THE POLARIZATION OF AMERICAN POLITICS

Keith Poole
Carnegie-Mellon University

Howard Rosenthal
Carnegie-Mellon University and
California Institute of Technology

ABSTRACT

Elected officials in the United States appear to represent
relatively extreme support coalitions rather than the interests of
middle-of-the-road voters. This contention is supported by analysis of
variance of liberal-conservative positions in the United States Senate
from 1959 to 1980. Within both the Democratic and the Republican
parties, there is considerable variation in liberal-conservative
positions, but two senators from the same state and party tend to be
very similar. In contrast, two senators from the same state but from
different parties are highly dissimilar, suggesting that each party
represents an extreme support coalition in the state. Moreover, the
distribution of senators is now consistent with the hypothesis that, in
the long run, both parties are equally likely to win any seat in the
Senate. This result suggests that there is now competition between
equally balanced but extreme support coalitions throughout most of the
United States.

THE POLARIZATION OF AMERICAN POLITICS*

Keith Poole and Howard Rosenthal

We contend that, at nearly every level of the political system, American politics has been polarized in ways that do not well represent the interests of middle-of-the-road voters. For better or for worse, constituencies are generally fought over by two opposing coalitions, liberal and conservative, each with relatively extreme views. Our middle-of-the-road voter is thus not some member of a "silent majority" desirous of some radical social change, but a moderate individual seeking to avoid the wide swings in policy engendered by our political system. In the environmental area, for example, we presume the middle-of-the-road voter would like to see the EPA strike a more constant posture, somewhere between its relatively zealous activities pre-Reagan and its relatively lax actions in the current administration. Similarly, we suspect most citizens would prefer a federal education policy somewhere between the near total support for NEA positions found in the Carter years and the near total abandonment of a federal role under Reagan.

How can we tell whether middle-of-the-road constituency interests are being represented? A traditional method has been to assemble a battery of such socioeconomic measures as income, education, and race to see whether roll call voting was related to constituency variables.[1] This method has several drawbacks, including the difficult problem of accurately measuring a constituency's economic self-interest on a given issue.

A more direct approach takes advantage of an implication of the notion that a legislator represents an interest of his or her constituency. If middle-of-the-road interests are consistently represented, then legislators from the same constituency ought to be similar ideologically and ought to vote alike.

The U.S. Senate is a _terrain de choix_ for applying this direct method since each state is represented by two senators. There would appear to be a very simple method for assessing whether two senators represented a common interest. Take all the roll call votes for a given session of the Senate and compute the percentage of votes for which the pair did not vote alike. If a common constituency interest is being represented, presumably the two senators from a state will almost n   vote differently. They certainly should have less disagreement with each other than they have, on average, with other members of the Senate.

Unfortunately, looking at disagreement percentages has a flaw. Consider two states, one with a very liberal senator and a moderate liberal senator, the other with a moderate conservative senator and a very conservative senator. What if there are a series of votes on, say, voting rights, that basically divide moderate conservatives from more extreme ones? Then the two senators from the first state will vote together while the two from the second state will split. While each pair of senators has about the same ideological separation, one

pair agreed, the other disagreed. This illustrates how the disagreement percentage depends not just on intrinsic differences between the senators but on the content of the bills coming before a given session of the Senate.[2]

To find this intrinsic policy difference or distance between two senators, we instead start with direct measures of distance. Each year, some 30 interest groups in Washington rate Senators. The groups include COPE, ACU, ADA, UAW, etc. The ratings give us a measure of the distance between the interest group and the senator. A high rating is low distance, and a low rating is high distance. Via the technique of least squares unfolding, we can use these distances to place both the interest groups and the senators on a liberal-conservative scale. We have scaled all 22 sessions of Congress from 1959 through 1980 using this method. Scale values for the Senators generally range from near -1 for extreme liberals (e.g., Ted Kennedy) to +1 for extreme conservatives (e.g., Jesse Helms). The liberal-conservative placements accurately reproduce the original ratings.[3]

We have reason to believe that our procedure is very robust. For 1979 and 1980, we tried an entirely different scaling procedure, one based solely on the recorded roll call vote data (Poole and Rosenthal, 1983). This procedure recovered liberal-conservative locations for the senators virtually identical to those obtained from the interest group ratings. The alternative technique is based on a probabilistic model of roll-call voting; its "predictions" are correct on 80 percent of the individual votes in the Senate. In

addition, we again recovered similar liberal-conservative positions when using a much cruder least squares decomposition (Poole, 1983) of the roll call votes. We thus conclude that we are accurately capturing liberal-conservative positions in the Senate and that these positions represent the major and far dominant factor underlying roll call voting behavior.

In discarding disagreement percentages and favoring liberal-conservative positions, we maintain the basic comparative technique. For middle-of-the-road representation, it is necessary (but not sufficient!) that senators from the same state should be close to each other on the liberal-conservative scale.[4]

Obviously where the middle-of-the-road proposition is most likely to be challenged is when one senator is a Democrat and the other is a Republican. From 1977 through 1982, California was represented by Alan Cranston, a very liberal senator, and Sam Hayakawa, a very conservative one. This ideological separation is not unusual for California. Hayakawa's seat had previously been held by Tunney, a liberal. Tunney was preceeded by the very conservative Murphy. Before Tunney, a six year term was served by the liberals Engle and Salinger. They were preceeded by an arch conservative, William Knowland. The California example is obviously very damaging to the case of middle-of-the-road democracy. The only question is whether California is typical of the entire nation.

To study this question, we began by dividing the states into three types, as shown in Figure 1. There are states with two

Republican senators, states with two Democrats and states with mixed

delegations.[5] The number of mixed states has steadily risen,

reflecting in part the collapse of the Solid South. By 1980, one-half

the states were mixed.

If the opposing party coalitions were evenly balanced in every

state, so that we had a _fully_ _competitive_ Senate, then the long-run

probability that any seat is won by either one of the two parties would

be one-half. (We say "long run" because we don't want to rule out

scandal, incumbency, and other factors giving a short run bias to one

party for specific seats or specific years.) When full competition

prevails, one expects, on average, 50 percent of the states to be

represented by mixed delegations, 25 percent to have homogeneous

Republican delegations, and 25 percent to have homogeneous Democrat

delegations.[6] Historically, the composition of the Senate was not

consistent with this competitive model. Examination of the data for

the period between 1912 and 1959 discloses that mixed delegations were

always far less than 50 percent of the total. At the beginning of our

liberal-conservative time-series, in 1959, with the Democrats in

control, there were still only 16 mixed delegations, and there was less

than one chance in one thousand that the observed distribution would

arise under the null hypothesis of full competition. But, after 1980,

when the distribution is very close to the expected 50-25-25, the

chances are better than nine in ten. The current distribution of

delegations is consistent with our claim of intense competition between

opposing ideological coalitions.

Now, our basic aim is to assess the ideological similarity of

senators from a given state. To do this, we have to know something

about the variability in positions of all senators. This variability

can be captured in the measure of variance in liberal-conservative

positions.

Formally, one can't compare variances from separate scalings.

Moreover, the substantive nature of the bills and issues that fall

along this issue change from year-to-year. Perhaps the basic content

of "liberal" and "conservative" also change. Such changes are not

central to our analysis, which is concerned with whether polarization

occurs on whatever issues are currently relevant. To place the

scalings in a common frame of reference that is appropriate for our

purposes, we first carried out a linear transformation of each scale.[7]

The coefficients of these transformations and liberal-

conservative coordinates for a combined scale were chosen to minimize

the sum of squared errors between the combined scale and the original

scales. This technique essentially assumes that the liberal-

conservative positions of individual Senators are stable in time. Thus,

variations in the liberal-conservative makeup of the Senate would arise

mainly through changes in membership (Stone, 1977; cited by Kulinski,

1979; and Clausen, 1973).

The results of the combined scale are consistent with this view

of stability. The combined scale correlates very highly with each of

the yearly scales.[8] The results below are based on the transformed

yearly scales.

For the entire Senate, the variance is plotted in Figure 2. The variance exhibits no long-term trends. There is a slight dip during the Great Society, peaks during Vietnam and Watergate, but values in the last three years are very close to those of the first three years. Basically, throughout the past two decades, there is a polarized distribution in the Senate, with liberal and conservative clusters and relatively few moderates in the Center. A typical Histogram are shown in Figure 3 for six of our twenty-two years. The plot of the variance shows that we will be concerned with a basic pattern of representation, one prevalent throughout the period.

Below the plot of the variance, Figure 2 also shows the percentage of the variance that is "explained" by separating the senators into the three types of states. This series is unit-free, and has no year-to-year comparison problems. Again, there are no long-term trends, although there is a dip that bottoms out at the height of the Vietnam controversy. The important finding is that the state types account for little of the ideological variability in the Senate. The percentage averages about 10; only once does it pass, barely, 20.

A key factor in the small percentage of the variance explained by separating the states by type is that mixed state senators don't behave alike but, to some degree, behave like Democrats and Republicans. Indeed, Figure 2 also shows that if we separate by party instead of by state type we explain more of the variance and that party has become more important in recent years (largely because of the lesser weight of Southern conservatives among the Democrats). But

party itself never explains as much as half the variance. Most of the variability in senatorial alignments cannot be explained by party affiliation but must be explained by variations between and within state delegations.

Comparison of the within state variation to the between state variation is the central element in our argument. First, however, we pause to consider the total variation for each type relative to the total variation for the Senate, as plotted in Figure 4. If a delegation type was as heterogeneous as the Senate as a whole, its own variance would be 100 percent of the variance of the full Senate. A totally homogeneous type, with all its senators at a single value on the scale, would be at 0 percent.

Democrat and Republican states are, as expected, more homogeneous than the Senate as a whole. Undoubtedly because of the presence of Southern conservatives, the Democrats were initially not very homogeneous. Until Nixon's second term, their variance was generally between 80 percent and 100 percent of the full Senate's. The Republicans were initially more homogeneous, being around 40 percent of the full Senate. But the Senatorial party was clearly badly split during Watergate, the Republican figure actually exceeding 100 percent in 1974 and 1975. Carter's presidency was needed to reunify the party.

Under Carter, the two parties looked very similar in their degree of heterogeneity, confirming our position on two competitively similar opposing coalitions. Although the Democrat and Republican types are more homogeneous than the full Senate, they still exhibit

substantial diversity in liberal-conservative positions, the percentage for both types hovering near 50 percent during the Carter years.

In turn, the mixed delegations are far more heterogeneous than the one party delegations. They indeed tend to be slightly more heterogeneous than the Senate as a whole, since their percentage, which exhibits little temporal variation, oscillates between 100 percent and 120 percent.

The heterogeneity of mixed delegations need not have occurred. If homogeneous Republican states were "conservative" states, homogeneous Democrat, "liberal," and mixed, "moderate," the mixed delegations could have been as homogeneous as the one party delegations. Instead, the heterogeneity of mixed delegations suggests that these states are far from moderate in their representation.

We now turn to the analysis of the heterogeneity in mixed and in one party types. The total variance for a type equals the variance within states plus the variance between states. If both Senators from a given state represent the same constituency interest, the within state variance should be quite small. The heterogeneity within a type should be explicable by the varying interests of the states.

Indeed, the Democrat and Republican types witness consistent interest representation. For the Democrats, within state variance is perennially extremely small, about 10 percent of the total type variance (see Figure 5). For the Republicans, it is only slightly larger, with the exception of two peaks; one in 1965 and 1966, the other from 1971 through 1976. Even at the peaks, however, within state

variance is always less than between state variance. One of the peaks is largely explicable and is truly the exception that proves the rule. In the 1970 Senatorial elections in New York, our model of two opposing coalitions broke down. A triangular contest saw the election of James Buckley, a conservative, while New York's other Republican Senator, Jacob Javits, remained the most liberal Republican member of the Senate. Political observers correctly predicted that Buckley's deviant behavior as a Senator would not survive one term. Deleting New York from the analysis for the Buckley years dampens the peak considerably. (Again, see Figure 5.) Since Buckley's departure in 1976, the Republican and Democrat types have closely resembled each other.

After controlling for party, we find important and similar residual variation over one party states. This residual variation is overwhelmingly the result of variation across states and only slightly reflects variation between Senators from the same state.

Senate watchers have in fact suggested to us that Senators from the same party and state actively consult each other prior to voting. They are thus likely to represent the views of their support coalitions rather than their personal ideological views.

Are the support coalitions representative of middle-of-the-road citizens? The data for mixed states argues strongly that the Democrat and Republican support coalitions in each state represent relatively extreme views. The two senators from a mixed state don't adopt anything near common positions. The within state variance percentage in this type always substantially exceeds that for the Republican and Democrat

types and is generally over 50 percent of the total. That is, there are generally more differences internal to each state than between the various states. State interests are less important than the support coalition interests within each state.[9]

The same story is told in slightly different form in Figure 6. There we have plotted a within-state standard deviation (the square root of the variance) band for each type. That is, each band shows the variation we would expect if all senators for a type came from an "average" state for that type and exhibited only within-state variation. Bands for the homogeneous Democrat and Republican types are narrow and generally well separated. They overlap only briefly and slightly for three of the Vietnam years. In contrast, the mixed state band is very large, usually covering all of the Democrat band and much of the Republican band.

These results argue strongly that while constituency interests are represented in Congress, the interests are mainly those of relatively extreme support coalitions rather than those of the constituency as a whole as represented by its middle-of-the-road voter.

Some indication that support coalition interests may be abating in favor of general constituency interests is found in Figure 5, which shows that the importance of within-state variation in mixed states has undergone a secular decline, falling from the 70-80 percent range found up to 1965 to a 50-60 percent range found after 1973. Such a fall would be consistent with the increased emphasis on case work and home office staffs found in recent years (Fiorina, 1978). Yet the fall is

largely offset by another phenomenon, the increasing polarization of the underlying support coalitions. This is seen in Figure 7, where we have plotted Republican and Democrat type one standard deviation bands for the total type variance. A similar story is told by Figure 8, where the plots concern all Senators and not just those from one party delegations. Pre-Vietnam party positions were fairly polarized, and there was only moderate overlap of the bands. With Vietnam party lines became blurred, and there was a very substantial overlap. Since 1975, however, party separation has been greater than ever, largely occasioned by a secular liberal drift of the Democrats. The overlap is now smaller than it has ever been (since 1959). So while senators may be slightly less prone to vote their support coalition's interests, when they do so, those interests are more polarized than ever.

Why are general constituency interests so often sacrificed to those of support coalitions? Our interest group ratings themselves tell much of the story. In our liberal-conservative scaling, most of the interest groups turn out to be more extreme than most of the senators (Poole, 1981). Groups with moderate views don't get involved in politics. Candidates in turn need people willing to contribute money and ring doorbells. While some competitive pressures may push them to the center, the need for resources retains them at the extremes. Although candidates might win votes by moving to the outer, a centrist position will generally leave them without enough resources for an effective campaign. In addition, a centrist position may spell doom in primary elections (Wright, 1978).

We indicated at the outset that we expect our analysis to apply far beyond the Senate. The Presidential analog of the story is typified by our EPA and education examples. At the state level, we could continue to look at California, appealing to the Brown-Reagan-Brown-Deukmejian shuffling at the gubernatorial level. Rather than a continual adjustment of middle-of-the-road policies, there are relatively rapid swings in the policy preferences of elected representatives and executives.

At first glance, the House of Representatives appears somewhat different. On the one hand, our results are similar to those of Fiorina (1974), who compared changes in a constituency's roll call behavior when the seat changed parties. Yet the key observation about the House is not that party makes a difference in how the constituency's representative votes, but that so few seats change party. We have a bountiful literature on vanishing marginals, declining competition, and the incumbency advantage. The House seems very different from our fully competitive Senate.

To some degree the difference is more apparent than real. When we talked about the Senate as being fully competitive, we spoke of long-term probabilities. Indeed, incumbency has obvious advantages in the Senate also. Despite a major recession, the Senate's delegation composition barely budged in the 1982 elections. Senate seats then look more competitive than the House, to some degree, because of the election of two members per constituency. Certainly, if the House had two member constituencies, we could also expect large numbers of mixed

delegations.

However, the difference is a real one to the extent that gerrymandering creates homogeneous House districts (Cain, forthcoming). In homogeneous, farming, suburban, or black districts, for example, middle-of-the-road constituency interests are almost trivially represented. But instead of a polarization of support groups within constituencies, as in the Senate, the House would then have a polarization of constituencies. Representatives are still likely to exhibit policy preferences that are extreme relative to national averages. In fact, histograms for the House similar to Figure 3 indicate that the liberal-conservative distribution in the House is far more polarized than in the Senate (Poole and Daniels, 1982). Since spatial analysis of policy preferences often (e.g., Rabinowitz, 1978; Poole and Rosenthal, 1982) disclose a unimodal distribution in the mass public, the polarized distribution of elected representatives and interest groups represents a curious form of representation.

We are sufficiently sophisticated students of social choice to make no normative case for middle-of-the-road representation over support coalition representation. We do point out that alternation in power among support coalitions imposes considerable costs. In the last months of the Brown administration in California, the state initiated commuter rail service between Oxnard and Los Angeles. Shortly after Deukmejian took office, the service was abandoned. While it is uncertain whether abandonment was preferable to continuing the service, never starting the service at all would clearly dominate the actual

policy sequence. Unfortunately, the costs of ping-ponging may be inevitable in a plurality democracy.[10]

FOOTNOTES

*   The work reported here would not have been undertaken had our interest in constituency representation not been stimulated by conversations with Rod Kiewiet and Thomas Romer. We also thank Bruce Cain for comments. Errors remain our responsibility.

1. For a detailed review of this literature, see Fiorina (1974). See also Kulinski (1979).

2. For a formal discussion of this point, see Morrison (1972).

3. For a detailed description of the scaling, see Poole (1981).

4. Related research on the House, to be discussed later, is found in Fiorina (1974). Subsequent to the initial draft of this paper, we discovered the work of Bullock and Brady (1983), who used a methodology virtually identical to ours with similar results. There are several differences between our work and theirs. (1) We treat 22 years rather than a single year. (2) Rather than using just two rating scales per year, we use a synthesis of over 50 scales. Since the recovered positions "explain" all votes to about the same degree (Poole, 1981; Poole and Daniels, 1982; Poole and Rosenthal, 1983), we can now claim that the Fiorina and Bullock-Brady type of results are robust to the scales chosen for

analysis. (3) We preserve a distinction between homogeneous Democrat states and homogeneous Republican states. This distinction proves relevant in the analysis. On the other hand, Bullock and Brady's paper is more ambitious than ours in the sense that they attempt to explicate these findings in terms of the heterogeneity of states.

5. The number of cases in each type is obviously small. Consequently, readers are urged to look at trends over several years in the figures in this paper and not to focus on results for individual years. In developing the types, we made the following decisions. Strom Thurmond switched from Democrat to Republican in 1964. We classified him as a Democrat prior to 1964, as a Republican after 1964, and discarded South Carolina from the analysis in 1964, explaining the presence of only 49 states in that year. In addition, Harry Byrd, Jr. of Virginia left the Democrats in 1970 to become an independent. Virginia has been discarded from the analysis from 1970 through 1980. In addition, it was necessary to discard South Dakota (except for Figure 1) in 1972 because Karl Mundt had no recorded votes for that year. Had Mundt voted, our results would have been reinforced since South Dakota's other senator was the highly liberal George McGovern.

6. This point is ignored by Bullock and Brady (1983) who use the presence of a mixed delegation in a state as a measure of

competitiveness in their path analysis. But such a measure is biased, since, in a fully competitive world, one party delegations will arise as frequently as mixed ones. A Senate with all delegations mixed would not be consistent with competition but with some other model, such as duopoly sharing of seats.

7. We used the procedure of Poole (1983), which generalizes the Eckart-Young (1936) matrix approximation method to allow for missing data.

8. Squared correlations between individual years and the combined scales range from 0.88 to 0.97. Results reported in this paper are virtually identical to those obtained using the untransformed scales. In fact, the linear transformations show little variation across years. Nonetheless, results such as the variance plot in Figure 2 do not follow automatically from this year-to-year stability. Since the correlations are computed for the members of the Senate in a given year, variances, etc. could vary across years because of changes in the Senate's membership.

9. This argument has been made by Huntington (1950); Fiorina (1974); and Fenno (1977).

10. Lijphart (1977) has previously suggested that plurality, two party systems typified by Britain and the United States may be more

subject to wide policy swings than multi-party proportional systems typified by the Netherlands and Switzerland. He gives the nationalization -- denationalization cycles of the British steel industry as an example of how ping-ponging may be more costly than a consistent policy.

REFERENCES

Bullock, Charles S. III, and Brady, David W. (1983). "Party, Constituency, and Roll Call Voting in the U.S. Senate." Legislative Studies Quarterly 8:29-43.

Cain, Bruce E. (forthcoming). The Reapportionment Puzzle. Berkeley: University of California Press.

Clausen, Aage R. (1973). How Congressmen Decide: A Policy Focus. New York: St. Martin's Press.

Eckart, Carl, and Young, Gale. (1936). "The Approximation of One Matrix by Another of Lower Rank." Psychometrika 2:211-218.

Fenno, Richard. (1977). Home Style. Boston: Little Brown.

Fiorina, Morris P. (1974). Representatives, Roll Calls and Constituencies. Lexington, MA: Heath.

_____. (1978). Congress: Keystone of the Washington Establishment. New Haven: Yale University Press.

Huntington, Samuel P. (1950). "A Revised Theory of American Party Politics." American Political Science Review 44:669-677.

Kulinski, James. (1979). "Representative-Constituency Linkage: A Review Article." Legislative Studies Quarterly 4:121-141.

Lijphart, Arend. (1977). Democracy in Plural Societies. New Haven: Yale University Press.

Morrison, Richard J. (1972). "A Statistical Model for Legislative Roll Call Analysis." Journal of Mathematical Sociology 2:235-247.

Poole, Keith T. (1981). "Dimensions of Interest Group Evaluation of the U.S. Senate 1969-1978." American Journal of Political Science 25:41-57.

_____. (1983). "Recovering a Basic Space From a Set of Issue Scales." Working Paper #44-82-83, Graduate School of Industrial Administration, Carnegie-Mellon University, Pittsburgh, PA.

_____, and Daniels, R. Steven. (1982). "Ideology and Voting in the U.S. Congress 1959-1980." Paper presented at the annual meeting of the Midwest Political Science Association.

_____, and Rosenthal, Howard. (1982). "U.S. Presidential Elections 1968-1980: A Spatial Analysis." Working Paper #46-81-82, Carnegie-Mellon University, Pittsburgh, PA.

_____, and _____. (1983). "A Spatial Model for Legislative Roll Call Analysis." Social Science Working Paper, California Institute of Technology, Pasadena, CA.

Rabinowitz, George. (1978). "On the Nature of Political Issues: Insights From a Spatial Analysis," American Journal of Political Science 22:793-817.

Stone, Walter J. (1977). "A Panel Analysis of Representation in Congress: A Preliminary Report." Paper presented at the annual meeting of the American Political Science Association.

Wright, Gerald C. (1978). "Issue Structure in Congressional Elections: The Impact of the Primary Electorate." Paper presented at the annual meeting of the Midwest Political Science Association.

Figure 1

Number of States of Each Type

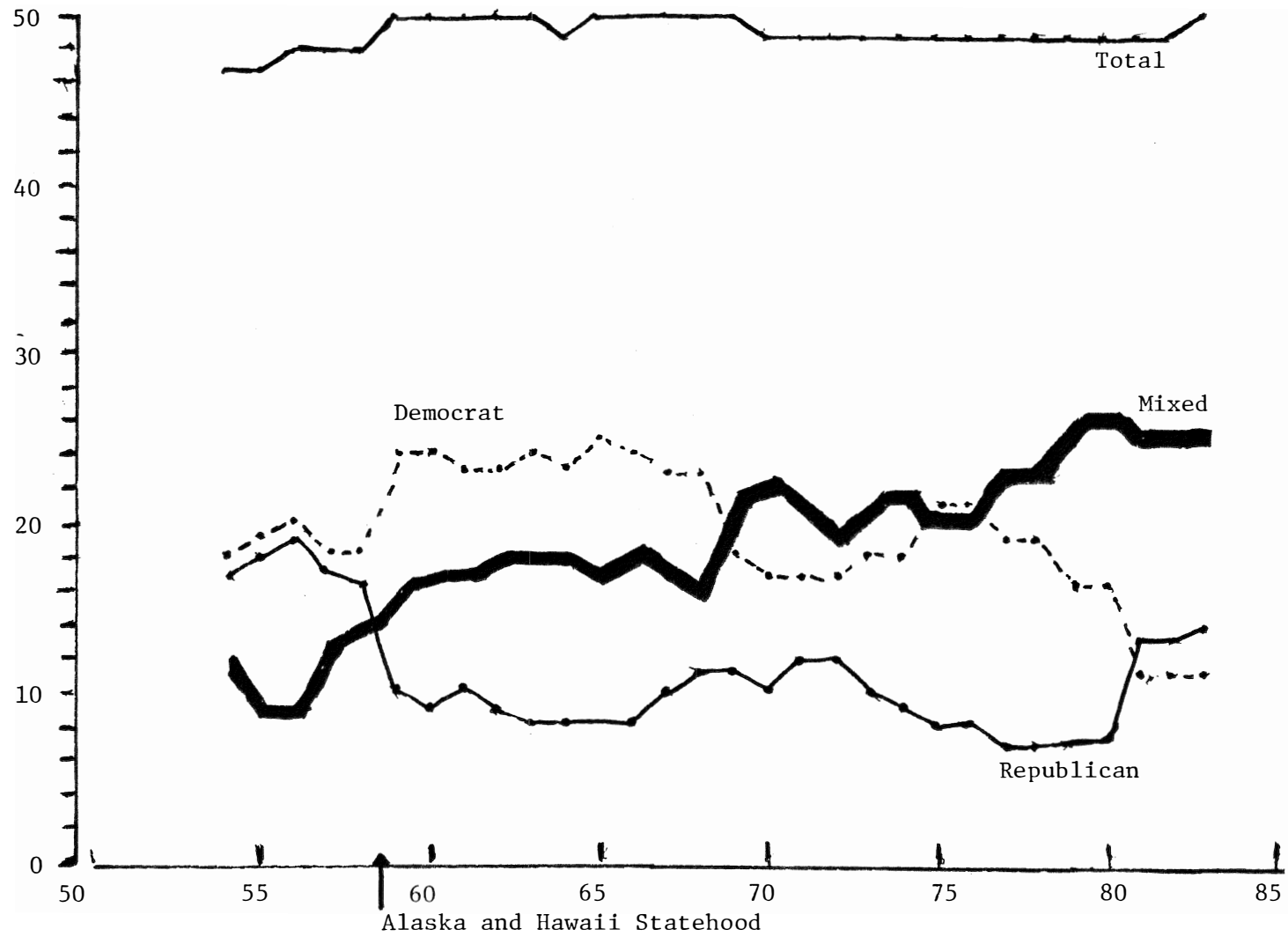### NOTE: States with Vacancy or Minor Party Senator Not in Total

Figure 2

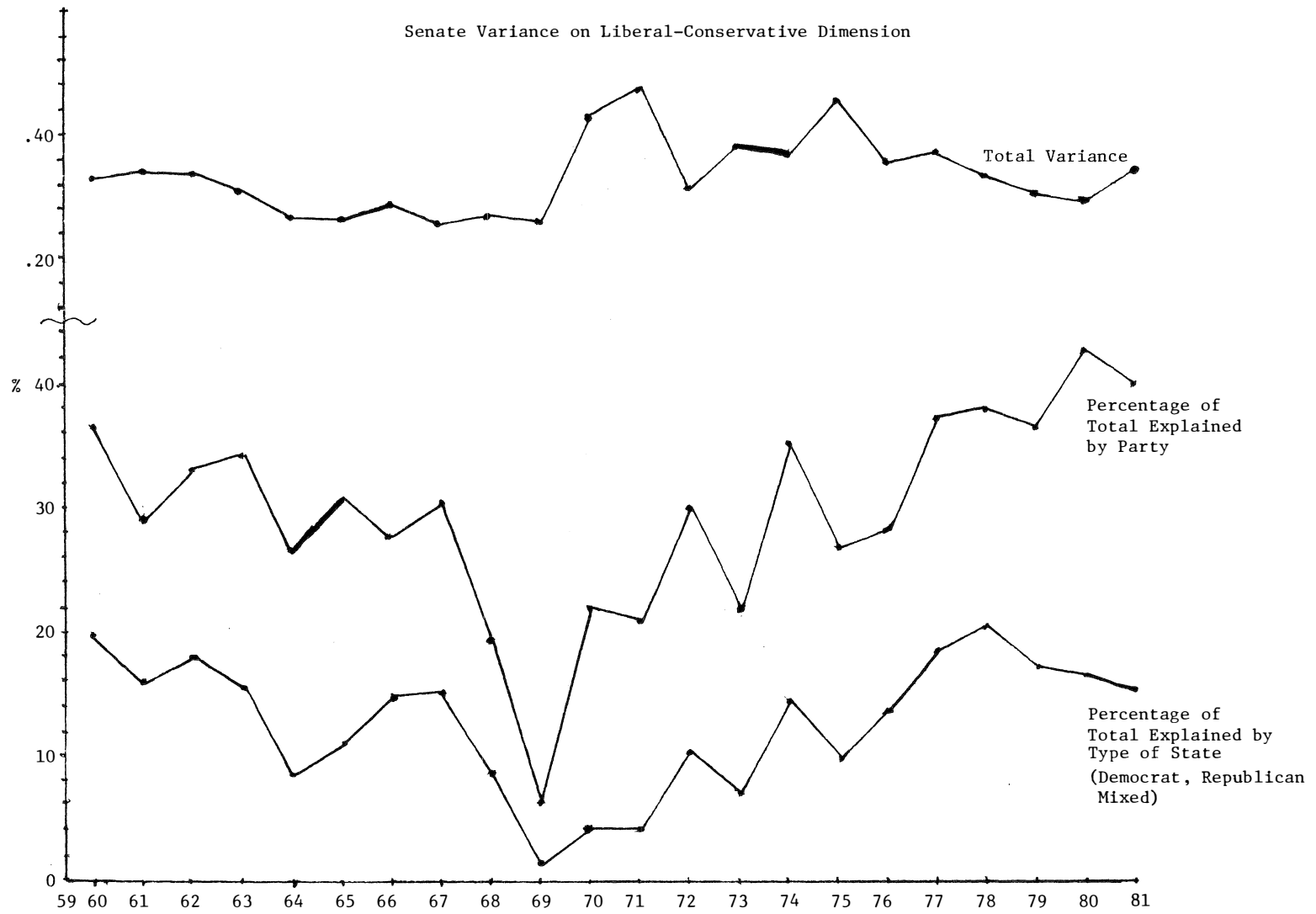Senate Variance on Liberal-Conservative Dimension

Figure 3

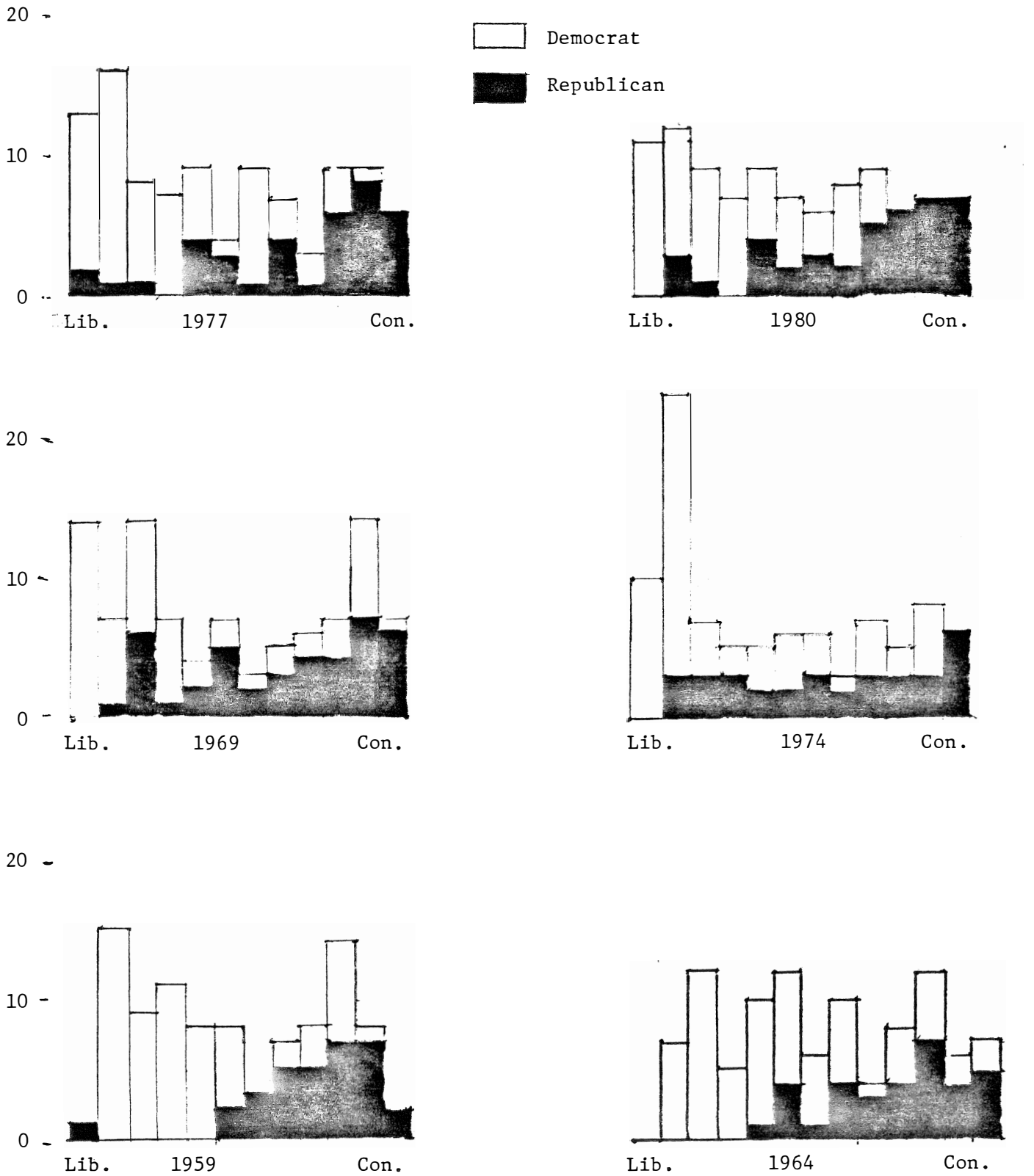Distribution of Senators on Liberal-Conservative Dimension

Figure 4

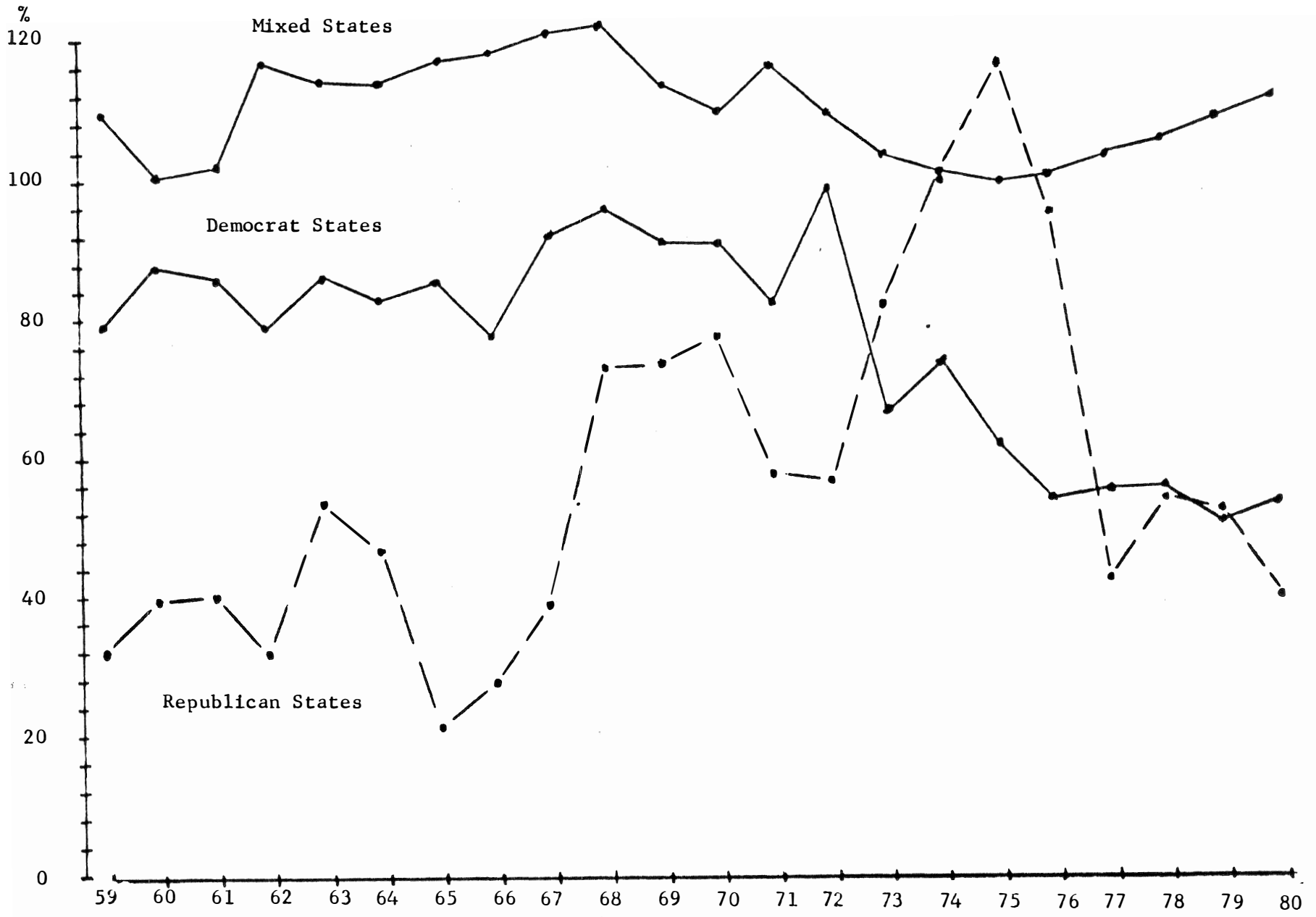Type Variance as a Percentage of Total Variance

Figure 5

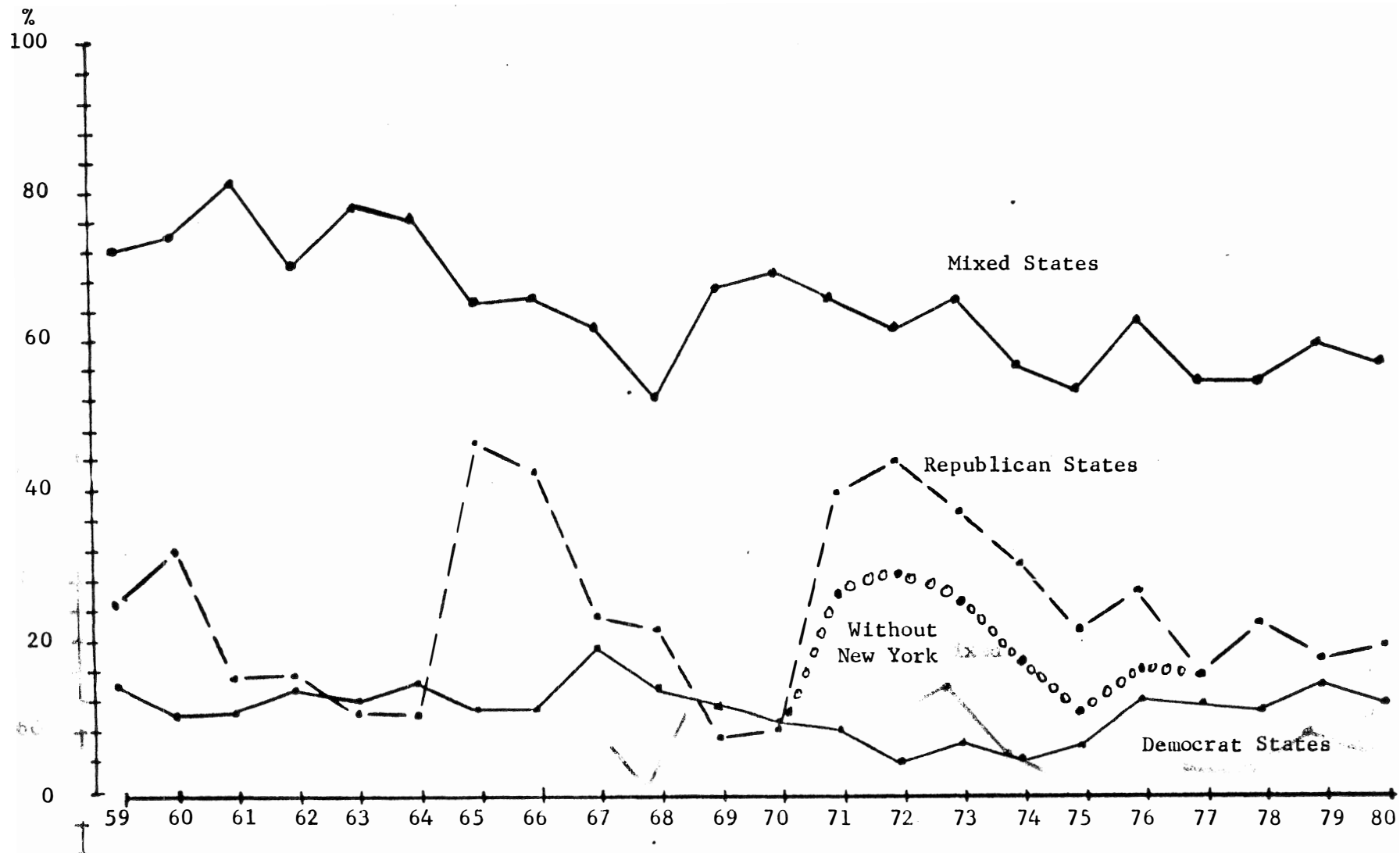Percentage of Type Variance That is Within-State

Figure 6

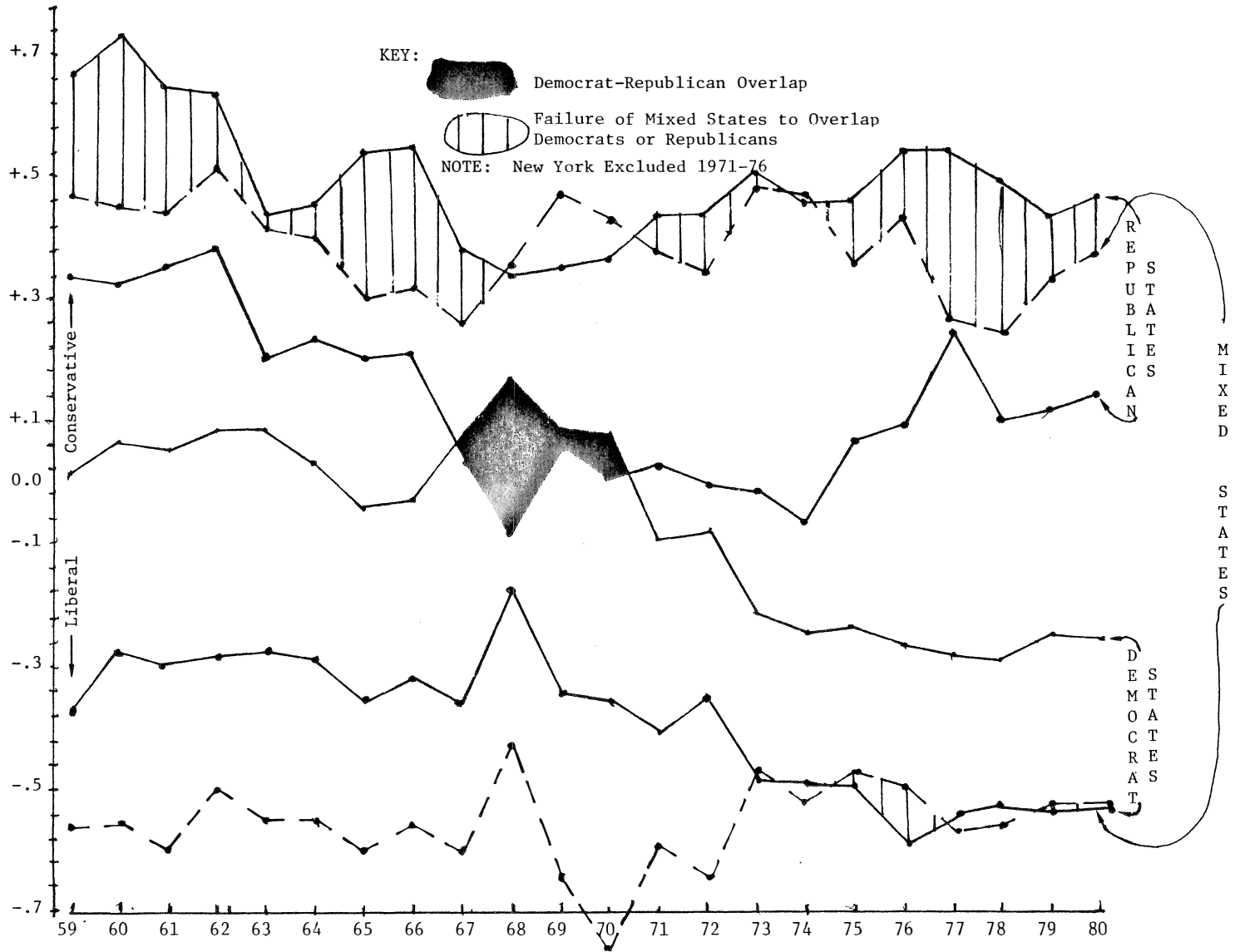± One Standard Deviation Bands for Within State Variance

KEY:

Democrat-Republican Overlap

Failure of Mixed States to Overlap
Democrats or Republicans

NOTE: New York Excluded 1971-76

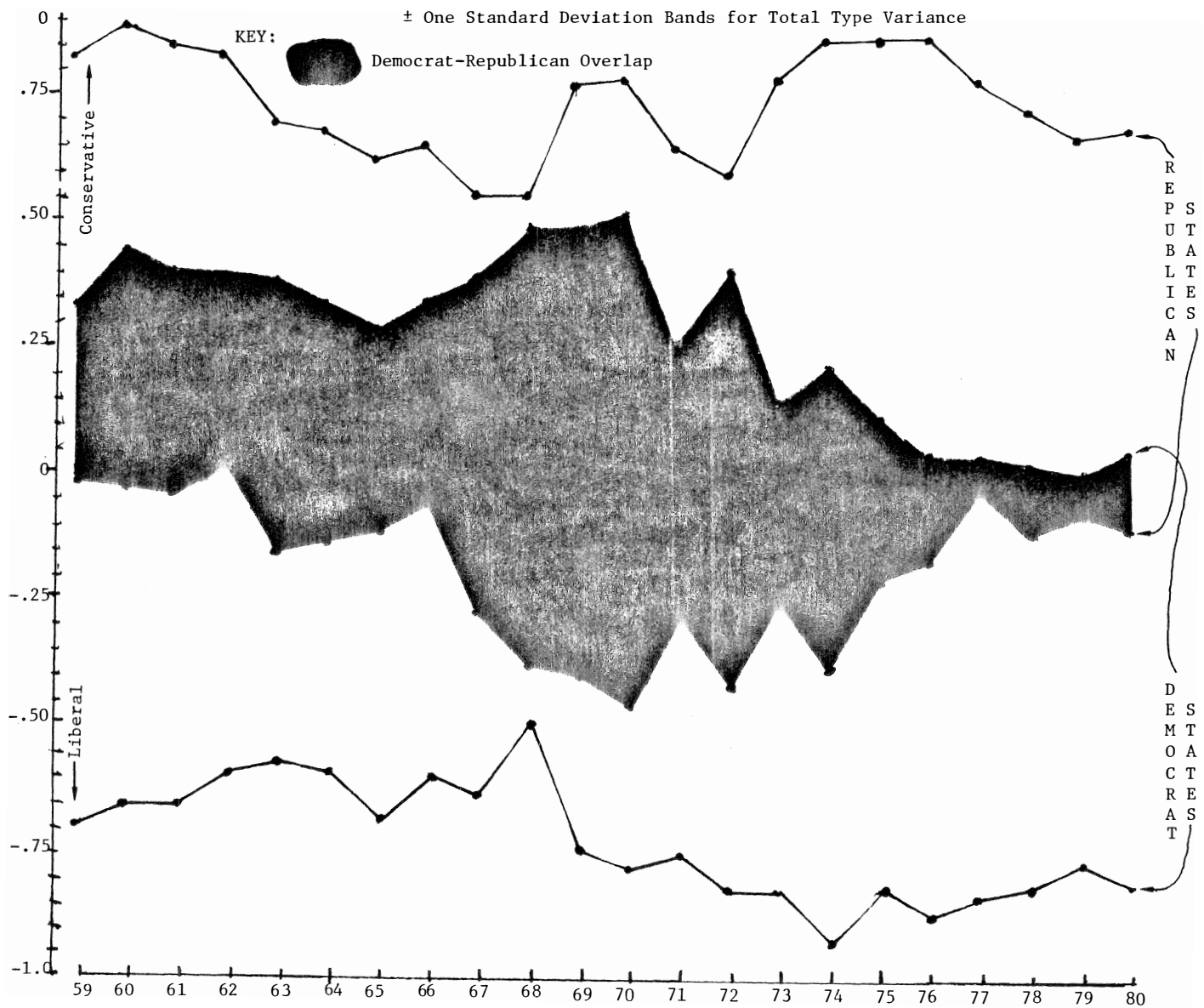Figure 7

± One Standard Deviation Bands for Total Type Variance

Figure 8

± One Standard Deviation Bands for All Party Members