way rational behavior is “bounded” or limited. While this is a useful model of individual and institutional behavior, there are obvious capacities for Congress to consider multiple issues (for instance: Baumgartner and Gold 2002, 280-281). It may be more useful to think of serial processing in terms of attention levels in institutions, rather than the work itself. The issues on the second dimension historically

were often the most salient issues of the time. Civil rights and bimetallism were the subject of much legislative action, debate, and attention given by Congress in those periods.

Slavery, the coinage of silver, and voting rights have had their place on the congressional agenda, and will not be the subject of another congressional vote. Issues routinely hit the public agenda and then disappear. New agenda issues in which parties have do not have a consistent positions create the possibility for specific issue dimensions to rise on the agenda. Rural issues, abortion, and gun control votes were almost nonexistent in Table 2, but they became some of the most significant contributors to the dimensionality of voting from 102nd-107th Congress.

The logic of Clausen's law of categorization lies in the fact that legislators have general characterizations of issues that can be used to guide their decision making on specific roll call votes. It is likely that positions on gun control and abortion of legislators have not changed, but the agenda did. As issue dimensions become relevant, or disappear as the case may be, the importance of issue areas or a second dimension may change. As the models from the Reagan era show (97-100th), issue areas played no role in affecting dimensionality. Clausen, writing about the disappearance of dimensions explained:

“[W]e may find that some of the five dimensions are currently viable whereas others have disappeared... In the latter instance, it is anticipated that the new dimensions will have emerged in place of the old. But this is no cause for anxiety, rather, it is a reason for excitement, as the dynamics of change have potential for exposing the conditions that produce new policy dimensions and the demise of old. (1973, 58)”

The analysis presented in Tables 2 and 3 show some concrete examples of issue dimensions becoming part of the congressional agenda and affecting the usual liberal to conservative separation of voting behavior. Cases like the Reagan-era unidimensionality, and the rise and subsequent disappearance of gun control during the period studied present important examples of

the dynamic nature of issue attention and dimensionality. Comparing Figures 1 and 2 demonstrates that individual issue areas don't seem to have a large effect in terms of magnitude on dimensionality in a given era, but in a specific congress we could expect the average cutting line to be below 45 degrees. The apparent dominance of the liberal-to-conservative dimension is lessened when examining specific issue areas in a concise time period.

Dimensionality in the Legislative Process

The previous sections have documented how second dimension issue preferences can affect roll call voting. In the first section, the research suggested that issue areas consistently affect the importance of the second dimension on roll call votes across legislative eras. The models presented also provide evidence for the disappearance of the civil rights issue dimension and the rise of the abortion dimension. This result informed the second section, which focused on the role these dimensions can play in a shorter time periods by examining specific meetings of Congress. Many of the issue areas described by Clausen nearly 40 years ago still seem to be important dimensions in roll call votes. Agriculture and rural development issues have had significant effects, both statistically and in magnitude, on the relevance of the second dimension on roll call voting. While issues may not always be agenda items in a given Congress, the relevance of Clausen's law of categorization seems to hold. These results point to a third important question, where in the process are these votes occurring?

Some evidence for the nature of these votes can be found in the preceding analysis. In Table 2, we see the coefficient for final passage and amendment voting consistently significant and in the positive direction. As the 104th Congress emerges in Table 3, however, we see the coefficients flip signs in the cases they are significant. In the earlier period, amendments and final passage roll calls associated with a stronger first ideological dimension. In cases like the

98th and 100th Congress, these were the only variables found to be significant. Amendments that were the subject of roll call votes during the 104th-106th Congress were correlated with stronger second dimension of preferences, on average.

Cox and McCubbins's (2005) cartel theory of party government asserts that parties should avoid any bringing any issues to the floor that might produce intra party conflict. Successful party leadership, in the pure form of this theory, will be unidimensional resulting in policy structured around the majority median legislator with consistent minority party losses. Evidence suggests that gatekeeping power of committees exercised by the majority party lowers the perceived unidimensional structure of voting (Snyder 1992), and that, during periods of strong majority parties agenda setting powers push back latent dimensionality (Dougherty et al 2010). For cartel theorists, an effective vote would have a 90 degree cut line, running perpendicular to the first ideological dimension. From this perspective, it should be surprising that the House of Representatives, with rules on debate and amendments, should see extra dimensionality at all.

Some party splitting votes may be good for the majority party. We could expect members to be given the freedom to break with parties on specific issues for electoral reasons (Mayhew 1974). The wide variation in the culture and ideology of the individual constituencies might necessitate party leaders allowing members opportunities for "position taking" (Fenno 1978, Elazar 1994). A majority party relies on maintaining its membership beyond the current session. Theoretical reasons may explain second dimension voting even if we remove the assumption of party influence. Roll calls poorly explained by a single dimension may just be a necessary consequence of legislators expressing preferences and moving the bill to the floor median or "pivotal" ideological point to ensure passage (Black 1948, Krehbiel 1998).

Research Strategy

To study the effect of the vote type and issue areas on the dimensionality of votes, a subset of votes in the Clinton era (103-106th Congresses) was created from the original dataset used in the preceding sections. An OLS regression model using the absolute value of the cut line was created. A dichotomous variable was created to code the type of vote. Votes on procedures were coded 1 and non-procedural votes were coded 0. Using the PIPC dataset used previously (Rhode 2004, Carroll et al 2011), non-procedural votes include the content of the final passage and amendment variables used previously as well as votes on veto overrides and the final passage of resolutions. The dichotomous variable for procedure was interacted with the significant variables for the period as displayed in Table 3: gun rights, agriculture, abortion, rural development and energy environment. The results of this model are presented in Table 4.

Table 4: Procedural Voting in Issue Areas, Clinton Years

(Intercept)	64.984*** (0.381)
Procedure Vote	3.117*** (0.641)
Gun Issue	-26.885*** (4.276)
Agriculture	-26.832*** (3.871)
Abortion	-17.652*** (3.961)
Rural	-21.405*** (2.031)
Energy and Environment	-6.812*** (1.274)
Procedural × Gun	2.156 (7.155)
Procedural × Agriculture	35.821*** (8.975)
Procedural × Abortion	0.100 (5.115)
Procedural × Rural	21.554*** (3.956)
Procedural × Energy and Environment	10.131*** (3.051)
N	3965

Note: Data from Rhode(2004) and Carroll et al (2011).
Standard errors in parenthesis. p < .05=*, p < .01=**, p < .001=***.

The results in Table 4 are striking. The interactive variables show a complete reversal of the coefficients for the individual issue dimension codes. In every case, the coefficient for the

interactive variable was higher than the individual issue code. This suggests that when the vote on an issue deals with a procedural item, the second dimension's importance was reversed. There were 3965 votes in the Clinton presidency used in this analysis, of which 1346 were procedural. Importantly, 333 were on the passage of special rules, and of the 170 were motions on the previous question 143 involved the passage of special rules. The importance of the structure of these rules, and the ability for negative agenda control by parties through these rules has been demonstrated in previously (Oleszek 2007). If legislators are voting based on unidimensional and, by extension, partisan preferences solely on procedural issues this is a significant finding.

What is perhaps more intriguing is the results for gun rights and abortion issues on procedural votes. Contrary to the way the rest of the variables perform, there was no significant influence for these issue dimensions in procedural votes. There may be good reason for these results. Groups like the National Rifle Association and Brady Campaign in gun control issues, and National Right to Life Committee (NRLC) and National Abortion Rights Action League (NARAL) create legislative profiles for MCs on issues based on roll call votes (Roberts and Bell 2008). These votes are often on final passage and amendment votes, but these procedural motions are used for issues where roll calls were not taken. Two of the eight votes for NARAL in 2011 were procedural motions, two of 10 NRLC's votes were on procedural votes. Position taking may have been a crucial incentive for members of Congress when votes concern issues so important to the primary or prospective constituency (Fenno 1978, Bishin 2000).

Is it possible the results presented in Table 4 are due to the partisanship that marked the Clinton presidency? When parties are strong at controlling the floor agenda, voting on procedural issues should in theory be more unidimensional and party based, even if issue activity is affected by the second dimension. To test this idea, an OLS model was created see how if the interactive

effect of procedural votes in issue areas was consistent. This model used the dataset from the first model in Table 1, the pre 96th Congress model (1953-1980). The consistent dimensionality of rural and agriculture issues across these periods allowed for comparison, additionally the disappearance of votes coded as civil rights and the rise of abortion roll call votes allowed for testing of a salient social category in each period. The results are presented in Table 5 below.

Table 5: Dimensionality in Procedural Voting: Pre 96th and Clinton Years

	Pre 96th	Clinton Era
(Intercept)	59.098*** (0.298)	64.186*** (0.366)
Procedural Vote	1.498* (0.593)	3.836*** (0.628)
Rural	-14.607*** (2.796)	-20.607*** (2.049)
Agriculture	-16.355*** (1.487)	-26.034*** (3.909)
Civil Rights	-11.846*** (1.865)	
Abortion		-16.854*** (4.001)
Rural × Procedural	-2.066 (5.677)	20.835*** (3.994)
Agriculture × Procedural	-3.933 (2.934)	35.103*** (9.067)
Civil Rights × Procedural	-4.208 (3.030)	
Abortion × Procedural		-0.618 (5.165)
N	6320	3965

Note: Data from Rhode(2004) and Carroll et al (2011).
Standard errors in parenthesis. $p < .05 = *$, $p < .01 = **$, $p < .001 = ***$.

While procedure votes are associated with a minimal increase in the steepness of the cut line, the results for the pre-96th Congress are much different than the Clinton presidency. A few hypotheses for this result should be considered. It is possible that the kind of interest group activity suggested previously is at work here as well (see Hansen 1991). It could also be a result of a change in procedural norms and strategies. The special rule seems a likely suspect, but the pre-96th universe of votes includes 344 votes on special rules out of 1623 procedural votes (21.1%) compared to 333 special rule votes of 1346 procedure roll calls (24.7%) in the Clinton presidency. A final hypothesis is that general party systems or eras are responsible for this

dynamic. Perhaps the “Conservative Coalition” years in the House procedure votes were affected by two dimensions and in the partisan “Contract with America” era of impeachment the first dimension party ideology was dominant. In any of these cases, the effect of the type of vote on the dimensionality of the vote warrants further research.

Conclusion: The Role and Importance of Issues on the Second Dimension

This research sought to explore the importance of the second dimension in congressional voting in the modern Congress. Second dimension issues have been critically important in American history, and the persistence of party division on key political issues into the modern Congress provided support that the issues outside the liberal to conservative continuum were not as insignificant as some authors have claimed. By exploring the relevance of the second dimension on roll call voting from three different perspectives, this study has shown consistent support for the impact of second dimension preferences and for Aage Clausen’s “law of categorization” and issue areas.

In the first section of this paper two legislative eras were examined to explore the persistence of the issue areas outline by Clausen and other theorists. The periods from 1953-1979 (83-96th Congress) and 1980-2008 (97th-110th Congress) both had statistically significant effects for rural development, agriculture assistance and gun rights issues on the dimensionality of the roll call vote. The civil rights issue dimension in the pre-96th Congress seems to have been replaced as rise the abortion issue dimension in the post-96th Congress proved to have significant effects. These results show the continuity of issue dimensions across a wide stretch of congressional history, but also that new issues may rise to significance.

The results of the first part of this analysis showed both the consistency of issues like agriculture, and the emergence of new issues. Given the evidence of issue intrusion, the next step

in this research was to explore how these individual issue areas could affect the dimensionality of roll call voting within specific meetings of Congress. Looking at 12 different Congresses, there is indeed great variability in the importance of each issue over time. In the first six congresses (96th-101st) there were often not even enough roll call votes on abortion to include the variable in the analysis, in the following six congresses it became one of the most significant issue areas affecting the dimensionality of voting. A similar dynamic was true for gun and rural issues. While the evidence for the impact of the second dimension was still seen in this analysis, the influence of the agenda was also apparent.

The final section of this research explored whether issue dimensions were evident in procedural votes, or only on roll calls affecting the language of legislation. The evidence here was surprising. When looking at the Clinton-era roll call votes, a vote on an agriculture issue was shown to be associated with an on average 26 degree decrease in the absolute value of the cutting angle. Yet when an interactive variable was included to see how procedural votes on agriculture affected the cutting line, the result was an average increase of 35 degrees. The reversal in the sign of the coefficients was surprising, procedural votes were significantly more unidimensional than votes on amendments and final passage. This could be explained by features of the Clinton era House, however. The evidence from a comparison model created with the pre 96th Congress data showed less dimensionality as procedural votes did not have a statistically significant effect on the cutting line of votes in the earlier period.

The evidence presented in the models and simulations all confirm the vibrant role of issue areas play on the dimensionality of voting in the modern U.S. House. This analysis, however, is only the next step of many in a growing recent literature on the dimensionality in Congress (Crespin and Rhode 2010, Dougherty et al 2010). Many questions are left to be answered, and

the results suggesting how dimensionality changes with the type of vote may provoke more questions than the results answer. The Senate was not even included in this analysis, precluding any discussion of the upper house in this analysis. From case studies of dimensionality and the important issue areas within each Congress- or within each chamber- to the role of procedure and parties on the dimensionality of roll call votes, there are many avenues and questions left for future research.

In their work on roll call voting, Poole and Rosenthal argue that “from the late 1970s onward, roll call voting again became largely a matter of positioning on a single liberal/conservative dimension (1997, 5).” It cannot be argued that the liberal to conservative dimension is unimportant, and the likelihood of another issue matching civil rights as a second dimension component is doubtful. However, this research supports challenges to the claim of a strictly unidimensional Congress (Koford 1989, Wilcox and Clausen 1991, Crespin and Rhode 2010). The aggregation of roll call votes may just create the appearance of a nearly dominant unidimensional structure. Given position taking motives and the regional interests of a district based congressional constituency, specific issue areas will continue to conflict with the liberal to conservative ideology of some legislators. The political importance of these issue areas means the power of the second dimension issues should not be overlooked. Future research is needed to help explore both the causes and implications of these findings. But as the story of the Stupak amendment showed, these second dimension issues are crucial to congressional politics and policymaking.

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