Changing Minds? Not In Congress!

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Abstract

This paper shows a variety of evidence that members of Congress are ideologically consistent. Based upon the roll call voting record, once elected to Congress, members adopt a consistent ideological position and maintain it over time. There may be changing minds, but they are not in Congress.

1. Introduction

The purpose of this paper is to show evidence that members of Congress die in their ideological boots. That is, based upon the roll call voting record, once elected to Congress, members adopt an ideological position and maintain that position throughout their careers – once a liberal or a conservative or a moderate, always a liberal or a conservative or a moderate. The exceptions prove the rule – for every Richard Schweiker who went to the mountaintop with Ronald Reagan in 1976 and saw conservatism, or Charles Goodel who saw the true light of liberalism when he switched from the House to the Senate in 1968, there are hundreds of other Senators who never undergo a conversion experience.

Ideology is measured by applying a simple spatial voting model to the roll call voting data for the 80th through the 107th Houses and Senates. This spatial model was proposed by Hinich and Ordeshook [Cahoon, Hinich, and Ordeshook (1976); Ordeshook (1976); and Hinich and Pollard (1981)] and then developed in depth by Hinich and his colleagues [Enelow and Hinich (1984); and Hinich and Munger (1994, 1997)]. The model is also discussed at length in Poole and Rosenthal (1997), so I will only sketch the basic ideas here.

Simply stated, the Hinich-Ordeshook spatial voting model embodies the fundamental insight of Philip Converse (1964) about ideology – or stated in Conversian terms, a *belief system* – namely, that issues are interrelated or bundled and that ideology is fundamentally *the knowledge of what-goes-with-what*. In contemporary American politics the knowledge that a politician opposes raising the minimum wage makes it virtually certain that the politician favors a balanced budget, opposes unfunded federal mandates to the states, opposes universal health care, favors ending the entitlement status of welfare, opposes affirmative action, and so on. In short, a *conservative* and almost certainly a Republican. Converse called this bundling of issues *constraint* – the ability, based on one or two issue positions, to predict other (seemingly unrelated) issue positions.

In a standard spatial model of Congressional voting each issue is modeled as an ordered dimension of alternatives and each member is assumed to have an ideal point on, and single-peaked preferences over, each issue dimension. The existence of constraint has a straightforward geometric interpretation. It means that the issues lie on a low-dimensional hyperplane. Stated another way, the ideal points in the *basic space* defined by the hyperplane generate all the issue dimensions through simple linear maps. This is the essence of the Hinich-Ordeshook spatial model. Algebraically, let p denote the number of legislators, n denote the number issue dimensions, and s denote the number of dimensions in the basic space. The spatial model is summarized by the relationship:

$$\mathbf{XW} = \mathbf{Y}$$

where **X** is the p by s matrix of individual positions in the basic space, **W** is an s by n matrix of linear maps, and **Y** is the p by n matrix of issue dimensions. **W** maps the basic space onto the issue dimensions. The simplest example is the *liberal-moderate-conservative* continuum so familiar to journalists and the political cognoscenti. "One judgmental dimension … that has been highly serviceable for simplifying and organizing events in most Western politics for the past century has been the liberal-conservative continuum.." (Converse, 1964, p.214). In terms of the algebra given above, every issue dimension would be a simple linear transformation of the liberal-conservative dimension.

In an errorless world, the correlation between any pair of issues (the columns of **Y**) would be one.

Although the existence of constraint produces low dimensionality it also presents problems in *interpreting* the basic dimensions it produces. In particular, this constraint or bundling of issue positions does not have to be strictly logical. Indeed, in our current political system one party – the Republicans – favors tight regulation of private personal behavior (abortion, homosexual rights, assisted suicide, etc.) and low regulation of the economy; while the opposite party – the Democrats – favor little if any regulation of private personal behavior and much greater regulation of economic behavior. There is no *logically consistent* philosophy that underlies these issues. To make matters even more incoherent, the issue of gun control does not fit comfortably into the category of an "economic" issue or a "social" issue. Viewed as a "social" issue, gun control has the two parties on the *wrong* sides – the Republicans *oppose* further regulation, the Democrats *want more* regulation.

The fact that almost all of these issues can be accounted for by a single voting dimension that is commonly labeled liberal-conservative does not help us understand the "why" of the system. What do "liberal" and "conservative" *mean* beyond simply the labels for the endpoints of this basic dimension?

This problem of interpretation raises the questions: "How do such disparate policy positions get bound together?" and "How could such an incoherent system persist?" The answer is simple -- *the elites are true believers*. Logic in its strict deductive form is not necessary – *belief, passionate belief, is the necessary ingredient*. "What is important is that the elites familiar with the total shapes of these belief systems have *experienced* them as logically constrained clusters of ideas, within which one part necessarily follows from another"[1] (Converse, pp. 210-211). James Madison in *Federalist 10* points out that "as long as the connection subsists between his reason and his self-love, his opinions and his passions will have a reciprocal influence on each other; and the former will be objects to which the latter will attach themselves" (Wills, 1982, p. 43). In other words, people hold their political views – even those that *are* logically organized -- *with passion*. Eric Hoffer in his masterpiece *The True Believer* analyzes the nature of mass movements – both religious and political – and comes to similar conclusions. Hoffer observes that "the facts on which the true believer bases his conclusions must not be derived from his experience or observation but from holy writ….it is startling to realize how much unbelief is necessary to make belief possible. What we know as blind faith is sustained by innumerable unbeliefs" (Hoffer, 1951, p.79). For political elites, constraint and intensity of belief (passion) are two sides of the same coin.

Constraint coupled with intense belief implies that *politicians' ideal points in the basic space will be stable*. True believers do not compromise their principles. This is especially true at the ideological extremes. Realistically, intensity of belief should itself be a function of the position of the legislator in the basic space. The further a legislator is from the center of the space, the more intense the belief and the greater the stability. What can change, however, are the mappings of the basic dimensions onto the issue dimensions (the columns of **W**). For example, the 9/11 attacks made members of Congress more hawkish. Their basic space positions, **X**, did not change, but the mapping (the appropriate column of **W**) of the basic space positions onto a defense spending dimension (the appropriate column of **Y**) changed in that everyone was shifted towards a more hawkish position. I will return to this aspect of the model after I have presented the evidence for the fundamental stability of the basic space of American politics since the end of World War II.

Poole and Rosenthal (1997) and McCarty, Poole, and Rosenthal (1997) utilize the NOMINATE model to fit the Hinich-Ordeshook spatial model to Congressional roll call voting and find that, with few exceptions, roll call voting throughout American history has been simply structured. In the post World War II period only two dimensions are required to account for the great bulk of roll call voting. The primary dimension is indeed the liberal-moderate-conservative dimension epitomized by voting on the basic issue of the role of government in the economy. The second dimension captured the conflict over race and civil rights. With the passage of the 1964 Civil Rights Act, the 1965 Voting Rights Act, and the 1967 Open Housing Act, this second dimension slowly declined in importance and is now almost totally absent. Race related issues – affirmative action, welfare, Medicaid, subsidized housing, etc. – are now questions of *redistribution*. Voting on race related issues now largely takes place along the liberal-conservative dimension and the old split in the Democratic Party between North and South has largely disappeared.[2] Voting in Congress is now almost purely one-dimensional – a single dimension accounts for about 92 percent of roll call voting choices in the 107th House and Senate – and the two parties are increasingly polarized (Poole and Rosenthal, 1984; 1997; 2001; King, 1998).

Given the withering of the second race-related dimension during the past 30 years, I will focus my analysis of ideological stability mainly on the primary liberal-conservative dimension of Congressional voting during the 1947 to 2002 period (the 80th through the 107th Congresses). I will utilize several measures: Optimal Classification (OC) one-dimensional rank orderings and two-dimensional coordinates (Poole, 2000; 2001; 2002, chap. 2); W-NOMINATE one and two-dimensional scores (Poole and Rosenthal, 1997); Heckman-Snyder one and two-dimensional scores (Heckman and Snyder, 1997); one and two-dimensional Common Space scores (Poole, 1998); and DW-NOMINATE one and two-dimensional scores (McCarty, Poole, and Rosenthal, 1997; Poole and Rosenthal, 2001).[3]

I use Optimal Classification as my baseline because it is a non-parametric scaling method. The only assumptions made are that the choice space is Euclidean and that legislators making choices behave as if they utilized symmetric, single-peaked preferences. Other than these assumptions, no assumptions are made about the functional form of individuals' preferences and no assumptions are made about the distributional form of individuals' errors in making choices. In one dimension, OC produces a rank-order that maximizes the number of correctly classified roll call voting decisions. In two dimensions, it produces ideal points and cutting planes for the roll call votes that maximizes the number of correctly classified choices. In two or more dimensions, OC produces essentially the same configuration as NOMINATE and the Heckman-Snyder method (Heckman and Snyder, 1997).

2. Unchanging Minds: Post-World War II Ideological Stability

I make the assumption that all members of Congress who do not change their party affiliation including those who change from the House to the Senate[4] have fixed ideological positions throughout their careers. Party switching is the one clear-cut case where ideological change should occur (Oppenheimer, 2000; Nokken, 2000; McCarty, Poole, and Rosenthal, 2001; Nokken and Poole, 2002). Accordingly, I treat legislators who switch parties as *two* individuals in this analysis.

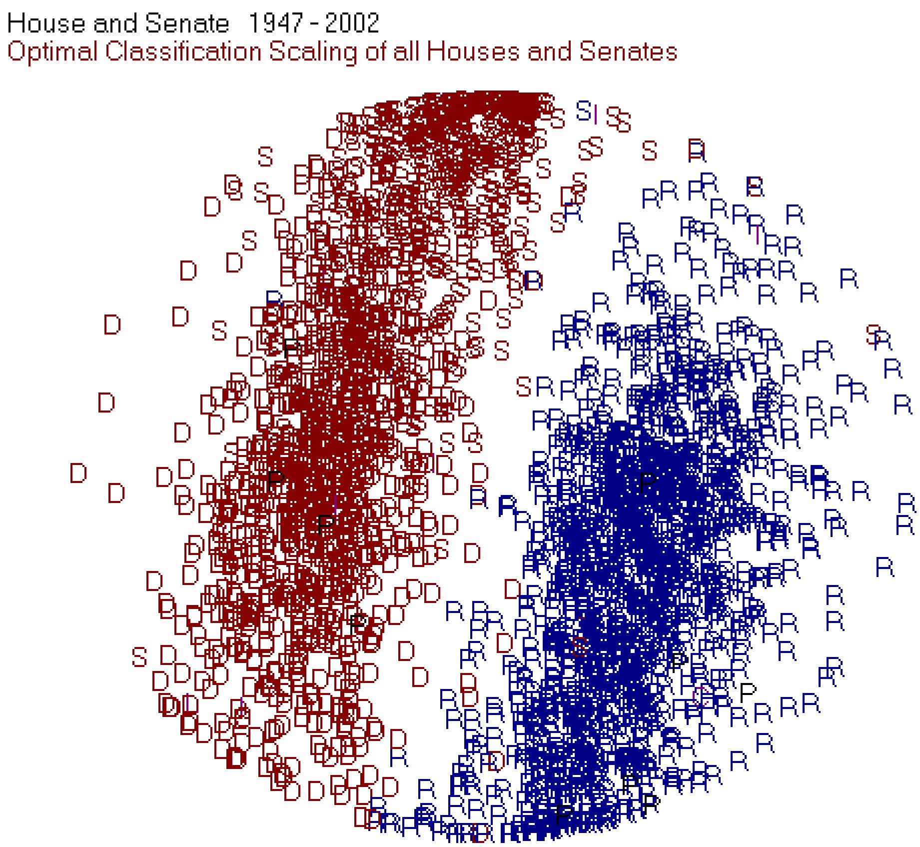
To measure ideological stability, I employ a simple strategy. First, I use Optimal Classification to simultaneously scale all Houses and Senates since the end of World War II. In one dimension OC produces a rank ordering of all members and in two dimensions OC produces an ideal point for every member. The Presidents since Eisenhower are included in the scalings because they can be treated as members of Congress by using the *Congressional Quarterly* Presidential support roll calls. Presumably, if the President were able to vote, he would vote the direction indicated in the support roll calls (McCarty and Poole, 1995). Consequently, Presidents Eisenhower through George W. Bush are treated as members of both the House and Senate. The 140 legislators who served in both the House and Senate plus the 10 Presidents yields 150 legislators who act as "glue" to place the House and Senate in the same space.

Second, I apply OC separately to all twenty-eight Houses simultaneously and all twenty-eight Senates simultaneously and compare these estimates to those of the overall OC scaling using Spearman and Pearson correlations. Third, I compare the Common Space and DW-NOMINATE coordinates for each Chamber over the post WWII period with the corresponding OC estimates. Fourth, I separately scale every House and Senate in one and two dimensions using OC, W-NOMINATE, and Heckman-Snyder. I then compute Spearman/Pearson correlations between these one-Congress scalings and the corresponding coordinates/rank-orders in the overall OC scaling.

Before turning to these analyses, it will be helpful in the discussion below to first show the estimated two-dimensional joint OC configuration and use it to briefly discuss the changes in congressional voting since the end of World War II.

Figure 1 shows the two-dimensional spatial map for the 2,763 unique members of the House and Senate for Congresses 80 to 107. The first dimension is liberal-conservative and the second dimension captures conflict over race and civil rights. The "S" tokens are Southern Democrats, the "D" tokens are Northern (non-South) Democrats, and the "R" tokens are Republicans.[5] Although there is much over striking, the S tokens are concentrated at the top of the configuration. Before the 1980s, the second dimension clearly divided the Democratic Party into Northern and Southern factions and there was, in effect, a three-party system in Congress. The Northern and Southern Democrats formed a coalition to organize the chambers and divide the spoils, the Northern Democrats and Republicans formed a coalition to pass civil rights legislation, and the Southern Democrats and the Republicans formed the "conservative coalition".

Figure 1: OC Applied to All Houses and Senates 80 – 107 Congresses



The slight clockwise tilt of the "channel" that divides the two parties is a reflection of the cross-party coalitions. Although non-parametric, OC behaves as if it were extracting dimensions according to how much "variance" they account for. The Southern Democrats voted with the conservative Republicans against the Northern Democrats and the liberal Republicans (located at the bottom of the second dimension closest to the Northern Democrats) enough times so that when projected onto the first dimension, many liberal Republicans are to the left of many of the Southern Democrats.

Figure 2 graphs the first dimension means of the two chambers for the twenty-eight Congresses using the 2,763 unique legislators (the second dimension means are all close to zero for both chambers throughout the time period). Not surprisingly, the chamber means of the House and Senate track one another fairly closely. The Senate mean is to the left of the House mean during the 1960s and most of the 1970s but before and after the roles reverse. Both chambers became substantially more liberal from the 1940s into the 1960s and both chambers have become more conservative since the Reagan era. Viewed over a long period of time, there is no pat answer to the question: "is the Senate more liberal than the House.[6]" It depends upon the time period.

Figure 2: First Dimension Means
House vs. Senate

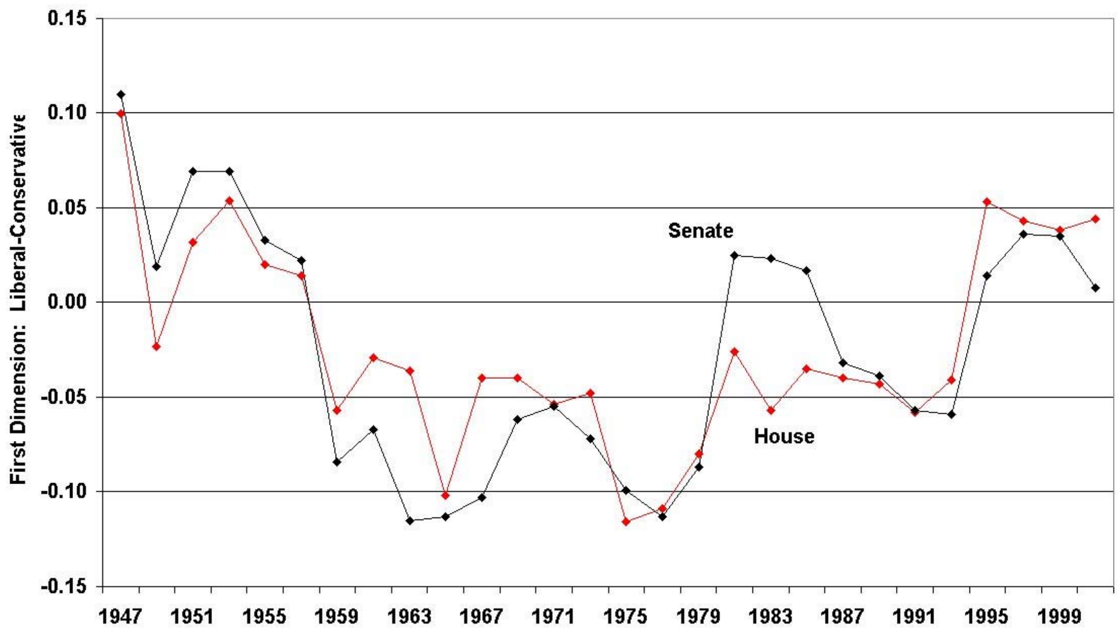
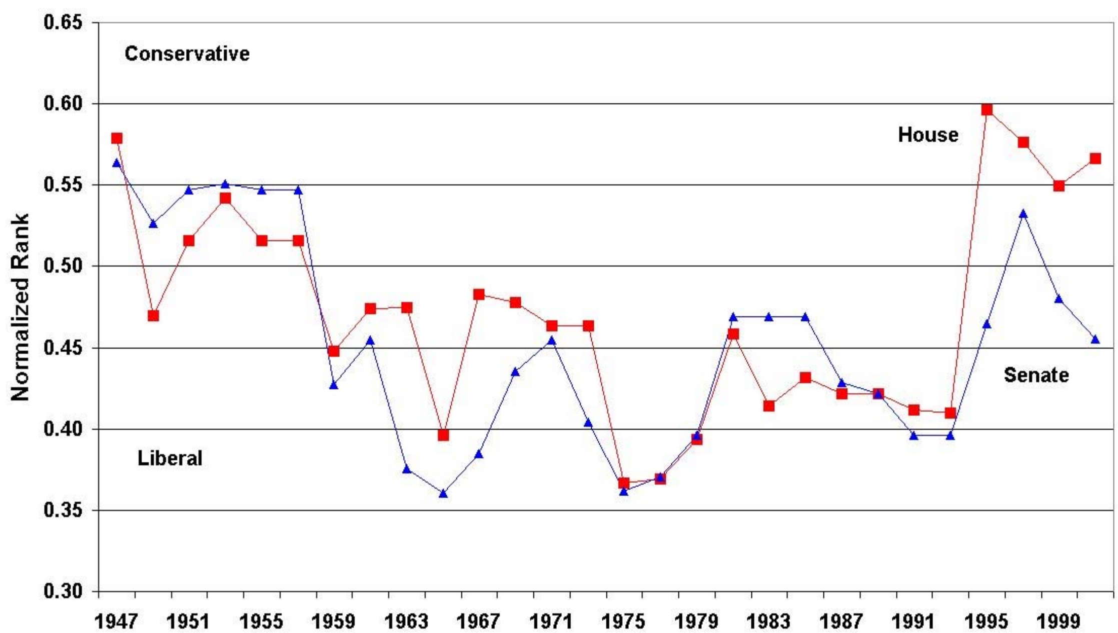


Figure 3 graphs the medians of the two chambers for the twenty-five Congresses using the joint rank ordering of the 2,763 unique legislators. For each chamber, the median member's rank was divided by 2,763 to normalize the rank ordering from 0 to 1 for graphing purposes. The chamber rank-order medians of the House and Senate track the first dimension means shown in Figure 2 fairly closely. The Pearson correlation between the House means shown in Figure 2 and the House median ranks shown in Figure 3 is .94. The corresponding correlation for the Senate means and medians is .92. The Spearman correlation between the joint rank ordering and the first dimension of the two-dimensional configuration is .98 so that it is no surprise that the median ranks and the means track one another so closely.

Figure 3: Median Ranks
House versus Senate



Figures 4 and 5 show the corresponding first and second dimension means for the party contingents in the House. (The Senate patterns are almost identical to the House on both dimensions and the rank medians for party contingents in both chambers are almost the same as the corresponding first dimension means.) As the South realigned during the 1980s and 1990s the number of Southern Democrats declined and became much more liberal. The means of the two parties on the second dimension are drawing closer together reflecting the declining importance of the second dimension in accounting for roll call voting in Congresses since the 1980s. The regional differences within the Democratic Party have almost completely disappeared and Democrats as a whole have become more liberal. In contrast, Republicans have become more conservative since the 1980s. The combination of the Democrats becoming more liberal and the Republicans more conservative has resulted in a trend towards ideological polarization within both chambers. These patterns match those discussed in Poole and Rosenthal (1984; 1997; 2001) and King (1998).[7]

Figure 4: House First Dimension Means

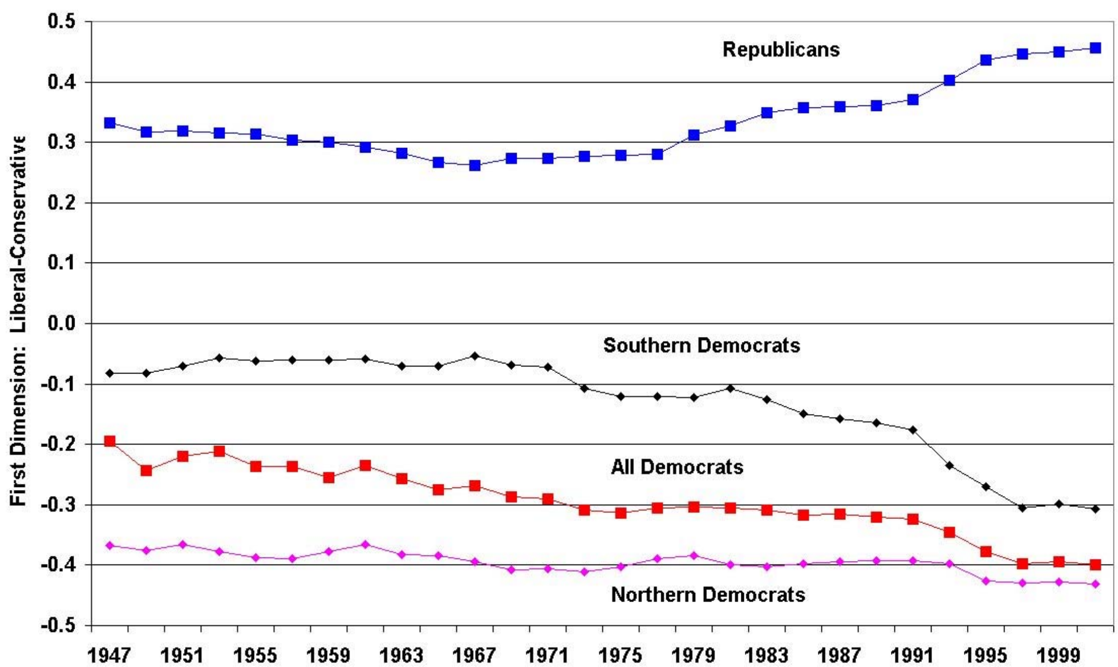
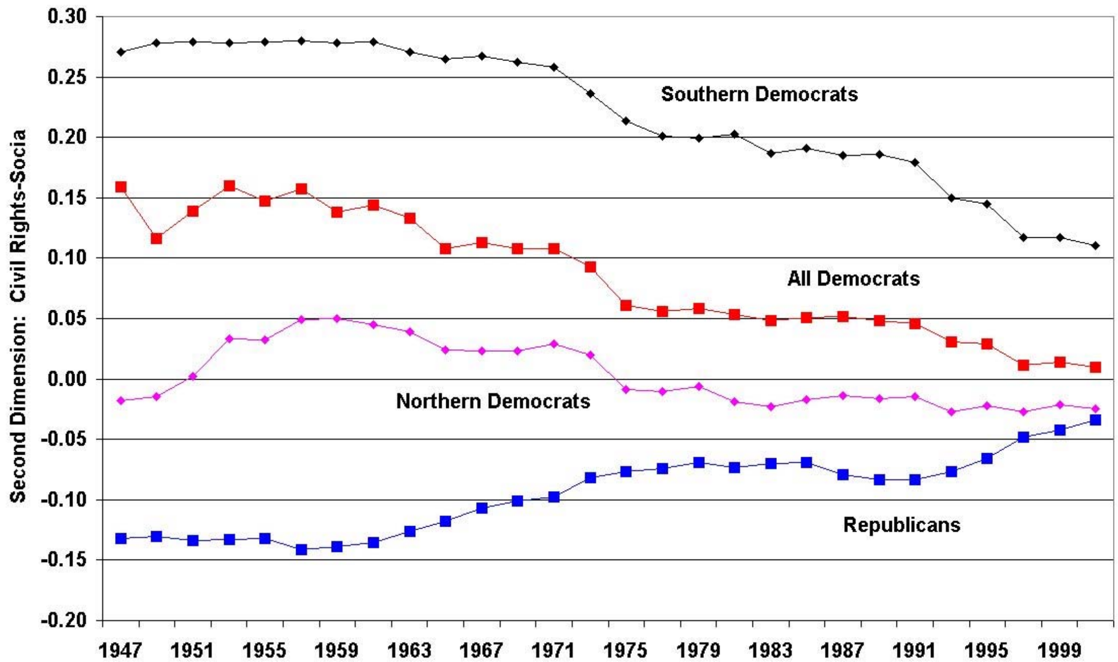


Figure 5: House Second Dimension Means



a. Evidence From a Classification Analysis

Table 1 shows correct classifications from one and two-dimensional OC scalings of the House and Senate. For the top part of the table, a separate rank order and two-dimensional configuration was computed for the members of every House and Senate from the 80th through the 107th Congresses. The correctly classified choices for each House/Senate were then aggregated and an overall percent correctly classified was computed for one and two dimensions.

Table 1

Classification Analysis: Non-Parametric Legislator Coordinates 1947-2002

Separate Configuration Computed For Each Congress: Results Aggregated Across Congresses

Chamber	Number of Legislators	Number of Roll Calls	Total Choices	Percent Majority[a]	Percent Correctly Classified		Aggregate Proportional Reduction In Error[b]	
					One	Two	One	Two
House	12,330	16,559	6,620,409	68.8	87.8	89.3	.605	.657
Senate	2,857	15,943	1,473,401	67.8	86.3	89.0	.574	.658
Combined	15,187	32,502	8,093,810	68.6	87.5	89.2	.597	.657

Combined Scalings: A Single Configuration Computed With Respect to all Congresses Simultaneously

Chamber	Number of Legislators	Number of Roll Calls	Total Choices	Percent Majority[a]	Percent Correctly Classified		Aggregate Proportional Reduction In Error[b]	
					One	Two	One	Two
House	2,418	16,559	6,620,409	68.8	87.0	88.2	.583	.620
Senate	495	15,943	1,473,401	67.8	85.4	87.4	.546	.610
Joint	2,763	32,502	8,093,810	68.6	86.7	88.0	.575	.617
Joint-House[c]	2,268	16,559	6,335,029	68.8	86.9	88.1	.581	.618
Joint-Senate[c]	345	15,943	999,977	67.8	85.0	87.1	.535	.600

[a] Total choices on majority side on all roll calls divided by total choices multiplied by 100.

[b] $$\textbf{APRE} = \frac{\sum_{j=1}^{n} \{\textbf{Minority Vote - Classification Errors}\}_j}{\sum_{j=1}^{n} \{\textbf{MinorityVote}\}_j}$$

[c] Includes *only* members serving in the Chamber. Members serving in both the House and Senate excluded.

In the bottom portion of the Table every member of the House or Senate is assumed to adopt the same ideological position throughout his or her career. Given this assumption, a rank-ordering and two dimensional configuration for all members is computed from all the choices over the 1947-2002 period for the House, the Senate, and for the combined membership of the House, Senate, and the Presidents from Eisenhower to George W. Bush. In the combined scalings, members who switch from one Chamber to the other are assumed to adhere to the same ideological position. These classifications are for the configurations discussed above (Figures 1 to 5).

Table 1 strongly supports the assumption of fixed ideological positions. For the House, allowing separate rank orders for the 28 post-War Houses results in a gain of only 0.8 percent over the single rank order for all Houses (87.8 versus 87.0 percent, respectively) purchased with an additional 9,912 parameters (12,330 versus 2,418). In two dimensions the gain is 1.1 percent (89.3 versus 88.2, respectively) requiring an additional 9,912 x 2 = 19,824 parameters. For the Senate, the gain in one dimension is 0.9 percent (86.3 versus 85.4 percent, respectively) with an additional 2,362 parameters (2,857 versus 495). The gain in two dimensions is modestly better – 1.6 percent (89.0 versus 87.4 percent, respectively) with an additional 2,362 x 2 = 4,724 parameters.

The last three lines in the lower portion of Table 1 show the results for joint OC one and two-dimensional scalings of all members of the House, Senate, and Presidents. Counting the 10 Presidents, there were a total of 150 legislators who served in both chambers thereby providing the "glue" to estimate the combined scalings. Overall, the combined rank ordering of the 2,763 individuals results in a correct classification of 86.67 percent. In comparison, aggregating the two single rank orderings for the separate chambers results in a correct classification of 86.70 percent for a gain of approximately .03 percent. The corresponding figures for two dimensions are 87.98 for the joint scaling and aggregating the two chambers results in a correct classification of 88.02 for a gain of approximately .04 percent.

For comparability purposes, the last two lines of Table 1 disaggregate those members of the House and Senate who never served in the opposite chamber. Comparing these percentages with those in the upper portion of the Table where each House/Senate is estimated separately, shows a gain of only 0.9 percent for the House and 1.3 percent for the Senate in one dimension, and a gain of 1.2 percent for the House and 1.9 percent for the Senate in two dimensions.

Table 2 shows a classification analysis of just those members serving in both chambers. Allowing members to have separate positions within each chamber results in a correct classification of 86.4 percent in one dimension and 89.4 percent in two dimensions. This is computed by aggregating the classifications from the single rank ordering and the two dimensional configuration for each chamber in the first two rows of the lower portion of Table 1 for the 150 members serving in both chambers. Constraining the 150 members to have the same position in both chambers results in a classification of 86.1 percent in one dimension and 87.6 percent in two dimensions. The loss in precision in one dimension is 0.3 percent and in two dimensions the loss is 1.8 percent. For just the 10 Presidents, constraining them to have the same position in both chambers produces a classification of 86.2 percent in one dimension and 88.9 percent in two dimensions for a loss of precision of 0.3 and 1.4 percent respectively.

Table 2

Classification Analysis: Members Serving in Both Chambers 1947-2002

	Number Serving Both Chambers	Total Choices	Classification Separate Configurations For House And Senate		Classification Joint Configuration House and Senate	
			One	Two	One	Two
With Presidents	150	758,804	86.4	89.4	86.1	87.6
Without Presidents	140	751,470	86.4	89.4	86.1	87.6
Presidents Only	10	7,334	86.5	91.3	86.2	88.9

b. Evidence From a Correlation Analysis

Table 3 shows the Spearman and Pearson correlations between various configurations from different scaling programs and the joint OC configuration. The table shows correlations between all legislators as well as for Democrats only and Republicans only. For example, the first row shows the correlations between the configurations estimated by OC just for the House with the corresponding ranks and coordinates in the joint scaling. There were 2,418 unique legislators who served in the House[8] -- 1,261 Democrats, 1,152 Republicans, and 5 Independents. The Spearman correlation between the rank-ordering of the 2,418 legislators from OC applied just to the House with their corresponding rank-ordering within the joint scaling of all 2,763 unique members of both chambers was .986. The corresponding Spearman correlations for the 1,261 Democrats was .956 and for the 1,152 Republicans was .967. In the two dimensional scalings, the Pearson correlations for the corresponding first and second dimensions were .993 and .972, respectively. The Pearson correlations for the separate party contingents were also very high. In short, the same rank ordering and two-dimensional configuration is recovered by both scalings.

Table 3

Correlation Analysis: Correlations Between Joint OC Scaling and Separate House and Senate Scalings

	Number of Legislators	Joint Rank Ordering	1st Dim. Joint	2nd Dim. Joint
	All Dem Rep	All Dem Rep	All Dem Rep	All Dem Rep
OC House All	2,418 1,261 1,152	.986[a] .956 .967	.993[b] .982 .966	.972[b] .970 .950
OC Senate All	495 258 234	.973 .932 .934	.977 .943 .917	.935 .894 .923
OC House	2,268 1,190 1,073	.996 .986 .985	.998 .995 .989	.984 .984 .967
OC Senate	345 187 155	.998 .992 .992	.998 .993 .999	.992 .984 .994
OC House Both	150 71 79	.942 .787 .880	.956 .743 .867	.828 .705 .810
OC Senate Both	150 71 79	.975 .912 .961	.983 .947 .932	.962 .915 .962
DW-NOM. House	2,418 1,261 1,152	.976 .944 .923	.988 .963 .956	.948 .945 .907
DW-NOM. Senate	495 258 234	.975 .960 .958	.988 .975 .949	.970 .951 .964
Common Space	2,763 1,448 1,307	.976 .944 .943	.989 .968 .961	.943 .943 .888

[a] All entries are Spearman Correlations.

[b] All entries are Pearson Correlations.

The second row of Table 3 is the Senate counterpart to the first row. There were 495 unique legislators who served in the Senate[9] -- 258 Democrats, 234 Republicans, and 3 Independents. The correlations are a bit weaker than those for the House but still quite substantial. Basically the same rank ordering and two-dimensional configuration is recovered by both scalings.

Rows three and four of Table 3 repeat rows one and two without the 150 legislators who served in both chambers. All the correlations increase relative to their counterparts in rows one and two. This shows that the 150 legislators who served in both chambers are not as stable as the other legislators. This is borne out by rows five and six that show the corresponding correlations for just these 150 legislators. Ignoring the 10 Presidents, 139 of 140 legislators served first in the House and then in the Senate (see footnote 4). The correlations between the configurations from the Senate only scalings with the joint scalings – row six -- are much higher than those for the House only scalings – row five. These differences are due to two effects – first, the common members account for about 32 percent of Senate roll call choices and only about 4 percent of House roll call choices cast from 1947 through 2002.[10] Hence the Senate correlations should be higher from this effect alone. Second, *some* of the 139 legislators clearly did change position when they moved from the House to the Senate but this change in position appears to be concentrated on the 2nd rather than the 1st dimension. The Spearman correlation between the rank-orderings of the 150 common members from the two separate OC chamber scalings is .912 and the Pearson correlations between the corresponding dimensions for the two dimensional scalings were .936 and .775, respectively. The one-dimensional correlations are quite high although a bit lower than those shown in the first four rows of Table 3. Nevertheless, using these 150 members as "glue" to tie the House and Senate together in a single rank ordering and the first dimension of the two-dimensional scaling, does not appear to be an unreasonable assumption.

A closer examination of the second dimension coordinates of the 150 common members reveals no clear patterns by party or region. Indeed, the sum of the shifts on the second dimension is almost exactly zero. This coupled with the Pearson correlation of .775 indicates that the second dimension of the joint scaling is probably a reasonable estimate but the comparisons between the two chambers on the second dimension should be used with caution.

The last three rows of Table 3 show the correlations between DW-NOMINATE (McCarty, Poole, and Rosenthal, 1997; Poole and Rosenthal, 2001) estimates for the House and Senate and Common Space scores (Poole, 1998) derived from W-NOMINATE scores for the House and Senate. All of these correlations are very high. The three quite different scaling methods produce essentially the same configurations in one and two dimensions for both the House and Senate.

Table 4 shows correlations between the overall two-dimensional House OC scaling and separate two-dimensional OC scalings of the House omitting various categories of roll calls. Since some of the roll call codes were only available for the 83rd through the 105th Houses[11], the separate scalings were only done for that time period. For example, the first row of Table 4 is for a scaling of procedural and organizational votes only. There was a total of 2,031 legislators in the scaling for the twenty-three Houses of whom 1,078 were Democrats, 951 Republicans, and 2 independents. The

Pearson correlation between the corresponding first dimensions was .978 and for the corresponding second dimensions the correlation was .895. The correlations for the Democrats only and Republicans only are shown below the overall correlations.

Table 4

Correlation Analysis: Correlations Between OC Scaling of all Roll Calls And OC Scalings Omitting Roll Call Categories, 83rd to 105th Houses

	Number of Choices	Number of Legislators	1st Dim. All	2nd Dim. All
		All Dem Rep	All Dem Rep	All Dem Rep
Procedural and Organizational Votes Only	1,809,512	2,031 1,078 951	.978[a] .943 .880	.895[a] .898 .796
All Votes Except Procedural and Organizational	3,957,249	2,036 1,083 951	.989 .966 .958	.951 .943 .920
Government Management Votes (Clausen)	2,704,499	2,035 1,082 951	.985 .950 .941	.900 .881 .837
Social Welfare and Civil Liberties Votes (Clausen)	1,203,024	1,952 1,044 907	.979 .952 .906	.829 .807 .746
Agriculture, Foreign and Defense, Miscellaneous (Clausen)	1,857,017	2,010 1,065 943	.973 .905 .905	.901 .887 .845

[a] All entries are Pearson Correlations.

The second row of Table 4 shows the results for a scaling of all the roll calls except for the procedural and organizational.[12] The correlations for both dimensions and both parties are all quite high. The correlations for the procedural and organizational only scaling in the first row are lower than those in the second row – especially on the second dimension. Procedural and organizational votes are usually party-line or near party-line votes. Consequently, the first dimension will be much more important than the second dimension in accounting for these votes (see Figure 1). Nevertheless, the same basic two-dimensional structure is recovered from both sets of roll calls.

The last three rows of Table 4 show various categories of roll calls using Clausen's (1973) coding scheme. Again, the first dimension is essentially the same in all the scalings with some variability in the second dimension.

In addition to the over-time correlations shown in Tables 3 and 4, I computed Spearman correlations between the rank orderings of each House and Senate scaled separately by OC with the corresponding legislators in the joint rank ordering. All of these correlations were above .90 for all Houses and Senates from the 91st to the 107th Congresses and 51 of the 56 Spearman correlations were above .90. The lowest Senate correlation was .83 for the 88th Senate and .87 for the 90th House.

I also computed Pearson correlations between single Congress W-NOMINATE two dimension coordinates, single Congress Heckman-Snyder two dimensional coordinates, and single Congress OC two dimensional coordinates with the corresponding legislators in the joint OC configuration shown in Figure 1. All the first dimension correlations for all three methods exceeded .95 for every House and Senate after the 89th and only 4 of 168 correlations were below .90. The lowest correlation was .88 for the 84th House for W-NOMINATE and Heckman-Snyder.

The second dimension Pearson correlations for the single Congress scalings were lower but exceeded .80 for all methods until the 103rd Congress when some correlations fell dramatically. This is not surprising given that the second dimension only accounts for less than one percent of roll call vote choices after the 102nd House and Senate.

3. What's Important? The Forest or the Trees?

The weight of the evidence presented in Tables 1 through 4 and the Congress by Congress correlation analyses strongly suggests that members of Congress are very stable ideologically. Although the correlations are not all +1.0 and the classifications are not all 100 percent, it is clear that stability is the rule and not the exception. The most important evidence for stability are the first two rows in the top and bottom portions of Table 1. Separately scaling every one of the twenty-eight Houses since the end of WWII and aggregating produces a correct classification of 87.8 percent in one dimension and 89.3 percent in two dimensions. In contrast, a single configuration for all twenty-eight Houses produces correct classifications of 87.0 and 88.2 percent, respectively. Consequently, those factors pointed to by researchers as affecting the way members of Congress vote -- "shirking", redistricting, agenda change, conversion, etc. – *at most* can only account for .8 to 1.1 percent of all roll call voting in the House and .9 to 1.6 of all roll call voting in the Senate since the end of World War II.

Tables 1 through 4 do not exhaust the evidence. Rather, the evidence presented here complements and reinforces the extensive evidence produced by analyses of D-NOMINATE, W-NOMINATE, and Heckman-Snyder scores in conjunction with other data shown in Poole and Rosenthal (1997). For example, using data compiled by Loomis (1995) on every exit by a member of the House from 1947-1984, Poole and Rosenthal found that "shirking" consisted of *voting less* and *not* a change of long-standing ideological position.[13] Indeed, even redistricting had no statistically significant effect.[14] Members maintained a constant ideological position as their district boundaries changed. This may be the result of self-selection. Perhaps members who remain in the House after being redistricted are those whose districts have not changed in a way that would demand significant changes in their voting record. Those that would have to change in a significant way retire instead (Cox and Katz, 2002).

Another important but subtle piece of evidence is the lack of both-ends-against-the-middle voting (Poole and Rosenthal, 1997, Ch. 7). Coalitions are built from the edge of the space inward, not from the center outward. Furthermore, the positions of legislators in the basic space appear to be common knowledge. Party leaders know who the undecided are (who is close to the cutting line) and modify bills to pick up the undecided while holding their left/right flank. Part of this "modifying" is to construct "explanations" that their members can use to justify their votes (Fenno, 1978). Leaders can move the cutting line through their efforts – for example, there can be two votes on an identical bill, on the first the leadership loses, on the second the leadership wins.[15] Both votes can fit the spatial model equally well so that it appears that some members have changed position. However, what has changed is *not* their underlying position in the basic space, what has changed is the *mapping* (the appropriate column in **W**). These efforts of leaders in the chamber along with the intellectual leaders of the party can change the mapping of the basic dimensions onto an issue dimension through the use of "explanations" and "interpretations" of issues. One aspect of this is that status quo policy positions change over time. For example, changes in the economy over time affect how members of Congress see the current level of the minimum wage, taxes, and so on. These economic changes affect the mapping of the basic dimensions onto the appropriate policy dimensions but do not affect the underlying positions in the basic space.

The recent debate over "Where's the party" (Krehbiel, 1993; Snyder and Groseclose, 2000; McCarty, Poole, and Rosenthal, 2001; Cox and Poole, 2002a; 2002b) must also be seen against the backdrop of the stability documented here. A member who is pressured by her party votes with the party on a roll call contrary to her personal preferences. But if the party pressure moves the cutting line past the legislator and others very close to her ideologically, then she is on the correct side of the cutting line and she is not voting contrary to her ideal point. In this case party pressure is indistinguishable from leaders moving the cutting line using "explanations" and "interpretations". For a member to be pressured she must vote with the leadership *and* be on the wrong side of the cutting line. Hence, party pressure can only be detected by analyzing voting errors. *But this in turn means that the basic space must be properly estimated so that the errors are meaningful.* Even if this is done correctly (McCarty, Poole, and Rosenthal, 2001; Cox and Poole, 2002a; 2002b), the evidence suggests that party pressure is secondary or marginal, affecting perhaps 5-10 legislators on a highly pressured vote.[16]

Although stability is the forest, this does not mean that systematic changes are not taking place in the voting behavior of members of Congress over time. What the evidence here suggests is that these changes, if they are there, are second and third order effects. They are the trees -- or even the bark on the trees – in the forest of stability. Statistical significance is not necessarily substantive significance.

Given the stability of ideal points in the basic space, what does this imply about the factors conventionally thought to determine ideal points: personal ideology; constituent interests; and party pressures? Perhaps all three factors are stable for the vast bulk of legislators throughout their careers. Certainly a relatively constant level of party pressure over time is consistent with ideal point stability. Stability per se says little about what factor is more important than the others. Clearly one or more of these factors can shift and thereby change the mapping from the basic space onto the issue dimensions – the 9/11 attacks certainly have made most members of Congress more hawkish.

The fundamental stability documented in Tables 1 to 4 is consistent with my theory of ideology. Consistency is nice but it is not confirmation. In the real world of politics it is hard to believe that "Pothole Al" D'Amato is as intense in his beliefs as Hillary Clinton or Maxine Waters. My theory cannot explain everything. However, any alternative that tries to account for the stability of roll call voting would have to explain why members do not change their behavior in any meaningful way under a broad range of conditions including retirement (that is, the lack of an electoral connection). It is my belief that any alternative theory would of necessity have to be more complex than the one I sketched above. I will not change my mind until I see a better alternative.

4. Conclusion

An ideology or belief system is "…a configuration of ideas and attitudes in which the elements are bound together by some form of constraint" (Converse, 1964, p. 207). It tells us what is “the ‘good’ in politics and social intercourse” (Hinich and Munger, 1994, p.19). It tells us who gets what, and who should rule. Ideological stability among an elite group of national politicians should not be surprising. How much to tax, how much to spend, how much to redistribute, how much to help people in need, how much to help people to help themselves, and so on, all these questions are fundamental to modern politics. These are questions of what is *good*. “Beware a wolf in sheep’s clothing” is an old saying that points to a fundamental truth – people are suspicious of those who change their minds, especially about something as fundamental as what is *good* in politics.

There may be changing minds, but they are not in Congress.

References

Cahoon, Lawrence S., Melvin J. Hinich, and Peter C. Ordeshook. 1976. "A Multidimensional Statistical Procedure for Spatial Analysis." Manuscript. Carnegie-Mellon University.

Carmines, Edward G. and James A. Stimson. 1989. *Issue Evolution: Race and the Transformation of American Politics*. Princeton, N.J.: Princeton University Press.

Clausen, Aage. 1974. *How Congressmen Decide: A Policy Focus*. New York: St. Martin's Press.

Clinton, Joshua, Simon D. Jackman, and Douglas Rivers. 2002. "The Statistical Analysis of Roll Call Data." Working Paper, Stanford University.

Converse, Philip E. 1964. "The Nature of Belief Systems in Mass Publics." In David E. Apter, ed., *Ideology and Discontent*. New York: Free Press.

Cox, Gary W. and Jonathan N. Katz. 2002. *Elbridge Gerry's Salamander: The Electoral Consequences of the Reapportionment Revolution*. New York: Cambridge.

Cox, Gary W. and Keith T. Poole. 2002a. "On Measuring Partisanship in Roll Call Voting: The U.S. House of Representatives, 1877-1999." *American Journal of Political Science*, 46:477-489.

Cox, Gary W. and Keith T. Poole. 2002b. "Measuring Group Differences in Roll Call Voting." Manuscript, University of Houston.

DiMaggio, Paul, John Evans, and Bethany Bryson. 1996. "Have Americans' Social Attitudes Become More Polarized?" *American Journal of Sociology*, 102:690-755.

Enelow, James M. and Melvin Hinich. 1984. *The Spatial Theory of Voting*. New York: Cambridge University Press.

Evans, John H. 2003. "Have Americans' Attitudes Become More Polarized? An Update." *Social Science Quarterly*, 84:71-90.

Fenno, Richard F. Jr. 1978. *Home Style: House Members in Their Districts*. Boston: Little, Brown.

Froman, Lewis A. Jr. 1971. "Differences Between the House and Senate." In Raymond Wolfinger, ed., *Readings on Congress*. Englewood Cliffs, N.J.: Prentice-Hall.

Glazer, Ami and M. Robbins. 1983. "Voters and Roll Call Voting: The Effect of Congressional Elections." *Political Behavior*, 5:377-390.

Heckman, James J. and James M. Snyder. 1997. "Linear Probability Models of the Demand for Attributes With an Empirical Application to Estimating the Preferences of Legislators." *Rand Journal of Economics*, 28:142-189.

Hinich, Melvin J. and Michael J. Munger. 1994. *Ideology and the Theory of Political Choice*. Ann Arbor: The University of Michigan Press.

Hinich, Melvin J. and Michael Munger. 1997. *Analytical Politics*. New York: Cambridge University Press.

Hinich, Melvin J. and Walker Pollard. 1981. "A New Approach to the Spatial Theory of Electoral Competition." *American Journal of Political Science*, 25:323-341.

Hoffer, Eric. 1951. *The True Believer: Thoughts on the Nature of Mass Movements*. New York: Harper & Row (Perennial Library Edition, 1966, 1989).

Jackman, Simon D. 2000a. "Estimation and Inference via Bayesian Simulation: An Introduction to Markov Chain Monte Carlo." *American Journal of Political Science*, 44:375-404.

________. 2000b. "Estimation and Inference are 'Missing Data' Problems: Unifying Social Science Statistics via Bayesian Simulation." *Political Analysis*, 8:307-332.

________. 2001. "Multidimensional Analysis of Roll Call Data via Bayesian Simulation: Identification, Estimation, Inference and Model Checking." *Political Analysis*, 9:227-241.

Kernell, Sam. 1973. "Is the Senate More Liberal than the House?" *Journal of Politics*, 35:332-363.

King, David. 1998. "Party Competition and Polarization in American Politics." Paper prepared for the 1998 Annual Meeting of the Midwest Political Science Association.

Krehbiel, Keith. 1993. "Where's the Party?" *British Journal of Political Science* 23(1): 235-66.

Loomis, Michael. 1995. "Constituent Influences Outside the Structure of Spatial Voting." Doctoral Dissertation, Carnegie-Mellon University.

McCarty, Nolan M. and Keith T. Poole. 1995. "Veto Power and Legislation: An Empirical Analysis of Executive and Legislative Bargaining from 1961-1986." *Journal of Law, Economics, and Organization*, 11:282-312.

McCarty, Nolan M., Keith T. Poole, and Howard Rosenthal. 1997. *Income Redistribution and the Realignment of American Politics*. Washington, D.C.: AEI Press.

McCarty, Nolan M., Keith T. Poole, and Howard Rosenthal. 2001. "The Hunt for Party Discipline in Congress." *The American Political Science Review*, 95:673-687.

Nokken, Timothy P. 2000. "Dynamics of Congressional Loyalty: Party Defection and Roll Call Behavior, 1947-1997." *Legislative Studies Quarterly*, 25:417-444.

Nokken, Timothy P. and Keith T. Poole. 2002. "Congressional Party Defection in American History." Manuscript, Univeristy of Houston.

Oppenheimer, Bruce I. 2000. "The Roll Call Behavior of Members Who Switch Parties, 1900-99: The Effect of Variations in Party Strength." Paper presented at the annual meeting of the Midwest Political Science Association, Chicago.

Ordeshook, Peter C. 1976. "The Spatial Theory of Elections: A Review and a Critique." In *Party Identification and Beyond*, Ian Budge, Ivor Crewe, and Dennis Farlie, editors. New York: Wiley.

Poole, Keith T. 1990. "Least Squares Metric, Unidimensional Scaling of Multivariate Linear Models." *Psychometrika*, 55:123-149.

________. 1998. "Recovering a Basic Space From a Set of Issue Scales." *American Journal of Political Science*, 42: 954-993.

________. 2000. "Non-Parametric Unfolding of Binary Choice Data." *Political Analysis*, 8:211-237, 2000.

________. 2001. "The Geometry of Multidimensional Quadratic Utility in Models of Parliamentary Roll Call Voting." *Political Analysis*, 9:211-226.

________. 2002. *Spatial Models of Legislative Voting*. Manuscript. University of Houston.

Poole, Keith T. and Howard Rosenthal. 1984. "The Polarization of American Politics," *Journal of Politics,* 46:1061-1079.

________. 1997. *Congress: A Political-Economic History of Roll Call Voting*. New York: Oxford University Press.

________. 2001. "D-NOMINATE After 10 Years: A Comparative Update to *Congress: A Political-Economic History of Roll Call Voting*." *Legislative Studies Quarterly*, 26:5- 26.

Rothenberg, Lawrence S. and Mitchell S. Sanders. 2000. "Severing the Electoral Connection: Shirking in the Contemporary Congress." *American Journal of Political Science*, 44:316-325

Snyder, James M. Jr., and Timothy Groseclose. 2000. "Estimating Party Influence in Congressional Roll-Call Voting," *American Journal of Political Science* 44(2):193-211.

Stratmann, Thomas. 2000. "Congressional Voting Over Legislative Careers: Shifting Positions and Changing Constraints." *American Political Science Review*, 94:665-676.

Weisberg, Herbert F. 1968. *Dimensional Analysis of Legislative Roll Calls*. Doctoral dissertation, University of Michigan.

Wills, Garry. 1982. *The Federalist Papers by Alexander Hamilton, James Madison, and John Jay*. New York: Bantam Books.

Footnotes

[1] Emphasis in original.

[2] See Carmines and Stimson (1989) for a brilliant discussion of how race has transformed American party politics since the end of World War II.

[3] This does not exhaust the list of possible measures of legislator ideal points. In particular, the innovative method developed by Simon Jackman and his colleagues (Jackman, 2000a; 2000b; 2001; Clinton, Jackman, and Rivers, 2002) not only produces legislator ideal points it also produces excellent estimates of the standard errors of the ideal points. Jackman uses Bayesian simulation to obtain the posterior distribution of the parameters from which you can obtain reasonable standard errors. The ideal points themselves are essentially identical to W-NOMINATE and the Heckman-Snyder method.

[4] A total of 140 legislators served in both chambers of which 139 served in the House first. Only Claude Pepper (D-FL) served in the Senate and then later in the House and voted in both for more than 25 roll calls (the minimum to be included in the analysis of a Chamber). He is included in the analysis. Garrett L. Withers (D-KY) served in the 81st Senate as an appointee and then later won election to the 83rd House in 1952. However, he only voted 16 times in the 83rd House so he is not counted as serving in both Chambers.

[5] I use the *Congressional Quarterly* definition of South: the 11 states of the Confederacy plus Kentucky and Oklahoma.

[6] See Froman (1971) and Kernell (1973) for a discussion of House-Senate differences.

[7] Unlike the period of the 1890s and early 1900s, the increasing polarization of the political elites is not matched by polarization amongst the voters (DiMaggio, Evans, and Bryson, 1996; Evans, 2003). There is some evidence that the public is polarizing on moral issues but the divide in the public is small compared to the members of Congress. This may be due to the incoherence of elite ideology coupled with the general level of affluence in the U.S. Since the end of WWII real per capital GDP has more than tripled – from approximately $10,000 in 1947 to $33,000 in 2000. Economic issues simply do not have the power that they used to.

[8] This counts some party switchers twice. In the House, 21 members switched parties and voted at least 25 times as members of their old and new parties during the 1947 – 2002 period. These 21 members are treated as 43 legislators for the purposes of this analysis. Goode of VA is treated as 3 legislators – Democrat, Independent, and Republican. For a complete accounting of party switching in Congress in American history, see Nokken and Poole (2002) and the tables therein.

[9] This counts 5 Senators as 11 legislators. Morse of Oregon is treated as 3 legislators -- Republican, Independent, Democrat.

[10] Counting the 10 Presidents, the 150 common members account for 473,424 of 1,473,401 choices in the Senate (32.1%) and 285,380 of 6,620,409 choices in the House (4.3%).

[11] These codings were compiled by Dave Rohde and his students.

[12] Note that the numbers of legislators will differ because throwing out roll calls may result in some legislators who served a short time in the House falling under the threshold of 25 roll calls to be included in the scaling.

[13] Rothenberg and Sanders (2000) find small shirking effects for the 102nd to the 104th Houses. They use a modified form of W-NOMINATE to construct their ideological change dependent variable.

[14] For a contrary finding using ADA scores, see Glazer and Robbins (1983) and Stratmann (2000). I replicated the Glazer and Robbins analysis using W-NOMINATE scores and did not find the effect. Part of the difference between the ADA-based findings and the NOMINATE findings is probably due to the coarseness of the ADA scores that are typically based on 20 or fewer roll calls. In addition, for the ADA based measures to be valid it must be the case that the ADA is *exterior* to the space spanned by the legislators (Poole and Rosenthal, 1997, Ch. 8; Poole, 1990; 2002, Ch. 2).

[15] For an example, see the Panama Canal Implementation votes in the House discussed in Poole and Rosenthal (1997, Ch. 8).

[16] Snyder and Groseclose (2000) find substantial effects but their methodology – linear probability – is flawed. See the refereed but unpublished appendix to McCarty, Poole, and Rosenthal (2001, Appendix B) available at http://voteview.uh.edu/Appendix_B_Hunt.pdf. Also see Cox and Poole (2002a; 2002b) for further criticisms.