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TWO THEORIES OF LEGISLATIVE VOTING BEHAVIOR: A THEORETICAL AND EMPIRICAL ASSESSMENT

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ABSTRACT

TWO THEORIES OF LEGISLATIVE VOTING BEHAVIOR:

A THEORETICAL AND EMPIRICAL ASSESSMENT

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This dissertation examines the status of legislative voting behavior research by evaluating two of the more prominent theories in the area from both a theoretical and statistical perspective. The first, by John Kingdon, portrays the act of roll call voting as an exercise in consensus building and evaluation. Legislators are predicted to vote with the predominant consensus in their subjectively defined field of forces. The second, by Morris Fiorina, asserts that a legislator's vote is a function of his or her political aspirations, electoral status, and perception of constituency opinion on any given roll call. These factors are integrated in a decision - theoretic framework under conditions of uncertainty.

Each model was evaluated as a theoretical formulation by examining the explicitness and plausibility of its assumptions, the relationship between its axioms and theorems, its parsimoniousness, and its verisimilitude to the roll call voting process. Based on these criteria, it

was concluded that Fiorina's model was the stronger of the two theoretical formulations. Neither theory, however, was uniformly strong across all four criteria.

In order to assess the statistical efficacy of each theory, one hundred and fifteen interviews were conducted with thirty-three Michigan State Senators on six key 1976 roll votes. Using the prediction analysis technique developed by Hildebrand, Laing, and Rosenthal, it was determined that Kingdon's model achieved perfect prediction in those instances where one or two actors were in conflict with the legislator's field of forces. It was slightly less accurate on noncontroversial roll call votes and in those instances where no conflict could be found in the field of forces. The propositions from Fiorina's theory, in comparison, fared far worse. The level of statistical accuracy achieved by his model was generally lower than that achieved by random prediction mechanisms and by simple party and chamber majority null models. Its poor performance, however, may be attributable to less than truthful interview responses and to difficulties in operationalization. Based on these considerations, further empirical tests of the theory are clearly merited.

The theoretical and statistical evaluations of these two prominent voting models have helped clarify the major challenges that scholars of legislative voting behavior must address in the future. First, efforts must be made to improve existing theories that show promise. The

statistical efficacy of the consensus model, for example, has now been demonstrated at both the federal and state level. Its usefulness could be significantly increased, however, by a delineation of the axioms underlying its decision rules. Second, new theories must achieve structural tightness and parsimony without sacrificing plausibility. This will necessitate the integration of short and long term determinants of the vote in a unified framework. Third, the level of measurement technology must be improved sufficiently to permit field testing of the more complex theories. And finally, greater attention should be paid to the small percentage of deviant votes which stubbornly elude successful prediction and explanation.

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CHAPTER ONE

LEGISLATIVE VOTING RESEARCH: AN OVERVIEW

INTRODUCTION

Thaddeus Casimir Stopczynski is a rather curious fellow. An ex-policeman, he represents a largely Polish community from northeast Detroit in the Michigan House of Representatives. A bane to House liberals, Stopczynski is widely known for his consistent "no" voting on almost all substantive issues. As a member of the Detroit School Board in the early 1970's, he was vigorously opposed to any kind of busing or integration plan for the city's schools. While in the House, he has staunchly opposed any kind of legislation designed to provide abortion funds for poor women, special hiring programs for minorities, or curbs on the practice of racial steering in real estate transactions. In a column in the Detroit Free Press, writer Hugh McDiarmid described Stopczynski in the following terms:

> By most estimates, Stopczynski is a textbook example of the representative system of government in action.
>
> His peers - even the ones who don't like him - admit that he is one of those legislators who consistently and outspokenly votes his district. What's more, they say, he does so without the slightest qualm or tremor.
>
> And the district, which is predominantly white, ethnic and conservative, responds.

> It elected him by a big margin when he first ran in 1972 (when he unseated an 18-year incumbent in the Democratic primary), and it has reelected him by huge margins ever since.
>
> He is, in short, the very sort of politician that his district wants in Lansing and, as such, is part of a process that produces a state Legislature that is enormously disparate in its makeup but remarkably representative of the people of Michigan.[1]

The fact that the real or perceived preferences of constituents can influence the roll call voting behavior of legislators is something political scientists have documented through a number of empirical studies.[2] Yet it is only on rare occasions that one encounters a legislator like Thaddeus Stopczynski, whose voting behavior so consistently mirrors the attitudes of those he represents. More often than not, a representative's voting record is a product of a number of difference factors which may vary in importance from roll call to roll call.[3]

This dissertation will explore the determinants of legislative voting in order to shed light on who gets represented through the vote and why - two questions which have intrigued democratic theorists for ages. It will do so by evaluating two of the most recent and advanced theories of legislative voting behavior - one developed by John Kingdon[4] and the other by Morris P. Fiorina.[5] Each model will be examined from both a theoretical and statistical point of view. Before passing judgment on either, we will evaluate each one as a formal theory by comparing their structural properties against those which philosophers of

science frequently claim a good theory ought to possess. Then we will assess the predictive accuracy of each on a series of key role call votes taken during the 1976 sessions of the Michigan Senate. This approach will hopefully permit us to make some statements about the contributions of each theory to the study of legislative behavior. But more importantly, we hope that it will allow us to say something significant about the current status of legislative voting research and the theoretical and methodological challenges that will face legislative scholars in the future.

The theories of Kingdon and Fiorina were chosen for specific reasons. First, they represented two of the more recent and stimulating attempts at theorization in the area.[6] Second, both appeared amenable to successful field testing. That is, they could both be operationalized without becoming too large in scope for a doctoral dissertation. And finally, the theories were selected because neither had been tested sufficiently to demonstrate its efficacy. In fact, Fiorina's theory had never been tested anywhere, while Kingdon's had never been evaluated at the state level.

AN OVERVIEW OF LEGISLATIVE VOTING RESEARCH

Before embarking on our study of Kingdon and Fiorina's theories, it would be prudent to provide the reader with an overview of previous research in the area of legislative voting behavior. This is no easy task, for the existing literature has been characterized by one researcher as

"noncumulative, noncomparable, confusing, and sometimes simply contradictory."[7] We agree. Anything less than a first-hand reading of the literature will probably make it difficult to "see the forest for the trees."[8] To minimize confusion, therefore, we will try to highlight broad trends in legislative voting research, primarily focusing on advances which have been made during the last quarter century. This approach limits us to using individual works to the extent that they illuminate broader trends in the field.

IN THE BEGINNING: STUDIES EMPLOYING "PARTY" AS A DEPENDENT VARIABLE

Empirical research on legislative voting can be traced to the beginning of the 20th century with the publication of A. Lawrence Lowell's monograph "The Influence of Party Upon Legislation in England and America."[9] In this work, Lowell examined patterns of voting in several state legislatures, the U.S. Congress, and the British House of Commons to determine the extent to which voting in these legislative bodies divided along party lines.

Lowell chose to define a party vote as any on which 90 percent or more of the members of one party oppose 90 percent of the members of the others. This, it must be realized, is an extremely tough criterion. He found party voting in late 19th and early 20th century America to be erratic and decidedly less pronounced than in the British House of Commons. Lowell had no satisfactory explanation for the difference. Nor did he speculate about what the difference would mean for the operation of the two political

systems. He was simply content to be the first to document this fact empirically.

We have mentioned Lowell's study, not because of any substantive contribution it might have made, but because it represents the first real thrust into the realm of quantitative legislative research. After the publication of Lowell's study, no significant quantitative analysis was conducted in this area for another fifty years!

It was not until 1951 that another great stride was taken in empirical legislative research. That year witnessed the publication of Julius Turner's seminal work, Party and Constituency: Pressures on Congress.[10] Turner undertook his research during a period when American political parties were being severely criticized for their lack of discipline and responsiveness. Many critics felt that the American parties were incapable of developing or enacting real party programs. They called for major reforms in the system.

It was in this kind of atmosphere that Turner set out to demonstrate that American parties were, in fact, different. It was his feeling that, even though the programmatic differences between Republicans and Democrats were clearly less pronounced than those between British parties, they were nonetheless real and measurable through quantitative techniques.

The chi-square measure of statistical significance was chosen by Turner to demonstrate that, over a series of roll call votes, Republicans could be differentiated from

Democrats. He felt that if roll call voting behavior could be shown to deviate from randomness to a certain degree, that the differences between party members would be illuminated. Shanon has argued that Turner's procedure can only legitimately be interpreted to mean that on any given roll call "there is not more than one chance in one hundred that the observed voting behavior of the parties could have occurred, if their membership had been selected by chance."[11]

Using the chi-square test, Turner did find what he had expected all along - that statistically significant differences existed between the voting behavior of Democrats and Republicans. In his own words, "party pressure seems to be more effective than any other pressure on congressional voting, and is discernible on nearly nine-tenths of the roll calls examined."[12]

It can be convincingly argued that Turner's test was so easy that even the least cohesive legislative parties could pass. Statistically significant differences, of course, do not have to be substantively meaningful. Consequently, the probability is quite high that Turner grossly overestimated the importance of "partv" in Congressional voting. Yet in spite of this, we would still argue that Turner's approach represented a real advance in the study of legislative voting behavior.

The influence of "constituency" was also examined by Turner. He began by classifying each congressional district along three dimensions - metropolitanism - ruralism,

foreign-native population, and sectional location. Then, primarily relying on the chi-square test again, he demonstrated that constituency characteristics were indeed related to roll call behavior, but less strongly than "party." In addition, he found that constituency characteristics helped explain variations in party loyalty. Legislators from districts with constituency characteristics "atypical" of their legislative party had substantially lower party loyalty scores than legislators from more typical districts. Fiorina has dubbed this finding the "atypicality hypothesis."[13]

A year after the publication of Party and Constituency, Duncan MacRae completed a study which replicated Turner's design in the Massachusetts House of Representatives.[14] He too found that both party and constituency help explain roll call voting behavior. The "atypicality hypothesis" again received empirical confirmation. But MacRae's study gave birth to a new hypothesis that legislators from competitive or marginal districts also tend to be disloyal to their parties. This has been labelled the "marginality hypothesis."[15]

The studies of Turner and MacRae played an important role in the history of legislative behavior research. They helped spawn a number of subsequent projects which again focused on the impact of party and constituency variables on a legislator's roll call behavior. Moreover, almost all of the studies explored the atypicality and marginality hypotheses.

It would be inefficient, and probably confusing, to individually examine the specifics of these half dozen or so replications. To simplify matters, we have crudely summarized their findings in Table 1. A cursory examination of that table suggests (a) that the atypicality hypothesis may be supportable at the state, but not the federal level and (b) that evidence supporting the marginality hypothesis is equivocal at the state level and almost nonexistent at the federal. None of these studies provided compelling theoretical explanations for the differences in the empirical results.

The works of Turner, MacRae, Dye, Patterson, Flinn, Shanon, Pesonen, and Parsons are critically important if one is to understand the thrust of much of the research on legislative voting behavior between 1950 and 1965. Before we proceed to a discussion of the next category of research, there are a number of points we would like to make in order to bring the significance of this first group into sharper focus.

* The works of Turner and MacRae had an amazingly strong influence on the works of the other researchers. They helped place the study of party and constituency influence on roll call voting high on the agenda of legislative scholars of that period. In particular, they helped direct the attention of many researchers to the empirical exploration of the marginality and atypicality hypotheses.

* These studies were strictly empirical in nature. None of them was developed from a theory that specified how and why party and constituency might influence roll call behavior.

STATE LEGISLATURES

ATYPICALITY HYPOTHESIS	MARGINALITY HYPOTHESIS
A. Dye (1958, Pa. study)[16] * Support in House * No support in Senate	A. Dye (1958, Pa.)[23] * Support in House * No support in Senate
B. Patterson (1962, Wisc. study) * Support in the one party Wis. legis.	B. Patterson (1962, Wisc.)[24] * Support in the one party legislature
C. Flinn (1964, Ohio study)[18] * Support in Ohio Senate	C. Flinn (1964, Ohio)[25] * No support
D. Pesonen (1963, Mass. study)[19] * Weak support in House	D. Pesonen (1963, Mass.)[26] * Conditional findings Support for Democrats but no support for Republicans

CONGRESS

A. Froman (1963)[21] * Equivocal findings	A. Froman (1963)[27] * No support
B. Shanon (1968)[22] * No support	B. Shanon (1968)[28] * Very weak support

FIGURE I-I: Summary of Empirical Tests of the Atypicality and Marginality Hypotheses

* Prediction of a legislator's vote on a given roll call was not a topic of real interest in these studies. This reflects the fact that scholars in this group were not testing models of roll call behavior. They were simply involved in establishing empirical linkages between this behavior and various measures of party and constituency.

* Because of measurement problems and logical errors, these studies would later generate a good deal of confusion concerning the influence of party and constituency in the legislative arena. There are at least three reasons for this. First, the use of aggregate constituency characteristics as a measure of constituency opinion produced a great deal of distortion. The extent of this distortion would only become clear as researchers switched from using demographic and electoral characteristics as independent variables to actual constituent attitudes obtained through surveys. Second, almost all of these works overlooked the fact that party influence and constituency influence are probably not independent events. On a theoretical level, there may be a large area where these two factors overlap each other. As a result, it is highly probable that this first group of studies inaccurately estimated the independent influence of each of these factors. Finally, these works would generate confusion in the field because of an illogical inference drawn from the data. One scholar, in particular, set forth the argument that loyalty to one's constituency implies disloyalty to one's party.[29] Stated in a slightly different manner, legislators with low party loyalty scores probably achieved these scores because of pressures from their constituencies. There is no logical basis for this claim. As Fiorina has said, "so long as indices of party loyalty are employed as dependent variables, one can assert nothing about the strength of constituency influence on different representatives without supporting knowledge of the extent to which their party and their constituency interests clash."[30]

IMPROVEMENTS ON THE TURNER DESIGN

The next discernible phase in the history of legislative voting research is more noteworthy for its technical and methodological advances than for its contribution to theory. The development of new analytical techniques, like Guttman scaling, and increased usage of survey data, helped legislative scholars move beyond the simple research design of Turner. Unfortunately, these improved methods did not do very much to clarify previous confusion in the field or to provide us with any reliable new generalizations about roll call voting behavior.

The first work to demonstrate a dramatic departure from Turner's design was Duncan MacRae's now classic study, Dimensions of Congressional Voting.[31] Abandoning the use of party loyalty as the dependent variable, MacRae sought to demonstrate that a legislator's voting record was actually comprised of a number of different dimensions. He subjected the roll call votes of Representatives in the 81st Congress to Guttman's scaling technique with Fair Deal, agriculture, race relations, and foreign aid scales emerging from the analysis. These "issue area" scales replaced party loyalty as the new dependent variables.

The next step in MacRae's analysis was to correlate scores on the various issue scales with a series of aggregate (census) constituency characteristics. The goal, once again, was to document the extent to which constituents influenced the voting behavior of their representatives. MacRae discovered numerous individual associations, but was

unable to uncover any systematic pattern of relationships. His research demonstrated that "some constituency characteristics are weakly to moderately related to voting on some issue dimensions."[32]

MacRae's basic design was followed by Shanon[33] in a study of the 86th and 87th Congresses and by Van Der Slik[34] in a study of the 88th Congress. Once again, no consistent relationships were uncovered between constituency characteristics and roll call voting in various issue areas. In fact, the findings from these two studies were slightly more equivocal than MacRae's.

There are two more scale studies that merit discussion because of their greater methodological sophistication and creativeness. The first, by John Jackson, was designed to "relate precise measures of senators' positions on different bills to similar measures of the many influences used to explain their positions."[35] Jackson constructed a separate regression equation for every Senator in the study in order to assess the comparative influence of constituency and party leadership on voting behavior. The dependent variables in these equations were Guttman scale scores derived from combining a senator's position on various amendments and roll calls for a given issue. Jackson found that his constituency measures generally accounted for more of the variance in the issue scale scores than the party measures, but this finding was subject to numerous qualifications.[36]

The other scale study which deserves mention was

conducted by Aage Clausen.[37] It was his belief "that congressmen refer a large number of specific policy questions to a very limited set of general policy concepts."[38] He supported this contention by demonstrating the stability of government management, social welfare, international involvement, civil liberties, and agricultural assistance dimensions in House voting between 1953 and 1970. More importantly, he showed that the scale scores of individual representatives on these dimensions also remained stable over time.

Like most of the other analyses we have examined thus far, Clausen's study explored the impact of party and constituency factors on roll call voting. His findings suggest that constituency is of greater influence on the international involvement and civil liberties dimensions, whie party influence is stronger on the remaining three dimensions. Yet these conclusions could be especially misleading, for Clausen's research design has been severely criticized for confounding the factors of party and constituency.[39]

The scale studies that we have just discussed do, in fact, represent a significant improvement over Turner's original research design. The replacement of party loyalty indices as dependent variables with issue scales, has provided legislative scholars with new and more stimulating avenues to explore. It should be pointed out, however, that improvements on the Turner design were not limited to the scale studies. A handful of other projects made contributions

by improving the measurement of constituency opinion.

John Kessel's study of the Washington Congressional delegation is a particularly interesting example.[40] Kessel scored each member of the delegation in terms of their favorability to an expanded federal role in six different issue areas.[41] Like many legislative scholars before him, he sought to uncover empirical linkages between constituency characteristics and roll call behavior. What is particularly fascinating about Kessel's study, though, is the procedure used to assess district opinion. Instead of using aggregate census data, Kessel asked each congressmen to subjectively estimate the position of his constituency in the various areas. The result was an impressively high association between legislators' perceptions of constituency opinion and their roll call voting behavior.[42]

A dramatically different approach to the measurement of constituency opinion can be found in Crane's study of the 1957 Wisconsin Legislature.[43] On the issue of Daylight Savings Time, Crane measured district opinions by using the returns from a public referendum on that topic. The positions of Wisconsin's legislators were easily documented, for they had cast roll call votes on the issue at an earlier date. Crane's analysis revealed that nearly eighty-five percent of the legislators voted with the majority position in their district.

Of all the works using survey data to measure constituency opinion, the one by Miller and Stokes is perhaps the best known.[44] The dependent variable in their study was a

representative's roll call behavior as measured by individual Guttman scale scores on social welfare, foreign involvement, and civil rights policy dimensions. The independent variable was constituency opinion as measured by the survey responses from a sample of constituents in 116 congressional districts.[45]

The Miller and Stokes investigation is particularly noteworthy because, unlike its predecessors, it specified several mechanisms through which constituency opinion could influence voting behavior (see Figure I-2).

> Broadly speaking, the constituency can control the policy actions of the Representative in two alternate ways. The first of these is for the district to choose a Representative who so shares its views that in following his own convictions he does his constituents' will. In this case district opinion and the Congressman's actions are connected through the Representative's own policy attitudes. The second means of constituency control is for the Congressman to follow his (at least tolerably accurate) perceptions of district attitude in order to win reelection. In this case constituency opinion and the Congressman's actions are connected through his perception of what the district wants.[46]

Tests of the Miller and Stokes representation model revealed substantial agreement between constituency opinion and Congressmans' votes, particularly in the areas of civil rights and social welfare. Moreover, of the two possible influence paths, it was found that the Congressman's perception of the district's views was preeminently important.[47] Approximately sixty-nine percent of the variance in the roll call votes was explained by the path.

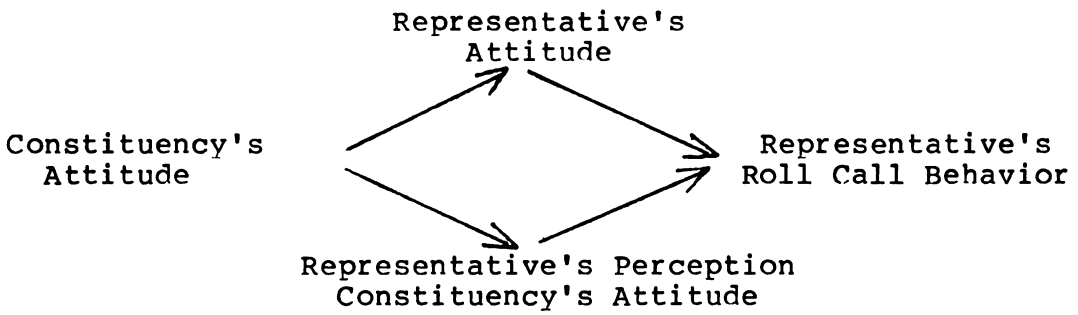

FIGURE I-2: The Miller-Stokes Model

The studies which we have examined in this section do, we believe, represent an identifiable stage in the history of the study of legislative voting behavior. Before proceeding to a discussion of the next stage, we would like to make the following points about this collection of research.

* As a group, these studies improved on Turner's research design in two ways. First, they abandoned indices of party loyalty as their dependent variables, usually substituting issue area scales instead. And second, they employed better measures of constituency opinion.

* The use of issue area scales did not produce any reliable generalizations concerning the relationship between constituency characteristics and roll call behavior.

* The use of improved measures of constituency opinion provided support for the argument that aggregate (census) measures of district attitudes produce an "attenuated" association between constituency opinion and roll call behavior.

* With perhaps one exception, these studies were not based on an underlying theory specifying how and why constituency opinion might influence a legislator's voting behavior.[48] They were almost entirely empirical in nature.

* Finally, these studies were unconcerned with the "prediction" of roll call votes.

THE ERA OF THEORETICALLY ORIENTED RESEARCH

The first two phases of legislative voting research we have labelled as empirically oriented, primarily atheoretical in character. Toward the end of the 1960's, signs began to emerge that a new direction was being pursued by some scholars in the field. Their works demonstrated a greater concern with establishing reasons why party and constituency, and other factors too, should be expected to have an impact on roll call voting behavior. The empirical components of these studies were conducted, not in a vacuum, but within the context of a set of related propositions - an organizing theory.

One of the earlier examples of theoretically based legislative studies is Cherryholmes and Shapiro's computer simulation of voting in the 88th Congress.[49] They hypothesized that the essential features of a legislator's voting behavior could be captured by a conceptually simple two stage model. In the first stage, factors like party, constituency, and region are evaluated in order to give each legislator a "predisposition" on the roll call in question. If the predisposition is sufficiently strong, the theory predicts that the legislator will vote in accordance with the predisposition. If it isn't, the legislator enters a "conversation" stage where the probability of interaction with fellow members is estimated. These probabilities are

added to the original predisposition score and then averaged. The model predicts that a legislator will vote "yes" on a bill when his final predisposition score is positive, and "no" when it is negative.

Cherryholmes and Shapiro's model enhances our understanding of how a legislator might make up his mind on a roll call vote. The 84 percent predictive accuracy of the model testifies to its potential usefulness as a means for comprehending the voting process. Yet in spite of its laudatory statistical success, the "predisposition - conversation" model does little, if anything, to disentangle the effects of party and constituency, or to establish reliable generalizations about roll call behavior.

The "cue - taking" theory developed by Matthews and Stimson was intended to illuminate the way legislators make decisions on the vast majority of roll call votes - those that are typically routine and noncontroversial.[50] It is based on a relatively small number of premises, among which the most important are:

a) The normal situation of a legislator with regard to most of the roll call voting decisions he makes is one of low information.

b) The cost of raising his information base to a level adequate for fully independent decisions consistent with his multiple goals is prohibitive, given the number, scope, and technical complexity of the decision he is expected to make.

c) Cues - pro or con evaluations of legislative issues - are available from a variety of sources in the legislature at the time of the decision.

d) Such cues are an exceedingly economical means for the member to estimate what his position

> would be if he had the time and information necessary for an independent decision.[51]

When viewed as a whole, these premises constitute a rudimentary theory of routine legislative decision-making based on the taking of cues. But then who are the cue-givers? Matthews and Stimson have identified nine possibilities in the U.S. House of Representatives - the House majority, the party majority, the Democratic Study Group, the administration, committee chairmen, the ranking minority member, the conservative coalition, the party leadership, and the state party delegation.

Matthews and Stimson's operationalization of the cue-taking model basically consists of three steps. In the first, the simulation program determines which of the nine cue sources are available for the legislator. In the second it finds which of these available cues the member has voted for or against most often on the preceding fifty roll calls. This number, by the way, was chosen because it is large enough to avoid the undue influence of a short series of strange votes and small enough to allow for genuine change.[52] In the final step, the program predicts that the legislator will vote in accordance with (or against) the position of the most frequently used cue source. Matthews and Stimson found that their simulation model would provide correct predictions on approximately eighty-eight percent of the roll calls.

The statistical accuracy of the cue-taking model is striking, but is also does little in terms of adding to the

store of reliable generalizations on legislative voting behavior. We still know virtually nothing about why, or in what instances, particular cues sources will be utilized.

The last theory that we will examine in this chapter was proposed by Aage Clausen. He refers to it as the "policy dimension" theory of legislative decision-making.[53] According to Clausen, a legislator votes by (1) taking any given piece of legislation and associating it with one of a limited number of policy content categories or dimensions (2) placing himself somewhere along that dimension and (3) voting for that alternative which comes closest to his own position on the policy dimension. Unfortunately, Clausen's theory has never been tested, so it would be difficult, if not unfair, to judge its contribution to the literature at this point in time.

The studies we have just examined represent a clear departure from those in the first two sections. What distinguishes them from previous works is their attempt to develop theoretical models that not only explain, but actually predict, roll call voting behavior. Because of their emphasis on theory, they have provided a much needed guide for future empirical research. Yet none of them, to date, has spawned a set of truly reliable generalizations.

CONCLUDING REMARKS

The purpose of this chapter has been to provide the reader with an overview of developments in the area of legislative voting research. We have argued that since

1950, the field has passed through two stages and is currently in the midst of a third.

During the first period, the research of legislative scholars was strongly influenced by the works of Julius Turner and Duncan MacRae. Roll call voting behavior was narrowly conceived in terms of party loyalty within the legislature. And the impact of "constituency" on that behavior was assessed by correlating aggregate census data with various indices of party loyalty.

The studies of this period did uncover empirical linkages between voting behavior and constituency characteristics. But they did little to help us understand why and when these linkages would occur. Lacking a basis in theory, these studies could not resolve the contradictory empirical findings from tests of the atypicality and marginality hypotheses. As a consequence, they did not provide us with generalizations about roll call voting behavior.

During the second period, researchers made several improvements on the original Turner design. They elected to define roll call behavior, not in terms of party loyalty, but in terms of various issue area Guttman scales. The goal, then, became the establishment of empirical linkages between "constituency" and roll call voting in the different issue areas. Using improved measures of district opinion, the studies of this period again demonstrated that party and constituency are important determinants of a legislator's vote. Yet the findings from these works had so many qualifications, that few generalizations about roll call behavior

were added to our storehouse of knowledge.

Sometime toward the end of the 1960's, we have argued, the field of legislative voting research began its emergence into a new era - one characterized by greater attention to theoretical concerns. While the emphasis on explanation and prediction has helped us sort out what we need and what to know about legislative voting, it has not resulted in a bountiful harvest of empirical generalizations. At least not yet.

With a knowledge of past accomplishments and failures, the reader can now more fully appreciate the critical appraisals that we will undertake in this dissertation. By examining the theories of Kingdon and Fiorina from a statistical and theoretical perspective, we hope to ascertain the current status of roll call voting research and to speculate about the kinds of challenges that legislative scholars are likely to face in the future.

FOOTNOTES

[1]This quotation was given to me by a friend in July 1979. It was originally taken from an article written by columnist Hugh McDiarmid in the Detroit Free Press. Attempts to identify the exact date of publication have been unsuccessful. However, we are fairly certain that the article was written in late May, or early June, 1979.

[2]For example, see Julius Turner and Edward Schneier, Party and Constituency: Pressures on Congress (Baltimore: Johns Hopkins Press, rev. ed., 1970). Aage Clausen, How Congressman Decide: A Policy Focus (New York: St. Martin's Press, 1973). John W. Kingdon, Congressman's Voting Decisions (New York: Harper and Row, Publishers, 1973). John Edgar Jackson, A Statistical Model of United States Senators' Voting Behavior (Cambridge, Massachusetts: Harvard University, 1968). Cleo H. Cherryholmes and Michael J. Shapiro, Representatives and Roll Calls (Indianapolis: The Bobbs-Merrill Company, Inc., 1969). Warren Miller and Donald Stokes, "Constituency Influence in Congress," in R. Peabody and N. Polsby (eds.), New Perspectives on the House of Representatives (Chicago: Rand McNally, 2nd ed., 1969).

[3]The studies cited in the previous footnote consistently refer to factors like a legislator's colleagues, the chief executive, the party leadership, interest groups, the media, and personal policy preferences. These studies also provide information on when and why these voting determinants may vary in importance in different circumstances (i.e., within different policy areas).

[4]John W. Kingdon, Congressmen's Voting Decisions (New York: Harper and Row, Publishers, 1973).

[5]Morris P. Fiorina, Representatives, Roll Calls, and Constituencies (Lexington, Massachusetts: Lexington Books, D. C. Heath and Company, 1974).

[6]Recent works by Matthews and Stimson, Jackson, and Clausen could also be similarly characterized. Yet the practical problems of operationalizing these theories for testing in the Michigan Senate, forced us to drop them from serious consideration.

[7]Fiorina, Representatives, Roll Calls and Constituencies, p. 2.

[8]A colloquial expresion of unknown origin.

[9]A. Lawrence Lowell, "The Influence of Party Upon Legislation in England and America," in Annual Report of the American Historical Association for 1901 (2 vols.; Washington, 1902).

[10]Julius Turner, Party and Constituency: Pressures on Congress (Baltimore: Johns Hopkins Press, 1951).

[11]W. Wayne Shanon, Party, Constituency, and Congressional Voting (Baton Rouge: Louisiana State University Press, 1968), p. 13.

[12]Julius Turner, Party and Constituency, p. 23.

[13]Fiorina, Representatives, Roll Calls and Constituencies, p. 4.

[14]Duncan MacRae, "The Relations between Roll-Call Votes and Constituencies in the Massachusetts House of Representatives," American Political Science Review, 46 (1952), 1046-1055.

[15]Fiorina, Representatives, Roll Calls, and Constituencies, p. 4.

[16]Thomas Dye, "A Comparison of Constituency Influences in the Upper and Lower Chambers of a State Legislature," Western Political Quarterly, 14 (1961), 473-481.

[17]Samuel Patterson, "The Role of the Deviant in the State Legislature System: The Wisconsin Assembly," Western Political Quarterly, 14 (1961), 461-473.

[18]Thomas Flinn, "Party Responsibility in the States: Some Causal Factors," American Political Science Review, 58 (1964), 60-71.

[19]Pertti Pesonen, "Close and Safe State Elections in Massachusetts," Midwest Journal of Political Science, 7 (1963), 54-70.

[20]Malcolm Parsons, "Quasi-Partisan Conflict in a One-Party Legislative System: The Florida Senate, 1947-1961," American Political Science Review (1962), 605-614.

[21]Lewis Froman, Congressman and their Constituencies (Chicago: Rand McNally, 1963).

[22]W. Wayne Shanon, Party, Constituency and Congressional Voting (Baton Rouge: Louisiana State University press, 1968).

[23]Dye, "A Comparison of Constituency Influences."

[24]Patterson, "The Role of the Deviant in the State Legislative System."

[25]Flinn, "Party Responsibility in the States."

[26]Pesonen, "Close and Safe State Elections in Massachusetts."

[27]Froman, Congressmen and their Constituencies.

[28]Shanon, Party, Constituency and Congressional Voting.

[29]This argument was introduced by Duncan MacRae.

[30]Fiorina, Representatives, Roll Calls, and Constituencies, p. 11.

[31]Duncan MacRae, Dimensions of Congressional Voting (Berkeley: The University of California Press, 1958).

[32]Fiorina, Representatives, Roll Calls, and Constituencies, p. 12.

[33]Shanon, Party, Constituency and Congressional Voting.

[34]Jack Van Der Slik, "Roll Call Voting in the House of Representatives of the 88th Congress: Constituency Characteristics and Party Affiliation," (Carbondale, Illinois: Public Affairs Research Bureau, Southern Illinois University, 1969).

[35]John E. Jackson, Constituencies and Leaders in Congress: Their Effects on Senate Voting Behavior (Cambridge, Massachusetts: Harvard University Press, 1974), p. 14.

[36]See Chapter 7 of Jackson's book, pp. 127-143.

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

[38]Ibid., p. 53.

[39]Fiorina, Representatives, Roll Calls, and Constituencies, p. 14.

[40]John Kessel, "The Washington Congressional Delegation," Midwest Journal of Political Science, 8 (1964), 1-21.

[41]These scores were based on the actual voting records of the congressmen in the six issue areas.

[42]Kessel reported a Kendall's Tau-C of .69.

[43]Wilder Crane, "Do Representatives Represent?" Journal of Politics, 22 (1960), 295-299.

[44]Warren Miller and Donald Stokes, "Constituency Influence in Congress," in R. Peabody and N. Polsby (eds.), New Perspectives on the House of Representatives (Chicago: Rand McNally, Second ed., 1969), pp. 33-53.

[45]Miller and Stokes interviewed almost 2,000 constituents in their study. Yet this averages out to little more than 17 respondents per congressional district. This small sample size has made many researchers skeptical about the reliability of the study's inferences.

[46]Miller and Stokes, "Constituency Influence in Congress," pp. 40-41.

[47]Ibid., pp. 44-46.

[48]The exception, of course, is the Miller and Stokes study.

[49]Cleo H. Cherryholmes and Michael J. Shapiro, Representatives and Roll Calls: A Computer Simulation of Voting in the Eighty-eighth Congress (Indianapolis: The Bobbs-Merrill Company, 1969).

[50]Donald R. Matthews and James A. Stimson, Yeas and Nays: Normal Decision-Making in the U.S. House of Representatives (New York: John Wiley and Sons, 1975).

[51]James A. Stimson, "Five propositions About Congressional Decision-Making: An Examination of Behavioral Inferences From Computer Simulation," paper prepared for delivery at the Seminar on Mathematical Models of Congress, 1974, p. 3.

[52]Matthews and Stimson, Yeas and Nays, p. 122.

[53]Aage R. Clausen, How Congressmen Decide: A Policy Focus (New York: St. Martin's Press, 1973), p. 12.

CHAPTER TWO

FIORINA AND KINGDON: A CRITICAL REVIEW

INTRODUCTION

Between 1950 and 1979 numerous studies were conducted on the voting behavior of both federal and state legislators. The review of the literature suggested that the outcome of all this effort has been the accumulation of a body of knowledge which is characterized by highly tentative, often contradictory, empirical findings. This is not to say that we have learned nothing about the ways in which legislators make up their minds, for surely our understanding is significantly greater than it was a quarter century ago. The works of Turner, MacRae, Miller, Jackson and many others have provided us with bits and pieces of insightful information.

Whether or not these pieces can be fit together in a completed puzzle is a question which sits in the back of the minds of all students of legislative behavior. No one is really certain whether this state of affairs is attributable to seemingly intractable methodological problems or simply to unenlightened theorizing. Whatever the explanation, political scientists will continue to develop and refine theories which hopefully will knit many of the disparate empirical findings into a more cohesive framework.

The remainder of this dissertation is devoted to an assessment of some of the most recent thinking on legislative voting behavior. Although there are four or five works which clearly merit close examination[1], only two will be fully explored in this study. The decision to exclude the others reflects a desire to keep the task manageable rather than a judgment about their likely contribution to the field. The two that were selected, however, were chosen because they were new, evocative, and amenable to field testing.

The first theory was constructed by Morris P. Fiorina and expounded upon in Representatives, Roll Calls, and Constituencies.[2] It is a model which stresses the importance of the reelection goal and the preeminant role of a legislator's constituency in the quest for the attainment of that goal. Both of these elements, reelection and constituency, are related within the context of a decision problem under conditions of uncertainty.[3] The result is a set of unusually specific predictions about how a legislator will vote when various combinations of electoral and constituency conditions are operative.

The second theory was developed by John Kingdon in Congressmen's Voting Decisions.[4] It stresses the efforts undertaken by legislators in order to achieve a predominant voting consensus among those actors who are defined as important - either politically or in some other way. The model sets forth a number of decision rules which a

legislator will purportedly follow when attempting to ascertain the presence or absence of consensus in his or her "field of forces."[5] Once this determination has been made, other decision rules predict how the legislator will vote on the bill in question.

In the remainder of this chapter we will examine, in some detail, the relative strengths and weaknesses of the theories proposed by Fiorina and Kingdon. Before we embark on any serious analyses of these works, however, two important tasks must be completed. First, we must establish a reasonable set of criteria against which these models may be evaluated. To adjudge them as good or bad, useful or useless, will not be particularly meaningful unless we have some standard of comparison. Following this line of argument one could say, for example, "that running five miles" is a more precise and meaningful description of effort than "running a long distance." Second, it is important to describe the essential features of each theory for those readers who might be unfamiliar with one or both of the works. Since each theory will be extensively critiqued in this chapter, it is desirable that the reader have some familiarity with their content. Otherwise, judgments about the legitimacy of the criticisms may prove difficult to reach.

EVALUATIVE CRITERIA

There are no hard and fast rules for evaluating theories. While social scientists and philosophers of

science often emphasize simliar considerations when assessing theories, they frequently stress different factors in practice. Among those scholars who are interested in legislative behavior, for example, it is not uncommon to find some who employ statistical criteria as their evaluative yardstick and others who emphasize the logical structure of the theory. Without a clear consensus, political scientists have sometimes found that it pays to be intelligently eclectic, combining the better aspects of various schools of thought.

It is unlikely that the evaluative criteria to be proposed in this study will satisfy everyone. Achieving full agreement, however, is not really critical. Most readers will be disposed to "live with" the criteria as long as they don't trample on philosophical considerations or ignore statistical ones. They must, however, be a reasonable reflection of those criteria most frequently advocated by political scientists and philosophers of science.

Herbert F. Weisberg has proposed a general evaluative framework which combines several different approaches without doing irreparable harm to any single one. He believes that models of legislative voting behavior should be assessed in three ways.[6] First, they should be evaluated as theoretical formulations. Second, as operationalized models. And third, they should be rated in terms of their predictive accuracy. This

combination of philosophical, methodological, and statistical criteria provides us with a broad-based framework for analyzing the theories of Fiorina and Kingdon. But it is only a framework, and as such, it can only serve as a guide for our efforts. It remains for us to fill in the details so that this framework may be successfully employed as an analytical tool.

The first stage in Weisberg's evaluative scheme calls for an assessment of the models as theoretical formulations. This requires that we establish standards which reflect what a good theory ought to be like - a task far more difficult than it may initially appear. Within the discipline of political science, a theory is frequently regarded as a "set of logically interrelated propositions or statements that are empirically meaningful."[7] Although they share a common definition, political scientists often emphasize different criteria when formulating an opinion about a theory. There are enough similarities, however, to guide our theoretical review of Fiorina and Kingdon. The strategy adopted here will be to focus on the theory's assumptions, its logical strucure, the degree of parsimony which it achieves, and its verisimilitude to the process which it seeks to model. While we make no claim that these factors exhaust the list of attributes which a good theory ought to possess, we believe that they constitute a fair representation of the most important ones.

To say that a theory's assumptions or logical structure will serve as the basis for its evaluation does not provide us with particularly meaningful information. What about a theory's assumptions will we be looking at? Precisely what is meant by logical structure? When is a theory parsimonious? And finally, how do we determine whether or not a model is a reasonable representation of a process or phenomena? Answers to these questions are important since they will guide our review of Fiorina and Kingdon in the latter part of this chapter.

1) Assumptions: Every model of roll call voting is designed to be a simplified and comprehensible representation of the actual process. To achieve relative simplicity, researchers find it necessary to make assumptions about various states of the world. For example, some political scientists begin the development of their theory by assuming that legislators are purposive actors who actively seek certain kinds of benefits. Others characterize them as actors who passively respond to various kinds of role expectations. It will be our position that better theoretical formulations are those which explicitly state their underlying assumptions and discuss how they bear upon the propositions generated in the theory. As we examine the models of Fiorina and Kingdon, we will pay close attention to how assumptions are handled by each. Beyond this, we will assess the plausibility of

the assumptions. Stating one's axioms is always a good practice, but it can easily be reduced to an exercise in futility if those assumptions are totally outlandish. While poor theories may begin with reasonable assumptions, good theories rarely, if ever, start with untenable axioms.

2) Logical Structure: We will assume that better social science theories are those which demonstrate a correspondence between their axioms and theorems. That is, the hypotheses which the theory seeks to test must appear to be reasonable and logical extensions of the assumptions. While some might argue that good theories have their theorems deduced from their axioms, we are inclined to accept a less demanding test - the correspondence must be clearly evident but not necessarily deductive.

3) Parsimony: As frequently employed in the social sciences, parsimony refers to the achievement of "high statistical success with few predictors."[8] A theory which predicts 95 percent of the variance with two independent variables will be considered superior to one which predicts the same amount of variance with 25 variables - at least along this dimension. But parsimony need not be defined in a strictly statistical sense. One can ignore predictive success and simply look at the number of factors which the model must

employ to explain the phenomenon in question.

4) Verisimilitude: Even if its assumptions are stated explicitly, its theorems are deduced from its axioms, and its explanatory variables are limited in number, a theory may still do very little to enhance our understanding. Good theories often possess these attributes but, in addition, they are plausible representations of a process or phenomenon. Theories which flagrantly offend intuitive notions about how a process operates will be good candidates for the junk pile. Assessing the verisimilitude of a theory to the process which it seeks to model is a highly judgmental endeavor. Theories which break new ground, for example, may be precipitously adjudged as untenable. Even if this is a strong possibility, it still makes little sense to abandon "plausibility" as a criterion for evaluating a model.

At this juncture, it might be useful to briefly review where we are and where we will be going in the remainder of this chapter. Weisberg's conceptual scheme has been adopted as a framework for analyzing both models of legislative roll call behavior. The first step in that process is an evaluation of each model as a theoretical formulation. Since Weisberg elected not to provide any guidance for accomplishing that task, it was decided that the assumptions, logical structure, parsimony, and

verisimilitude of each model would serve as the basis for the evaluation.

The second stage in the framework consists of assessing how well each theory has been translated into an operationalized model. This is an easily defensible criterion since, as Weisberg argues, "agreement with the theory does not require acceptance of the operationalization."[9] Like most researchers, we will emphasize the validity, and when possible, the reliability of the indicators. Since Kingdon operationalized and tested his model, the task of critiquing his measures will present no real problem. But Fiorina elected to perform only several preliminary indirect tests of his theory. Therefore, we will focus our discussion on the probable difficulties one would face in developing measures of his theoretical constructs. The possibility that the data demands of his model might exceed "existing empirical measurement technology"[10] will be carefully explored in a subsequent chapter.

The third and final stage of Weisberg's framework calls for an evaluation of the model's predictive accuracy. Successful prediction cannot be employed as the only criterion for assessing the value of a theory. A good theory, for example, may produce woefully inaccurate predictions because of poor operationalization. On the other hand, a theory which is evaluated poorly on all other criteria may achieve a high level of predictive

success, but only because the phenomenon being studied is inherently predictable. This possibility, along with the statistical performance of Fiorina's and Kingdon's models, will be explored more deeply in chapter four.

FIORINA'S CONSTITUENCY BASED THEORY: THE ESSENTIAL FEATURES

Fiorina's theory of legislative voting behavior may be characterized as a decision model under conditions of uncertainty. Decision models typically assess the probable payoffs or losses associated with a decision when certain conditions exist. As Winkler and Hays have stated:

> Formally, a consequence of a decision, which may be expressed in terms of a payoff or a loss to the decision maker, is the result of the interaction of two factors: (1) the decision, or the action, selected by the decision maker; and (2) the event, or state of the world, that actually occurs.[11]

In Fiorina's model, the "state of the world" is defined in terms of the probable mobilization of a constituency group on an issue while the "action" is conceptualized as the decision to vote with the position of a group, or against it, on a particular roll call vote. Payoffs and losses are defined in terms of increments or decrements to a legislator's subjectively estimated probability of reelection. Before we elaborate on how Fiorina framed legislative voting as a decision problem, we will

examine the multiplicity of assumptions that had to be made prior to the formal construction of the theory.

The axiom which serves as the cornerstone of the theory portrays a legislator as a purposive actor in a political environment. The characterization simply suggests that representatives have preferences, that they can often order these, and finally, that they will engage in activities which will help them secure those outcomes to which they have attached the highest value. For example, a legislator may use his "vote" as a device to attain whatever goals he may have set for himself.

If the portrayal of the legislator as a goal directed actor seems like nothing more than common sense, it should be pointed out that this characterization has only recently been afforded widespread support in the discipline.[12] During the 1950's and early 1960's, explanations of legislative behavior were often couched in terms of role expectations[13] or group affiliation.[14] Representatives were frequently described as being "inexorably shoved to and from by forces in their political environments..."[15] Whether they voted yes or nay on an issue was a decision that was primarily viewed as a function of external forces rather than as an attempt to attain a valued goal. But this passive representation of the legislator is being increasingly eschewed by political scientists in favor of the assumption of goal directed behavior.

Fiorina acknowledges that legislators may harbor numerous goals. Among the most commonly cited are the desire for reelection to office, influence as an end in itself, prestige, and good public policy. But reelection, Fiorina argues, dominates all the others. Without holding office, many of the ancillary goals of legislators would not be readily attainable. Mayhew echoes this sentiment:

> Yet, saints aside, the electoral goal has an attractive universality to it. It has to be the proximate goal that must be achieved over and over if other ends are to be entertained... Reelection underlies everything else, as indeed it should if we are to expect that the relation between politicians and public will be one of accountability. What justifies a focus on the reelection goals is the juxtaposition of these two aspects of it-its putative empirical primacy and its importance as an accountability link.[16]

Fiorina believes that the quest for reelection is largely controlled by a legislator's perception that his behavior may have political consequences. The roll call vote, for instance, exemplifies the kind of behavior which may have electoral consequences. It is an indelible record of a representative's position on an issue, and as such, it may serve as the basis of support or opposition by those groups which care how he votes.

Fiorina assumes that legislators are continuously engaged in an assessment of their electoral situation. How they behave is ultimately a function of those assessments. Each legislator, according to Fiorina, evaluates his position in two ways. First, he subjectively

estimates what his chances for reelection would be if the election were held today. This estimate of the current probability of reelection is symbolically represented by the letter "p". Second, he establishes "an aspiration level for his probability of reelection."[17] This minimum acceptable probability is denoted by "p*."

These two factors, p and p*, are used by Fiorina to define two different kinds of legislators. The first type, called a maximizer, has a probability of reelection that is lower than he would like it to be. That is, p is less than p*. To rectify this situation, this type of legislator engages in activities which help raise the probability of reelection above the minimum acceptable level. Maximizers, in short, attempt to maximize p. They may pursue other goals simultaneously, but only if they coincide with the quest for reelection.

Whenever the probability of reelection for a representative equals or exceeds his minimum acceptable level, p*, he abandons maximization efforts and adopts strategies which result in no expected change in p over an undefined series of votes. This type of legislator is referred to a a maintainer. It should be pointed out that on any single vote a maintainer may allow the value of p to decline. But in the long run, he behaves so that there is no expected change in his probability of reelection.

Thus far we have portrayed representatives as purposive actors who have defined reelection to office as

their preeminent goal. Moreover, we have linked their electoral status to their behavior in the legislature through the assumption that roll call votes may have either beneficial or deleterious political consequences. That is, it has been postulated that legislators believe their votes make a difference. And according to Fiorina, this difference may be expressed as an increment, hereafter referred to as x, or a decrement, hereafter referred to as z, in the legislator's probability of reelection. Good voting decisions may raise p to (p + x)[18] while poor ones may lower it to (p - z).[19]

At this point we are ready to provide an overview of Fiorina's theory of roll call voting behavior. The first stage of the model requires the legislator to make an assessment of the political environment which exists for a particular vote. In decision theory, this is often referred to as the identification of the relevant states of nature. But what factors should be evaluated in defining the political context of a vote? Fiorina asserts that it is almost self-evident that the relevant states of nature must involve the configuration of interested voters.[20] It is a representative's constituency, we should remember, that ultimately decides whether the quest for reelection will be brought to fruition. Who cares, and what their position is on the issue, are considerations which will have a significant effect on how a representative casts his vote.

Fiorina assumes that a legislator perceives his constituency, not as a collection of independent citizens, but as a "collection of groups of voters"[21] who share similar sets of preferences. This definition of constituency is broad enough to include formal organizations, like the National Organization of Women, and informal opinion clusters, like supporters of tax limitation, under the same rubric. The important point is not the flexibility of the definition, but the fact that constituents are assumed to react to issues as members of groups. In determining the "state of nature" as a prerequisite to a roll call voting decision, a representative is actually assessing which groups within his constituency care about the issue.

The intensity of a group's position, or how much they care about an issue, is uniquely interpreted by Fiorina. In his view, the actual extent of a group's interest is irrelevant to a legislator's decisional calculus. What is significant is the legislator's perception of that interest. Caring is conceptualized "not as the actual state of concern of constituents at the time of the vote, but rather as their receptivity when the vote is brought to their attention during a future campaign."[22] The important consideration is the representative's belief that his position on a roll call vote may mobilize a group to oppose him in the next election. This belief is symbolized by the letter "C_{jk}" in Fiorina's model. It

represents the legislator's subjective probability estimate that his vote on issue "k" will draw constituency group "Gj" into the next campaign.

Thus far we have examined one portion of Fiorina's model - the determination of the states of nature. This assessment is made by a legislator by scanning the district for groups which may be interested in an issue. Let's say, for example, that he perceives the potential involvement of two groups with opposing viewpoints. Under conditions of uncertainty, there would be the following states of nature:

1) Both groups care about the issue

$$G_1\ G_2$$

2) Group one cares but group two does not

$$G_1 \sim G_2$$

3) Group one does not care but group two does

$$\sim G_1\ G_2$$

4) Neither group cares

$$\sim G_1 \sim G_2$$

After making a general appraisal of constituency interest, Fiorina has his model legislator subjectively estimate the probability that these groups will enter a future campaign because of the position he adopts on the roll call vote. Estimates are made for each state of nature that is relevant to the voting decision. In this instance:

1) Probability that both groups care about the issue

$$P(G_1\ G_2) = C_1\ C_2$$

2) Probability that group one cares and group two does not

$$P(G_1 \sim G_2) = C_1\ (1-C_2)$$

3) Probability that group one does not care but group two does

$$P(\sim G_1\ G_2) = (1-C_1)\ C_2$$

4) Probability that neither group cares

$$P(\sim G_1 \sim G_2) = (1-C_1)\ (1-C_2)$$

Once the states of nature have been identified and their probabilities assessed, the legislator must examine the set of available voting strategies. In this example, where the constituency groups advocate different positions on the issue, the choices available to the legislator are reduced to voting for or against one of the groups. According to Fiorina, a legislator must carefully weigh the consequences of each voting option. Those consequences are expressed in terms of increments (x) and decrements (z) to the probability of reelection. By assessing both the positive and negative sanctions which a group may levy, the legislator can estimate the strength of the group. Formally defined, the strength of a group is equal to the sum of its positive and negative sanctions: $S = (x + z)$ where $x \leq (1 - p)$ and $z \leq p$.[23] In formulating estimates of group strength, a legislator is making a judgment about the probable gains and losses that are

likely to be incurred by voting in a particular way.

Up to this point, we have described a number of preliminary evaluations which must be completed before a legislator can make a final decision about how to cast his vote on the floor. First, those groups which may be interested in the representative's position on the issue must be identified. Their positions must also be ascertained. Second, the legislator must subjectively estimate the probability that these groups will be brought into the election campaign because of his vote. Finally, the consequences of voting with or against these groups has to be estimated. The legislator's selection of a voting strategy is ultimately derived through a process which combines all of these elements. We will work through a simple example in order to demonstrate how Fiorina predicts optimal voting strategies for maximizers and maintainers under the same electoral and constituency conditions.

Let's assume that a legislator faces a situation where two constituency groups may be affected by a particular piece of legislation. Furthermore, let's assume that they advocate diametrically opposed positions on the issue and that they have unequal probabilities of caring. We will demonstrate the derivation of voting strategies for both the maximizer and maintainer when the stronger group has (a) a higher probability of caring and (b) a lower probability of becoming involved.

	$G_1\ G_2$	$G_1 \sim G_2$	$\sim G_1\ G_2$	$\sim G_1 \sim G_2$
Strategy	$c_1\ c_2$	$c_1(1-c_2)$	$(1-c_1)c_2$	$(1-c_1)(1-c_2)$
with G_1	$x_1 - z_2$	x_1	$-z_2$	0
against G_1	$-z_1 + x2$	$-z_1$	x_2	0

FIGURE II-1: Voting Decisions Given a Two-Group Conflictual Constituency

It should be remembered that a maximizing legislator is one who finds his current probability of reelection lower than he wishes to tolerate. Dissatisfied with this state of affairs, he continuously searches out voting strategies that will correct the situation. Optimal strategies, if they exist, will be those which produce the largest positive increments in "p" that are possible under the circumstances. Does such a strategy exist for the maximizer in our hypothetical problem? The answer is a qualified yes.

Fiorina demonstrates that maximizers should vote with the stronger of the two groups when its probability of caring is also higher. But when it can't, he may switch allegiance to the weaker group if the inequality $c_1/c_2 < S_2/S_1$ holds true. The qualification is that neither one of these strategies will necessarily result in a positive change in the probability of reelection. But

how were these conclusions reached? We trace the following steps:

1) Referring to Table 2-1, it can be readily seen that the expected payoffs for voting "with G," and "against G," are equal to:

$$E \text{ (with } G_1) = (c_1 x_1 - c_2 z_2)$$

$$E \text{ (against } G_1) = (-c_1 z_1 + c_2 x_2)$$

2) The difference between expected payoffs is defined as:

$$E \text{ (with } G_1) - E \text{ (against } G_1)$$

3) This difference actually reflects the difference in strength of the two groups.

$$E \text{ (with } G_1) - E \text{ (against } G_1) = (c_1 S_1 - c_2 S_2)$$ where strength is defined as $S = (x + z)$

4) If we assume that G_1 stronger than G_2, than a sufficient condition exists for the maximizers choice of voting "with G_1" provided that it has the higher probability of caring. That is, $c_1 > c_2$.

5) But even if $c_1 \leq c_2$, E (with G_1) may be greater than E (against G_1) if S_1 exceeds S_2 sufficiently that $c_1 S_1 > c_2 S_2$.

6) Given this possibility, a more precise definition for the existence of a maximizing strategy must be employed. The inequality $c_1/c_2 > S_2/S_1$ constitutes a necessary and sufficient condition

for E (with G_1) to be greater than E (against G_1). This means that even if the stronger group cares less, the maximizer "still chooses to vote with the stronger group if c_1 is closer in magnitude to c_2 than the strength of the weaker group is to the strength of the stronger group."[24]

7) Conversely, a maximizer will vote with the weaker group if the inequality $c_1/c_2 < S_2/S_1$ holds.

When two conflicting constituency groups have unequal probabilities of caring, it has been demonstrated that the existence of a maximizing strategy depends on "the magnitudes of those probabilities."[25] Admittedly, the proof of this fact was rather complex. If some confusion exists on the part of the reader, it is an understandable consequence of the theory's complexity. If only one point is clear, however, it should be that the maximizing representative must assess the number of relevant groups, their respective levels of strength, and how much they care before he can determine whether a winning[26] strategy is available to him. The maintaining representative evaluates these same elements, but in a somewhat different manner. It is on him that we now focus our attention.

The maintainer, you will remember, has succeeded in raising his probability of reelection above his aspiration

level, p*. He is characterized by his desire, not to maximize p, but to keep it unchanged over a series of votes. In formal notation, he wants E (Δ p) to equal zero. Therefore, a maintaining strategy may be defined as one which assigns weights (Q, 1-Q) to the options "vote with G_1" and "vote against G_1" so that the expected result is no change in the probability of reelection.

In dealing with the maintaining representative, we must make some modifications in our conception of an acceptable voting strategy. Most of us are disposed to view legislative voting as an either-or proposition. One either votes for something or against it, with split support considered to be an impossibility. As a consequence of Fiorina's definition of maintaining behavior, we are now faced with a legislator who may adopt probabilistic voting strategies. That is, he may vote for a group with a probability equal to "Q" and against it with a probability of "1-Q". On paper, a maintaining representative has available to him a wider range of voting strategies than does a maximizer.[27] He may select as a strategy any value for "Q" which falls between the normal probability bounds of zero and one. Clearly, this provides the maintainer with a variety of possible options.

Earlier we sketched a picture of the procedure used by Fiorina to ascertain the existence of a maximizing strategy in the case of a conflictual constituency with unequal probabilities of caring. We will now demonstrate

how Fiorina determined the existence of a maintaining strategy in the same situation. First, we will show that the maintaining strategy, Q, can be precisely defined in terms of c, x, and z. Then we will enumerate the conditions which must be met for $0 \leq Q \leq 1$. This second step is important, since a maintaining strategy can not exist unless it can be shown that Q will fall within the normal probability bounds of zero and one.

In deciding how to vote, the maintainer must combine and weight the elements in Table 2-1 so that there will be no expected change in the probability of reelection. Formally, $E(\Delta p) = 0$. The steps which follow demonstrate how the equation $E(\Delta p) = 0$ can be expressed in terms of c_1, x_1 and z. Additionally, they illustrate how a solution for Q is obtained.

1) The outcome of a true maintaining strategy must be no expected change in the probability of reelection, p.

$$E(\Delta p) = 0.$$

2) This outcome can be expressed as a weighted linear combination of the payoffs x_1, x2, $-z_1$, $-z_2$, and the probabilities of caring c_1, $(1 - c)$, c_2 and $(1 - c_2)$. The weighting factor is Q, the maintaining strategy (Refer to Table 2-1 for summary of payoffs and probabilities).

$$E(\Delta p) = 0 = Q\,c_1\,c_2\,(x_1 - z_2) + Q\,c_1\,(1-c_2)\,x_1 + Q\,c_2\,(1 - c_1)\,(-z_2) + (1 - Q)\,c_1\,c_2\,(-z + x_2) + (1 - Q)\,c_1\,(1 - c_2)\,(-z_1) + (1 - Q)\,(1 - c_1)\,c_2\,(x_2)$$

3) Expanding this expression and combining terms yields:

$$E(\Delta p) = 0 = Q\,c_1\,c_2\,x_1 - Q\,c_1\,c_2\,z_2 + Q\,c_1\,x_1 - Q\,c_1\,c_2\,x_1 - Q\,c_2\,z_2 + Q\,c_1\,c_2\,z_2 - c_1\,c_2\,z_1 + c_1\,c_2\,Q\,z_1 + c_1\,c_2\,x_2 - c_1\,c_2\,Q\,x_2 - c_1\,z_1 + c_1\,Q\,z_1 + c_1\,c_2\,z_1 - c_1\,c_2\,Q\,z_1 + c_2\,x_2 - c_2\,x_2 - c_2\,Q\,x_2 - c_1\,c_2\,x_2 + c_1\,c_2\,Q\,x_2$$

4) Solving for the maintaining strategy, Q, we find:

$$Q = \frac{c_1\,z_1 - c_2\,x_2}{c_1\,x_1 - c_2\,z_2 + c_1\,z_1 - c_2\,x_2}$$

The fact that we have been able to obtain a solution for Q in terms of c, x, and z, does not mean that a maintaining strategy exists in our hypothetical voting problem. As stated previously, the existence of this type of strategy is contingent upon certain conditions which guarantee that Q will fall between zero and one. Fiorina has identified two conditions which, if satisfied, provide this guarantee:[28]

a) FIRST SUFFICIENT CONDITION

$$c_1/c_2 \geq z_2/x_1$$

b) SECOND SUFFICIENT CONDITION

$$c_1/c_2 \leq x_2/z_1$$

The first condition is called a type I maintaining strategy while the second is labelled as a type II. Both conditions can be used to establish bounds on the ratio c_1/c_2. They indicate that no maintaining strategy exists if the ratio c_1/c_2 falls between x_2/z_1 and z_2/x_1. That is, a maintainer cannot maintain if $x_2/z_1 < c_1/c_2 < z_2/x_1$ is shown to hold.

When faced with a conflictual constituency where the probabilities of caring are different, a maintaining representative may find that maintaining strategies are unavailable. Furthermore, Fiorina can demonstrate that if a type I strategy does exist, a maintainer must vote with the stronger group with probability at least .5. He must vote with the weaker group with probability of at least .5 if a type II situation occurs.

This concludes our overview of Fiorina's theory. While the amount of description may appear to have been excessive, it was actually quite limited. The overview reflects accurately neither the breadth nor complexity of the full theory. If anything, it does it some injustice because of deletions, simplifications, and gross generalizations. All this is inconsequential, however, because the purpose of this section was simply to provide the

reader with enough information to meaningfully evaluate the critique of the theory which follows.

FIORINA'S ELECTORAL - CONSTITUENCY MODEL: A CRITIQUE

At the beginning of this chapter, we established four criteria to guide our critical examination of Fiorina's model. By focusing on the assumptions, logical structure, plausibility, and verisimilitude, we should be able to reach some conclusions about the theory's primary assets and liabilities. The task of evaluating the theory is a difficult one, involving far more than the rote application of standardized criteria. No matter what evaluative yardstick is employed, the endeavor remains highly judgmental, susceptible to the personal prejudices of the critic. Therefore, it is expected that where we sometimes find fault, others will find none.

The ultimate justification for any assumption is the explanatory power of the theory which is derived from it. Since we have not yet presented any information which would allow this kind of judgment to be made, we must assess Fiorina's assumptions from a different tack. Two questions immediately come to mind. First, were the assumptions explicitly stated? And second, do they appear reasonable given what we already know about legislative behavior? The answer to the first is a resounding "yes". Fiorina began each chapter with a detailed explication of the postulates that would be employed in the development of the theory. Whether or not these were reasonable, is

what we will now decide.

The most fundamental assumption in Fiorina's theory is that the behavior of a legislator is purposive, geared toward the attainment of valued consequences. This postulate has a long history in theoretical economics,[29] and during the last decade or so, has received increasing support among political scientists.[30] It can be contrasted with its major competitor, the "collectivist method of sociology which develops hypotheses about social behavior from models of role behavior by aggregative ideal types."[31] Within the field of legislative behavior, the works of Eulau and Davidson reflect this orientation.[32]

The axiom of goal-directed behavior appeals to us because it rejects the characterization of human beings as mindless, directionless pawns who are shoved to and from by forces outside their control. It imbues individuals with the ability to reason, and as a consequence, with the capacity to assume at least partial responsibility for their behavior. The assumption of purposiveness ascribes to individuals the ability to define preferences and to evaluate various strategies for obtaining those preferences. While it might be difficult to support empirically,[33] we find no compelling reason to reject it as a starting point for a theory of legislative voting behavior.

The second important assumption made by Fiorina is

that the goal of reelection to office overshadows all others that a legislator might pursue. The most compelling argument in favor of this axiom is that many of the secondary benefits of office, like prestige, influence, and good public policy, are not readily attainable without reelection. But Mayhew finds the emphasis on this goal attractive for a number of additional reasons:

> First, I think it fits political reality rather well. Second, it puts the spotlight directly on men rather than on parties and pressure groups, which in the past have often entered discussions of American politics as analytic phantoms. Third, I think politics is best studied as a struggle among ment to gain and maintain power and the consequences of that struggle. Fourth - and perhaps most important - the reelection quest establishes an accountability relationship with an electorate, and any serious thinking about democratic theory has to give a central place to the question of accountability.[34]

The final assumption that merits examination asserts that a legislator's constituency exercises primary control over the quest for reelection. In the final analysis, it is the district which gives and the district which takes

away.[35] But is the influence of the constituency to be found on every single roll call vote? Couldn't the legislator vote against his district now and make it up later? Perhaps, but according to Fiorina this would be a risky strategy since opportunities for repayment may not occur. Therefore, he argues, it is more reasonable to conceptualize each vote as the one which might end a legislative career. Legislators are aware that their stance on any given issue may roust constituents form somnolence to political opposition. This possibility, asserts Fiorina, is strong enough to cause each vote to be treated as the last and most important one.

In and of itself, we do not find the assumption of constituency primacy to be untenable. The belief that someone back home is watching may be sufficient to assure that constituency opinion is weighted heavily in the representative's decisional calculus. The sanction of the "lost" vote is to be taken seriously by any legislator who wishes to retain his seat. In spite of the reasonableness of this assumption, we must confess to a certain uneasiness with its usage. Employed within the framework of a statistical decision problem, the result is the deemphasis of other theoretically important factors - at least in Fiorina's model.

If we could assign grades, a passing one would certainly be given to Fiorina for his treatment of assumptions. The most significant ones are stated explicitly

and their ramifications discussed. Moreover, none can be labelled as patently unreasonable. The best social science theories probably treat their assumptions similarly But the most convincing justification for any set of postulates is the explanatory power of the theory derived from them. Vindication for the axioms of goal-directed behavior, reelection, and constituency primacy ultimately depend on how useful we assess Fiorina's model to be as an explanation of legislative voting behavior.

The relationship between the theory's behavioral predictions and its assumptions is relatively easy to discern. The axiom of goal-directed behavior is used to cast the roll call vote as a decision problem. The significance of the quest for reelection can be seen in the definition of strategic payoffs. The consequences of any voting option, it should be remembered, are expressed as increments or decrements in the legislator's probability of reelection. Finally, the states of nature are identified solely in terms of those constituency groups which care about an issue. The axiom of constituency primacy could not receive a stronger expression than this in the model. Consequently, we must conclude that Fiorina's theory performs rather well on the second evaluative criterion - logical structure. The behavioral predictions of the model can be easily traced back to the initial set of postulates.

Earlier in the chapter it was argued that a good

theory should be parsimonious in the sense of using a minimal number of predictor variables to explain a maximum percentage of the variance. While it would be inappropriate for us to discuss the statistical performance of the model at this juncture, we can at least say something about the number of explanatory variables. By anyone's standards, the number of variables used to predict a legislator's vote is quite small. There are really only four essential pieces of information: (1) a listing of those groups which might be interested in an issue (2) a probabilistic assessment of how much they care (3) a tally of the sanctions they can invoke and (4) an identification of the legislator as a maximizer or maintainer. Based solely on these factors, Fiorina can derive a prediction of an optimal voting strategy for the representative. But is the model parsimonious? Relatively speaking, we believe that it is. In terms of the number of predictor variables, it is superior to all of the simulations while it compares favorably to the theories of Jackson, Kingdon, and Clausen.[36]

Thus far, we have been favorably impressed with Fiorina's theory based on an examination of its assumptions, logical structure, and parsimony. One aspect of the theory which remains to be evaluated is its verisimilitude to the process of roll call voting. Is it, or is it not, a plausible representation of the process used by legislators to reach a decision on an optimal voting

strategy? We will present seven criticisms of the theory which diminish, but don't destroy, its plausibility. The discussion will briefly consider whether efforts to assure plausibility necessitate trade-offs in other areas, and, vice-a-versa.

One of the more troubling aspects of Fiorina's theory is the stress on short term forces. Each legislative vote is considered to be an independent event. The fact that a southern Democrat had voted against ten consecutive civil rights bills would not be a relevant piece of information in predicting his vote on a future bill. The only pertinent variables are (a) how much a group cares and (b) how strong they are at the time of the vote. There are those, however, who feel that the emphasis on short term factors distorts the real nature of legislative voting.

> Legislative voting is longitudinal, is dynamic, and is incremental. The individual votes are not independent events but are replications of decisions which the member has made earlier. Legislators continually confront the same questions, and this must be taken into account. The member need not follow his or her voting history, but that history clearly provides the element of continuity.[37]

We would not want to argue that Fiorina's model

completely excludes consideration of long term factors. The estimates which legislators make of group stength could conceivably be based, at least in part, on past experience. So too could the estimates of "caring." But the fact remains that the theory does not incorporate characteristically long term influences like party, ideology, and voting history. In our opinion, a good theory of legislative voting behavior should combine both types of influences. Fiorina's decision to stress the short term factors only serves to diminish the plausibility of his theory.

A second important problem concerns the nature of the optimal voting strategies which have been predicted for maintaining representatives. The theoretical results of Fiorina's model make it permissible for them to pursue mixed probabilistic voting strategies. This means, for example, that they could vote for group G_1 with probability Q, and against this same group with probability (1-Q). The theory merely establishes a bound on the behavior of the maintainer. It does not provide exact behavioral hypotheses.

> The maintaining strategy is not an exact prediction; it only sets a floor under a representative's voting; i.e., a representative must vote for a bill with probability at least Q. The assumption of maintaing behavior refers to the

> representative's desire at least to maintain a current position, not to a prediction that he votes so as to maintain p precisely unchanged.[38]

The use of probabilistic strategies is disturbing for two reasons. First, it makes empirical verification of the theoretical predictions exceedingly difficult. How, for example, does one determine if a predicted voting strategy has been pursued on a particular issue when maintaining strategies are defined across a series of votes? What kind of instrument is sensitive enough to effectively discriminate between different probabilistic strategies? We have no answer for either of these questions. Beyond these "testing" problems, we find the notion of mixed voting strategies disturbing for another reason. Simply stated, they are not substantively meaningful. When a legislator votes "with" a constituency group, that tells us something. But what does it mean when he votes with them with a probability of .65 and against them with the probability (1-Q), or, .35? At the present time, no mechanism exists for acribing meaning to this kind of behavior. And in all honesty, we doubt that any will ever be developed.

The interpretive problems posed by the use of probabilistic voting strategies illustrate one of the major pitfalls of social science theorizing. Quite often the researcher begins with a more or less plausible theoretical

construct. The maintaining representative who endeavors to keep his reelection chances on an even keel, for example, strikes us as a defensible idealization of the real thing. But in the process of moving from a verbal description of his behavior to a more precise mathematical statement, a fair amount of plausibility was sacrificed. It is unlikely that Fiorina originally intended to have his maintaining representative engage in mixed voting strategies. Nonetheless, the use of statistical decision theory resulted in that outcome. And as a consequence, his model became less believable.

A third major problem with Fiorina's theory is that it fails to recognize that "voting" is ony one of the ways in which a legislator may affect his probability of reelection. Mayhew has discussed two other activities, advertising and credit claiming, that are frequently used by legislators to bolster their electoral positions. Advertising is regarded as "any effort to disseminate one's name among constituents in such a fashion as to create a favorable image but in messages having little of no issue content."[39] Legislators will attempt to portray themselves as honest, independent, experienced, knowledgeable, and the like. Credit claiming refers to behavior intended to "generate a belief in a relevant political actor (or actors) that one is personally responsible for causing the government, or particularized benefits for one's constituents."[40] Settling problems with the

bureaucarcy, arranging for visitor's passes, providing internships for students, and obtaining government contracts for local industry are illustrative of those activities that can be used for claiming credit.

Fiorina's theory is predicated on the belief that "voting" is the primary mechanism for controlling a legislator's probability of reelection. But we have just discussed two other activities that can be used for the same purpose. This raises several critically important questions. To begin, is voting a more or less effective strategy than advertising or credit claiming for producing changes in a representative's reelection probability? But more importantly, are Fiorina's predictions as credible as originally thought given the existence of alternative strategies? The answer to the first question is unknown, but the fact that it has even been raised leads us to respond affirmatively to the second.

A fourth caveat which places another chink in the plausibility of Fiorina's model, deals with two of the more important theoretical constructs - the maximizing and the maintaining representative. This classificatory scheme is reasonable but not exhaustive. It may exclude an unknown percentage of legislators who possess none of the required characteristics. Schlesinger points out that some representatives may place little value on the retention of their seat.[41] But the preeminant goal of both maximizers and maintainers is reelection to office.

Legislators not harboring this goal fall outside the scope of Fiorina's theory. They are comprised primarily of those who desire to withdraw from public office and those who aspire to "attain an office more important"[42] than the one they currently hold. Schlesinger ascribes "discrete" ambitions to the former and "progressive" ambitions to the latter. The point to be emphasized, however, is that Fiorina's behavioral predictions are inapplicable to either of these kinds of representative.

The policy preferences of legislators, and the intensity with which they hold those preferences, are two elements which one might reasonably expect to find in a model of legislative voting behavior.[43] Our fifth criticism, therefore, concerns Fiorina's decision not to incorporate them as part of his model. His rationale is that in a contest between the reelection goal and any other one, reelection always wins. In a voting situation where following one's preferences will lead to a decline in the probability of reelection, Fiorina believes that personal preferences will be eschewed. Perhaps this is a reasonable assumption for maximizers, but it becomes a less compelling argument when applied to the maintaining representative. It should be remembered that this type of legislator has significantly greater latitude in his selection of voting strategies. On any given vote, he may elect to sustain a decline in the value of p. Given this possibility, we would argue, the incorporation of an

intensity variable might lead to a more precise delineation of those situations where a maintainer is likely to accept electoral risk. It could be hypothesized, for example, that the stronger a maintainers position on an issue, the more likely he is to accept a temporary decline in p in exchange for voting his conscience.

A sixth criticism of Fiorina's theory is that it employs an overly restrictive definition of the "states of nature." Only constituency groups are allowed to play a significant role in the decisional calculus of the legislator. As he evaluates the political context of a particular issue, the legislator focuses solely on those constituents, whether organized or unorganized, who might be interested in the position which he assumes. Other actors like the President, governor, the party leadership, fellow legislators, and the media have not been incorporated as relevant components in the "states of nature." Their exclusion, while a reflection of the underlying assumptions of the theory, poses further questions about the plausibility of the model.

Numerous theoretical and empirical studies conducted during the last quarter century suggest that influences on a legislator's vote may come from a variety of sources.[44] The preponderance of evidence, we believe, mitigates against single actor explanations. They are usually far too simplistic. Yet Fiorina has constructed a theory that ignores all possible sources of influence except one - the

constituency. While it is exceedingly dangerous to impute motivations, we believe that Fiorina's exclusive reliance on this actor derives, at least in part, from genuine confidence in the underlying assumptions of the model. But it might also reflect the difficulties inherent in studying legislative voting within the framework of statistical decision theory. Conceivably, we could be looking at a situation where the exigencies of a methodological technique place substantive restrictions on the theory. Perhaps the incorporation of other actors would prove unwieldy. We believe that this is a real possibility. In any event, however, their exclusion imperils the believability of the theory.

Our seventh, and final, criticism of Fiorina is that the scope of the model may be a bit too narrow. It is not designed to "predict every representative's vote on every issue."[45] Rather, it is intended as an explanation for nondegenerate decision problems only. The scope of the theory includes only those cases for which $c > o$ for at least one significant constituency group. When the legislator's constituents are perceived to be uninterested, the model is inapplicable.

To the best of our knowledge, no one has reliably estimated the proportion of legislative votes, at any governmental level, that involve constituency groups. Matthews and Stimson, though, have argued that they comprise but a small minority of all legislative votes.[46]

If they are correct, then Fiorina's theory might be more a partial theory than even he intended. It might prove illuminating for those instances where constituency interests are touched. But for many, if not most legislative votes, it would provide no satisfactory explanation.

Critical analyses are sometimes unfair due to an excessive concentration on the weaknesses of a piece of research. Our own review of Fiorina's model may be guilty of this to some degree. The last segment of the critique was designed to cast aspersions on the plausibility of the model. It may have led some readers to conclude that we view the theory as a completely untenable representation of the process by which legislators decide how to vote. This is an overstatement of our position.

In many respects, Fiorina's model represents a remarkable effort at theory construction. The basic assumptions are clearly delineated for the reader to evaluate. Rarely does one encounter such an explicit treatment of a model's underlying premises. Beyond this, however, we found the assumptions to be reasonable assertions both individually and collectively.

The model has several other attractive features. It is parsimonious in the sense of using a small number of variables to predict the voting behavior of the legislator. There is also an easily discernable linkage between the assumptions and the derived propositions of the theory.

All of these attributes, when considered jointly, attest to the "tightness" of Fiorina's model. It is an excellent example of how theory construction ought to proceed.

The model does have some problems, however, Fiorina's adoption of a decision-theoretic framework may have involved a trade-off between "tightness" and plausibility. This can't be proven, of course, but we regard it as a reasonable possibility. The model is not untenable; it is merely less plausible than we would like it to be. There is one more problem that should be mentioned. The operational requirements of the model are quite severe. Obtaining estimates for some of its parameters, like p, p*, x, and z, poses a great challenge for the researcher. Good theories can and do fall apart at the field testing stage. Chapter three will detail our efforts at meeting this challenge. But for the moment, we will turn our attention to a description and critique of the dissertation's second subject: Kingdon's consensus model of legislative voting.

KINGDON'S MODEL: THE ESSENTIAL FEATURES

The "consensus" model of legislative voting, developed by John Kingdon, finds its roots in the information-processing and communication approach to decision-making.[47] This approach assumes that the demands on an individual's time exceed the amount he has available. As a result, he must assess which decisional

problems require more than a rudimentary information search and which do not. According to Kingdon, a legislator will limit his searches to those decisions which pose a problem. Troublesome roll call votes are likely to occur when:[48]

1) The legislator perceives conflict among those actors that he considers important, either politically or in some other respect.
2) The legislator does not have an opinion on the issue, or if he does, it is not held with great intensity.
3) The legislator has no established voting history on the issue to guide his behavior.

When problem votes do arise, the representative must initiate a search procedure to gather information which may serve as the basis for his decision. The volume of information is less important than its content. To be useful to a legislator, information must meet at least three requirements. First, it must be in a form that can be easily assimilated by the representative. Second, it must be politically relevant. This entails an explication of the likely political consequences for any given voting strategy. Finally, information must be evaluative to be useful. It must provide the legislator with a recommended course of action.

The characterization of the legislator as a "harried" decision-maker who must minimize information

costs, serves as the basis for Kingdon's consensus model. As he states:

> ... the consensus mode should be seen as congressmen's response to the various decisional problems we have been discussing, including the overload of voting decisions facing them, constraints on their time and cognitive capacities, and assessment of the political consequences of their decisions.[49]

The model is designed to be applicable to both problem and non-problem votes. The legislator begins his consideration of an issue by asking whether it is controversial. If it isn't, the decision rule is clear cut. He votes with the predominant consensus, with the herd. When controversy is perceived, however, the legislator is presumed to move to the next stage of the model. Here he must ask if his field of forces contains any conflict. The field is comprised of those actors which the legislator deems significant either politically or in some other way. If no conflict is discerned, the decision rule is once again a simple one - vote with everyone else.

The appearance of conflict within the relevant field of forces necessitates an assessment of the number of actors that are out of line. The third stage of the model has the legislator asking if only one actor stands in disagreement with the rest. An affirmative response results in a vote against that actor, although it is

unclear why this is the case. A negative response sends the legislator to the fourth stage of the model where he asks whether two actors are out of line. Once again, an affirmative response finds the legislator voting against the pair of actors in disagreement with the remainder of the field of forces. The model yields no prediction for those situations where more than two actors are out of line. When they occur, the legislator must move into another, undefined, decision mode. (See Table 2-2 for a graphic display of the consensus model).

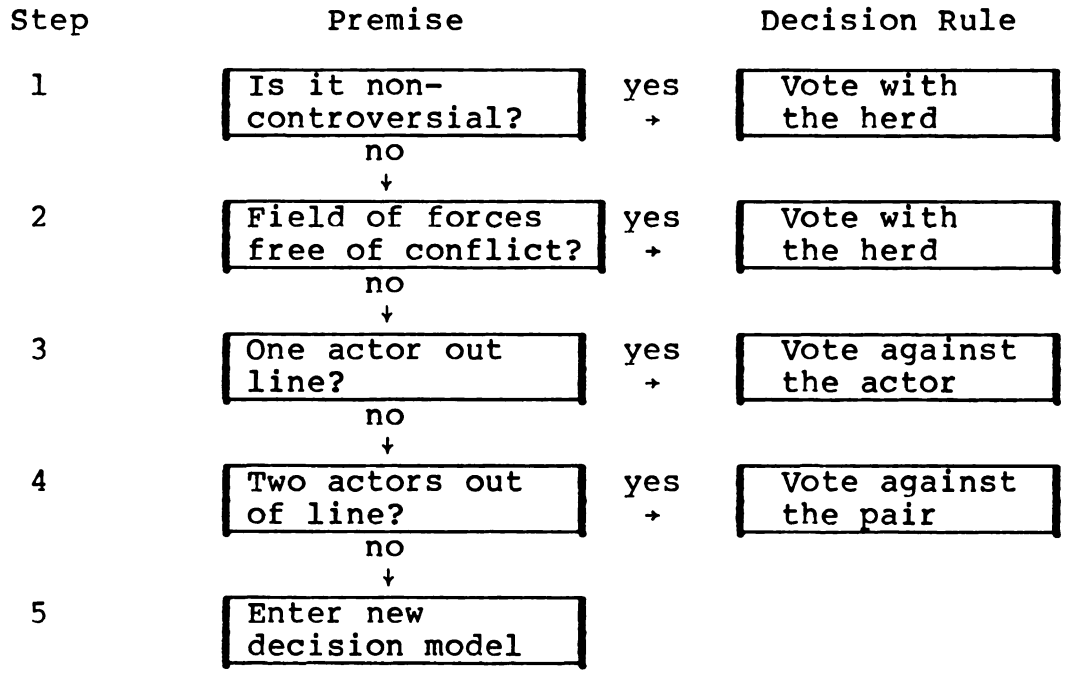

FIGURE IV-2: THE CONSENSUS MODEL

Kingdon emphasizes that his model should not be taken too literally. While some legislators may tally up the actors and vote with the plurality, most probably do

not. Rather, they seek out the predominant consensus in their environment by engaging in a series of sequentially structured information searches. Once a consensus position is identified, the legislator's vote is cast accordingly. Failure to identify a consensus, renders the model useless as an explanation for that particular vote. Kingdon believes, however, that the perceptual abilities of legislators are sufficiently well developed to make his model a plausible representation of the process by which voting decisions are reached. The veracity of that contention is one of the topics to be explored in the next section.

THE CONSENSUS MODEL: A CRITIQUE

Sometimes theories are constructed deductively. First the axioms are stated. Then the theorems are deduced from the initial set of postulates. Finally, the theorems are put to the test in the field. Fiorina's constituency-based model approximates this form of theory construction. But there are other ways of achieving the same end. Glaser and Strauss talk about the discovery of grounded theory.[50] What they are referring to is a process whereby theories are carved out from the results of empirical research. Kingdon's consensus model exemplifies this approach to theory construction.

While philosophers of science literally might blanch at Kingdon's procedures, we prefer to emphasize the

product instead of the process. Good theories, like good food, need not result from following a detailed recipe. Spectacular results can and have been achieved by bending or breaking the rules. But in our opinion, Kingdon's attempt to fashion a theory of legislative voting from a series of interviews falls short of the mark. His model has a number of striking deficiencies.

One of the most significant problems derives from Kingdon's failure to provide a complete explication of the assumptions underlying his model. He does postulate that legislators enter the consensus mode of decision-making because of limitations on their time. The assumption of purposive behavior is also implicit in the model. On several occasions, Kingdon mentions that legislators may attempt to shape the consensus in their environment for their own purposes. But he never specifies what those "purposes" might be. Perhaps they are interested in good public plicy. Alternatively, they may value only power and prestige. The goals which we might impute to a legislator remain limitless. Kingdon's failure to make or state assumptions about legislative voting, leaves our choices virtually unconstrained.

Evaluating the structural features of a theory becomes more difficult when the underlying premises are not well documented, and consequently, not well understood. We suspect that Kingdon's model is based on a number of assumptions about human behavior in general, and

legislative behavior in particular. But without his guidance, we have no way of determining which, among a number of competing axioms, serve as the foundation for his consensus model of decision-making. Thus, there is no way of knowing, for example, whether legislators use the consensus mode because they are assumed to be conflict-averse, or, because they are assumed to be seeking reelection to office. On our first evaluative criteria, the treatment of assumptions, we must record a failing grade.

At the beginning of the chapter, we adopted the position that a good theory ought to demonstrate a reasonable correspondence between its axioms and theorems. A deductive relationship was not required for the "logical structure" of the theory to be acceptable. But even with this weakened criterion, Kingdon's model is far below the standard. The lack of an identifiable set of assumptions makes it impossible to determine whether the model's decision rules were arrived at in a reasonable fashion.

Assessing the parsimony of the model also poses a problem. The major determinant of a legislator's vote is his field of forces. But the field is comprised of a number of elements, including fellow congressmen, party leadership, staff, constituency, administration, and interest groups. Other actors may be included in the field, depending on the legislator's perception of their importance. In fact, the model sets no upper limit to the number of actors that may be used to explain a

legislator's vote. Because of this, we are inclined to believe that the consensus model does not provide a parsimonious explanation of roll call voting behavior.

Our analysis of the structural characteristics of Kingdon's model, its assumptions, logical structure, and parsimony, leaves us with a less than favorable impression. The theory's poor ratings on the first three evaluative criteria might lead one to conjecture that its plausibility will be suspect. And this is indeed the case, for a variety of reasons.

To begin, the decision rules are weak. Kingdon provides no rationale for them other than the fact that the congressmen he interviewed behaved that way. The rules are empirically derived and appear to have no basis in theory. To say that a legislator will vote against a single actor who is out of line with the field of forces, does not constitute an explanation of why he is expected to do so. Voting with the predominant consensus may be a reasonable rule of thumb. But it is Kingdon's responsibility to tell us why - and that is something he did not do.

There are at least four other reasons why these decision rules vitiate the overall plausibility of the model. First, they ignore the fact that an actor may be able to penalize a legislator for voting against its position. Perhaps it isn't unreasonable to argue that the legislator should vote against a single actor which is out

of line. But what if this actor could lower the representative's probability of reelection, reduce his power, or tarnish his reputation? The decision rules, as they are currently formulated, do not address these possibilities.

A second reason why the decision rules diminish the plausibility of the model is derived from the first. If various actors possess differential abilities to impose negative sanctions on the legislator, then we would expect him to weigh them differently as he ponders how to cast his vote. But the model treats all actors equally, ignoring the possibility that some may be more important to the legislator than others.

A third problem is that the rules yield predictions which are invariant over a variety of rather dissimilar conditions. Should we expect behavior to be identical across various levels of political ambition, different electoral situations, and different policy dimensions? If other theories of legislative voting are correct, then we doubt it.

The final problem with Kingdon's decision rules is that they fail to take the intensity of the legislator's personal position into acocunt. While personal preferences may not always influence the direction of a legislator's vote, it is unlikely that they never do. We viewed this as a weakness of Fiorina's model, and our judgment is no different in this instance.

Our examination of the consensus model has led us to conclude that it has both structural and substantive deficiencies. We found no explicit statement of the assumptions underlying the model. Its theorems, or decision rules, appear to have been derived empirically. And as a consequence, ascertaining the degree of "logical structure" in the theory became an exercise in futility. Furthermore, the nonrestrictive defintion of the "field of forces" caused us to view the model as a relatively unparsimonious explanation of legislative voting. Our most serious reservations, though, are linked to the simplistic nature of the decision rules. They ignore the personal preferences of the legislator and fail to take into account the losses which might be sustained by voting against a particular actor. In short, the politics has been removed from a model designed to represent an essentially political process.

This completes our evaluation of Kingdon's model as a theoretical formulation. But Weisberg's framework, which we adopted to guide our analysis, requires an assessment of the operational properties of the model as well as its predictive accuracy. The former topic will be briefly discussed but an evaluation of the statistical performance of both models will be reserved for chapter four.

Defining "conflict" in the field of forces was the most difficult operational problem faced by Kingdon. He

chose to restrict the field of forces to seven actors: the legislator's own specific policy attitude toward the issue under consideration; the constituency; fellow congressmen to whom the legislator has said he paid attention; interest groups; the staff; the party leadership; and the administration. According to Kingdon, each of these actors can assume a liberal, neutral, or conservative stance on an issue. The field of forces is free of conflict only when (a) all the actors share identical positons and (b) when opinions are split between liberals and neutrals or between conservatives and neutrals. Whenever an issue arises where some actors are liberal and others conservative, we have a conflict situation.

There are some problems with this operationalization. The position of any actor is arrived at through a purportedly "objective" assessment of its real world stance. The position, in essence, is imputed by the researcher - not the legislator. This troubles us for two reasons. First, we believe that it is the legislator's perception of an actor's position that really counts. Where the researcher finds conflict, the legislator may find none because his perception of the situation is different. Second, there is no reason to believe that all roll call votes can be arrayed along a liberal - conservative continuum. Most votes, in fact, probably have only vague ideological ramifications. This leads us to suspect that Kingdon's classifactory scheme may be inapplicable

in many instances. And even if it is applicable, we doubt that it can be validly or reliably applied without a clearly delineated set of classification rules. Kingdon either did not disclose or did not have such a set of rules. Consequently, we must express dissatisfaction with his operational measures, just as we did with the structural and substantive and aspects of his theory.

CONCLUDING REMARKS

The purpose of this chapter has been to describe and critique the theories of legislative voting respectively proposed by Morris Fiorina and John Kingdon. The chapter sets the stage for our statistical evaluation of each model on a series of six roll call votes taken in the Michigan State Senate during the spring of 1976.

Our summary judgment, to this point, is that Fiorina's model is superior to Kingdon's both structurally and substantively. Its assumptions are stated explicitly. The relationship between its axioms and theorems is easily discernable. It is also parsimonious. More importantly, though, we believe it to be a more plausible representation of the act of legislative voting than Kingdon's consensus model.

FOOTNOTES

[1]We are specifically referring to Clausen's policy-dimension theory, Matthews and Stimson's cue-taking model, and Cherryholmes and Shapiro's predisposition-conversation theory.

[2]Morris P. Fiorina, Representatives, Roll Calls, and Constituencies, (Lexington, Mass.: Lexington Books, D.C., Heath and Company, 1974).

[3]Decision-making under uncertainty refers to a situation where there is uncertainty about the true value of a variable related to the decision, the actual state of the world, or the state of nature.

[4]John W. Kingdon, Congressmen's Voting Decisions, (New York: Harper and Row, 1973).

[5]The "field of forces" refers to the various actors in the legislative system that serve as reference groups for legislator on a given roll call vote.

[6]Herbert F. Weisberg, "The Inherent Predictability of Legislative Votes: The Perils of Successful Prediction", Social Science Working Paper, No. 122, (Pasadena, California: California Institute of Technology, 1976), pp. 18-20.

[7]Gideon Sjoberg and Roger Nett, A Methodology for Social Research, (New York: Harper and Row, 1968), p. 30.

[8]Weisberg, "The Inherent Predictability of Legislative Votes", p. 18.

[9]Ibid., p. 11.

[10]Fiorina, Representatives, Roll Calls, and Constituencies, p. 89.

[11]Robert L. Winkler and William L. Hays, Statistics, Probability, Inference, Decision, (New York: Holt, Rinehart and Winston, 1975), p. 551.

[12]It was during the 1960's, we would argue, that this characterization began to win acceptance.

[13]See, for example, Wahlke, et al., The Legislative System. (New York: John Wiley and Sons, 1962). Also, Davidson, The Role of the Congressman, (New York: Pegasus, 1969).

[14]Southern Democrats and Northern Republicans, for example, were thought to behave in predictable ways on civil rights issues.

[15]David R. Mayhew, Congress: The Electoral Connection, (New Haven, Conn.: Yale University Press, 1974), p. 18.

[16]Ibid., p. 17.

[17]Fiorina, Representatives, Roll Calls, and Constituencies, p. 36.

[18]The increment, x, must be less than (1-p). If not, the representative's subjective probability of reelection may be greater than one.

[19]The decrement, 2, must be less than p. If not, the representative's subjective probability may be negative--and negative probabilities do not exist.

[20]Fiorina, Representatives, Roll Calls, and Constituencies, p. 31.

[21]Ibid., p. 31.

[22]Fiorina, p. 31.

[23]Ibid., p. 34.

[24]Fiorina, p. 55.

[25]Ibid., p. 55.

[26]Winning is defined as the achievement of a positive increment in "p" as a result of voting in a particular way.

[27]There is real doubt in our mind that probabilistic voting strategies are substantively meaningful. We explore this argument later in the chapter.

[28]Fiorina, Representatives, Roll Calls and Constituencies.

[29]See, for example, Kenneth Arrow, Social Choice and Individual Values, 2nd ed., (New York: Wiley, 1963). Also, Karl Borch, The Economics of Uncertainty, (Princeton, N.J.: Princeton University Press, 1968).

[30]See, for example, William H. Riker and Peter C. Ordeshook, An Introduction to Positive Political Theory, (New Jersey: Prentice-Hall, Inc., 1973.

[31]William A. Niskanen, Bureaucaracy and Representative Government, (New York: Aldine-Atherton, 1971), p. 5.

[32]See, for example, Wahlke, et al., The Legislative System, (New York: John Wiley and Sons, 1962). Also, Davidson, The Role of the Congressman, (New York: Pegasus, 1969).

[33]See Riker and Ordeshook, Positive Political Theory, Chapter 2.

[34]Mayhew, Congress: The Electoral Connection, p. 6.

[35]This paraphrases a comment made by Fiorina.

[36]The number of predictors is usually limited to one or several constituency groups.

[37]Weisberg, "The Inherent Predictability of Legislative Votes", p. 23.

[38]Fiorina, Representatives, Roll Calls, and Constituencies, p. 37.

[39]Mayhew, Congress: The Electoral Connection, p. 49.

[40]Ibid., p. 53.

[41]See Joseph A. Schlesinger, Ambition and Politics: Political Careers in the United States, (Chicago: Rand McNally and Company, 1966).

[42]Ibid., p. 10.

[43]This argument is made by Fiorina in Chapter 2 of his book.

[44]See, Donald R. Matthews and James A. Stimson, Yeas and Nays: Normal Decision-making in the U.S. House of Representatives, (New York: John Wiley, 1975); W. Wayne Shanon, Party, Constituency, and Congressional Voting, (Baton Rouge: Louisiana State University Press, 1968); Aage R. Clausen, How Congressmen Decide: A Policy Focus, (New York: St. Martin's Press, 1973); John W. Kingdon, Congressmen's Voting Decisions, (New York: Harper and Row, 1973); Cleo H. Cherryholmes and Michael J. Shapiro, Representatives and Roll Calls: A Computer Simulation of Voting in the Eighth Congress, (Indianapolis: The Bobbs-Merrill Company, Inc., 1969).

[45]Fiorina, Representatives, Roll Calls, and Constituencies, p. 34.

[46]Matthews and Stimson, Yeas and Nays, p. 7.

[47]See James G. March and Herbert A. Simon, Organizations, (New York: Wiley, 1958); Karl W. Deutsch, The Nerves of Government, (New York: The Free Press of Glencol, 1963).

[48]Kingdon, Congressman's Voting Decisions, p. 217.

[49]Ibid., p. 230.

[50]Barney G. Glaser and Anselm L. Strauss, The Discovery of Grounded Theory: Strategies for Qualitative Research, (Chicago: Aldine-Atherton, 1971).

CHAPTER THREE

RESEARCH DESIGN

One of the most demanding phases of social research occurs when a verbal theory must be translated into an operational form to permit an empirical assessment of its propositions. This chapter will explore the difficulties encountered in devising procedures and measures for simultaneously collecting data for testing the theories of Fiorina and Kingdon. This discussion will range from practical problems that affect the validity of the operationalizations to the more typical topics of instrument design and measurement development. It is our position that a careful examination of the design decisions is important, for the predictive success or failure of these models is, to a significant degree, a function of the testing procedures that are employed.

Theories may prove to be less than useful for a variety of reasons. First, they may be ill conceived and poorly developed representations of the processes or phenomena they seek to model. That is, they may not possess the attributes of parsimony, plausibility, well-defined assumptions, and logical structure that were discussed in the previous chapter. Second, they may simply be unamenable to empirical testing. The data

demands they make may "exceed existing empirical measurement technology."[1] As an example, Fiorina cites models based on the assumption of expected utility maximization. While a robust theoretical construct, utility has defied attempts at measurement. Finally, theories may prove to be less than useful, not because they are untestable, but because they are tested improperly. By discussing the design problems of this study and how they were handled, we will be able to make a more meaningful interpretation of the statistical performance of the two models. We also hope to make distinguishing between theory failure and testing failure a bit easier in cases where accurate prediction proves elusive.

Selection of an Appropriate Arena for Testing the Theories

In order to test both theories, specific kinds of information are necessary. Fiorina, for example, requires legislators to provide estimates of their current probability of reelection, the minimum probability that they would find acceptable, and the level of strength of various constituency groups. Kingdon's model, on the other hand, requires that legislators provide a definition of their relevant field of forces and, in addition, an explication of those actors within the field who are in conflict. Quite clearly, direct tests of these models call for the collection of data from personal interviews with legislators. This fact immediately raises a number of methodological questions of both a practical and a

theoretical nature. Among them is the problem of selecting an appropriate arena for conducting the tests.

The selection of a site might initially appear to be a mundane and unimportant problem. But an argument can be developed that asserts that it has implications, not only for the quality of the data collected, but for the probability that the data collection stage will be completed. These are rather serious assertions, and it is for that reason that some time will be taken to present the rationale underlying them.

In American legislators, particularly the more professionalized ones, the average representative's time is at a premium. Committee meetings, floor proceedings, and constituency service consume most of their working hours. It is therefore imperative that demands on the legislator be minimized if personal interviews are to succeed. Those studies that make excessive demands are likely to run into trouble. For example, projects that require lengthy multiple interviews might be abruptly terminated in midstream because legislators grow weary of the time and effort they require. Even if access can be maintained for the duration of the study, the quality of the survey responses may diminish. Those studies relying on a single lengthy interview, or those relying on a series, may be unable to maintain the concentration of the legislator. As a result, the quality of the data diminishes, and the confidence with which the information can be used to test

the propositions of a theory is concurrently reduced.

To a significant degree, these problems can be minimized through the intelligent development of the survey instrument. But the selection of the research site also plays an important role. Certain legislatures are better arenas for research than others, as are certain chambers within those legislatures. Size may be one of the critical variables here. Larger institutions provide the researcher with an opportunity to distribute the workload over a greater number of legislators. In this way, the amount of cooperation required of each can be kept at a reasonable level. But small legislatures may force the administration of multiple interviews in order to collect a sufficient amount of information for analysis. This need might increase the risk that attrition would end the project or that the quality of the responses would be too unreliable for confidence to be placed in the statistical results.

Because of resource limitations, the Michigan Legislature was the only one seriously considered for this study. The real decision was whether to use both chambers, just the House of Representatives or just the Senate. Based primarily on the size criterion, it was decided that the House of Representatives was the more attractive alternative. Permission to conduct the study was denied, however, because many representatives had recently become antagonized by a rash of surveys conducted

for undergraduate courses at Michigan State University.[2]

Attempts were then made to gain acceptance from the Senate. After discussions with the leaders of both parties, the project was endorsed. Each party sent its members a letter explaining the purpose of the study and the amount of time it would require from them. Only five of the 38 members of the Senate declined to participate. As expected, the small size of the membership did lead to some attrition problems. Controlling the quality of responses also became more difficult as the study proceeded. Neither of these problems, however, was so severe that completion of the study was jeopardized.

Selection of the Votes

The unit of analysis in this project is the roll call vote. The object of the research, of course, is to test the efficacy of two competing models as explanations of legislative voting behavior. Both models require the collection of data, not on how legislators make up their minds in general, but on how they reach decisions on specific votes. Methodologically, this issue-by-issue approach is attractive. The basic premise of this design is that "the closer the interview is to the actual context within which the decision-maker is operating, the more valid the results will be."[3] The focus on specific votes helps minimize the propensity of legislators to make generalizations that may not accurately reflect their actual behavior. It forces them to recall specific

situations and to evaluate which actors, if any, helped shape their position on the issue at hand.

The data demands of the Fiorina and Kingdon models constrained this study to an issue-by-issue design. Information on specific roll call votes had to be collected from personal interviews with legislators. What was left undecided, however, were the type and number of votes that should be included in the analysis. Should a representative sample be sought - one that validity reflects the range of issues faced by the legislature during the current session? Or should only "key" issues be examined? In addition, how many votes must be included to constitute an adequate sample? Two? Six? Ten? Or fifty? Our response to these questions will provide further evidence about the integrity of the empirical assessment of the two models.

After careful consideration, it was decided that seeking a representative sample of votes would be not only a difficult task but an unrewarding one as well. Such samples are normally obtained by selecting cases from a completely enumerated population. In this instance, the population would have consisted of all votes taken during the 1976 session of the Michigan Senate. But in order to minimize distortions in the legislators' recall, it was necessary to conduct interviews within a short time after the actual vote was taken. Waiting for a complete listing of all roll call votes was impractical, because the

interviewing had to proceed on a week-by-week basis. On purely technical grounds, then, a representative sample was rejected.

This approach can be rejected for strong theoretical reasons as well. Many legislative votes are non-controversial and routine. In short, they are politically uninteresting. But Fiorina and Kingdon's theories rely heavily on the interaction of various political forces. Fiorina, for example, bases most of his predictions on the nature and extent of constituency involvement with an issue. A representative sample of votes might include some cases for which a constituency interest is present, but it would not likely contain a sufficient number of such cases to permit a convincing test of the theory's propositions. Therefore, it was decided that "key" votes should form the basis of the sample.

In order to select a group of such votes, the guidelines employed by Kingdon were adopted. A vote could be classified as "key" if it met one or more of the following criteria:[4]

First, it should receive some attention from the press, constituency, interest groups, or the administration.

Second, it should involve one or more of the actors upon which the two models are based.

Finally, it should generate some conflict. That is, people should spend some amount of their political resources

and energy on the issue.

Having satisfactorily defined the kind of votes we were interested in examining, it then became necessary to determine the number we would attempt to study. In a somewhat arbitrary manner, it was decided that interviews would be attempted with the 33 participating legislators on each of six roll call votes that would be selected. If sucessfully completed, this process would yield nearly 200 individual voting decisions against which the predictions of the two models could be evaluated. With 200 cases, the statistical and inferential problems associated with small samples could easily be avoided.

The selection of only six roll calls reflected a suspicion that access to the legislators would become more difficult with each successive request for an interview. It was assumed that few, if any, of the Senators would consent to the full series of six interviews. These suspicions proved justified, because only 115 interviews were actually completed - an average of just over three per Senator. The failure to obtain all 200 interviews resulted from a feeling among the legislators that their cooperation had been adequate and that they had more pressing matters on which to spend their time.

The six votes selected for the sample represent most of the key roll calls taken in the Michigan Senate between March and May of 1976. A capsule summary of each is provided below.

(1) SB 1258: This bill was selected because it pitted environmental interests against business interests. The most important section of the bill provided for the sale of oil and gas leases in the Pigeon River country state forest. Royalties accruing from the leases were to be used for the establishment of a state recreational land acquisition fund. It was defeated by a 5-vote margin, 15-18, on March 31, 1976.[5]

(2) SB 128: This bill was selected because it promoted conflict between labor unions and management. The unions supported it because it purported to provide additional jobs with increased safety for the worker. Management opposed the bill and claimed that its provisions would increase costs. The bill prohibited a person from entering or remaining in a manhole on a public right-of-way unless another person provided surveillance. The Senate passed the bill, 21-10, on March 11, 1976.

(3) HB 4804: This bill was selected because it created some controversy among physicians and various medical societies. Based on the assumption that the existing crisis in medical malpractice was due, at least in part, to the increasing frequency with which patients suffered injuries that could have been avoided, the bill had two important provisions. The first strengthened the licensing power of the state's Medical Practice Board; the second expanded the Board's membership by two - from 11 to 13. The bill was passed in the Senate, 23-7, on April

13, 1976.

(4) SB 1219: This bill was selected because it threatened the interests of veterans within the state. Faced with a substantial budget deficit for Fiscal Year 1976-77, the state decided that it must either reduce planned expenditures even further (beyond the reductions already made) or find additional revenue. One solution advocated was SB 1219, a bill that provided for the transfer of monies from the Michigan Veterans' Trust Fund to the state's general fund. It was passed in the Senate, 25-12, on April 28, 1976.

(5) SB 263: This bill was designed to permit an enforcement agency to seek temporary injunctive relief to halt violations of the state's housing code in "unoccupied" dwellings when uncorrected violations created an imminent danger to the health and safety of the community. It was opposed by a coalition of city attorneys who felt that it would further overload the dockets of the state's circuit courts. Support came from various tenants' organizations and the Michigan Departments of Social Services and Public Health. The Senate passed the bill, 26-10 on April 29, 1976.

(6) HB 4576: This bill was selected because it pitted the interests of automobile dealers against those of consumers. Commonly referred to as the "holder in due course" bill, HB 4576 would have made credit purchases of automobiles subject to the state's installment contract

law. It was defeated in the Senate, 17-18, on May 11, 1976.

Development of the Survey Instrument

In our discussion of the design problems facing this research project, we have thus far outlined the rationale underlying the selection of the sample of roll call votes and the designation of the Michigan Senate as the site for the study. In the process of doing so, we have tried to emphasize how certain options, available for the selection of the votes and the research site, could have compromised the validity of the empirical tests of Fiorina and Kingdon's theories. This same emphasis will be apparent in the discussion of the development of the survey instrument.

Earlier we argued that collecting a complete set of data would depend, to a great extent, on how much time and effort were required of participating legislators. It was believed that minimizing demands would significantly improve the probability that a majority of the interviews would be completed and that the information would be sufficiently reliable to permit analysis. From this premise, it was decided that a single instrument would be developed for collecting data on both models. Designed to be administered within a short period after the casting of a vote,[6] the interview schedule contained all nine questions from the Kingdon study and a number of additional ones for testing Fiorina's model. Revision of the instrument

after extensive pretesting in the House assured that length would not be a problem. The average interview took about 15 minutes.

Constructing questions that would elicit truthful responses from the legislators proved a more difficult task than limiting the length of the survey instrument. Many of the propositions from the two models called for the collection of politically sensitive information. To test Fiorina's theory, for example, we had to use items like these:

[QUESTION] Among those individuals or groups holding different positions on this issue, which do you consider to be the strongest? By this we mean: Which individual or group could affect you most politically if you voted against their position? (Specific reference, if possible.)

[PROBE] How much could _____ affect you politically, if they wanted to?

(a) Not at all.
(b) Very little.
(c) Some.
(d) A great deal.

The problem with questions of this nature is that they may prove threatening to the respondent. In this instance, a legislator might feel that it is both socially unacceptable and politically unwise to admit that a group can wield considerable influence over his behavior. Such an admission might jeopardize values or goals that are of great importance to him. Consequently, he might be disposed to provide a less-than-truthful response to the question. In survey research, this phenomenon is referred

to as response bias. It is an undesireable property, for it may call into question any inferences drawn from the data.[7]

During the pretesting of the instrument in the House of Representatives, a number of variations of the more sensitive questions was administered. Those versions designed to mask the political implications were frequently misinterpreted. When asked how this type of information might be obtained without posing a threat, most legislators responded that they lacked a satisfactory answer. They did suggest, however, that the phrasing of the questions be direct and unambiguous. Two reasons were commonly cited. First, this approach would minimize the probability that the questions would be interpreted differently than what was intended. And second, it would help alleviate any feelings among the legislators that they were being manipulated by the researcher. They might not like what was being asked, but at least they would understand the implications of an honest response.

Our attempts to eliminate probable response bias in the survey instrument must be viewed as largely unsuccessful. Reducing the sensitivity of the questions seemed to decrease their clarity for the respondent. Thus, we infer that a reduction in response bias would involve a trade-off with other forms of measurement error.[8] It was decided, therefore, to opt for a series of questions that were clear and unambiguous but that might produce some

negative bias in the responses. Estimates of the influence of various actors, then, should be viewed as underestimates. Unfortunately, the amount of bias remains unknown.

That the responses concerning the importance of various actors may be less than truthful implies that the data must be evaluated with caution. This attitude is further reinforced when another problem is brought to light. If phrased improperly, some questions might elicit responses that reflect an actor's reputation for influence in the decision-making process rather than his actual influence.[9] Asking a legislator, "How important is the constituency in your decisions?" is quite different from asking, "How much did you take the views of your constituents into account on vote X?" The former question taps generalized notions of influence, while the latter probably assesses the amount of influence the actor perceives in a particular situation. All the items in our survey instrument were designed to measure influence within the context of a specific vote. This method provides us with a better opportunity to determine the forces at work in the decision-making process, for it minimizes the propensity of the respondent to answer in generalized terms.

Operationalization of Fiorina's Theory

Thus far we have dealt with three important design problems: selection of the sample, designation of the research site, and construction of the survey instrument.

The discussion of the last topic remains incomplete, for we have yet to examine how the components of the two theories were operationalized.

In Fiorina's model, the concepts of group strength, S_j, and group concern, c_j, play a crucial role. On paper, the most convincing test of this theory would employ numerical estimates of these factors. Quantifying group strength and concern, however, poses some rather difficult theoretical and methodological problems. For example, it is unclear what kind of process a legislator might employ in determining the strength of a group. Size might be a factor, as well as money and the number of workers who could be mobilized for a campaign. Fiorina suggests that a representative might arrive at an estimate of strength by weighting and combining each of these factors.

Formally stated, GROUP STRENGTH, $S_j = x + z$

$$x = g^1(v,m,w)$$

$$z = g^2(v,m,w)$$[10]

where v = the number of voting members

m = available monetary resources

w = amount of time available from campaign workers

x = increment in the probability of reelection

z = decrement in the probability of reelection

Estimating group strength or concern using this type of formulation would be unwise for at least three reasons. First, there is no convincing body of theory that permits us to determine whether the formulation is correctly and

fully specified. Perhaps legislators use different, or additional, factors in arriving at their estimates. Second, no one has adequately explored how these elements might be weighted and combined to reach a final estimate. Finally, there is cause to believe that legislators are incapable of providing such information.

> . . . Recent research in human cognition suggests that it is useful to assume that people have limited information processing, hence quantifying, capacity. Similarly, in a different research tradition, mathematical economists and game theorists have actively sought to base social theory on ordinal rather than quantitative measures of preference. For example, it is plausible that, in response to a survey item, a voter can say that she preferred Reagan to Ford to Carter as president in 1976. Can she also provide a meaningful indication of how much she preferred Reagan to Ford relative to how much she preferred Ford to Carter? Viewed from the perspective of social choice theory or game theory, such a quantitative evaluation is equivalent to the voter's specifying the odds for a lottery between Reagan and Carter that would make her indifferent between the lottery and, on the other hand, a sure victory for Ford. While some psycho-physicists would be prepared to argue that such quantitative judgments can be made, placing such a demand on a respondent in practice is both difficult and costly.[11]

We believe that these arguments are sufficiently compelling to mitigate the attractiveness of obtaining numerical estimates of group strength and concern. Consequently, these factors were measured ordinally. The legislator's perception of a group's strength was tapped with the question and probe items that appeared on page 94. They asked the representative to evaluate how

much political damage a group could inflict on him, if they were so disposed. The concern of the group, or how much they cared about the legislator's position on the issue, was measured with the following question:

> In your opinion, how much did _____ care about this vote?
>
> (a) Very little
>
> (b) Some
>
> (c) A great deal.

Most of the theorems in Fiorina's model predict that maximizing and maintaining representatives will behave differently under similar electoral and constituency conditions. To test the veracity of these assertions, procedures for classifying legislators as either maximizers or maintainers were necessary. The assignment to one group or the other would depend on the relationship of a legislator's current probability of reelection, p, to his minimum acceptable probability of reelection, p*. If p exceeded p*, the legislator would be classified as a maintainer. When the current probability of reelection fell below the level that was perceived as acceptable, the legislator would be classified as a maximizer.

Fiorina intended p and p* to be subjective probabilities. Each was designed to reflect a legislator's perception of his electoral situation at the time of a particular vote. Estimates of these probabilities had to be supplied by the legislators. They could not be objectively determined by the researcher.

Two questions were developed to obtain estimates of p and p*. Each was pre-tested in the Michigan House, and then refined, before being administered in the Senate. In order to determine the statistical reliability of these items, each estimate was obtained twice--once at the end of the first interview and again at the end of the last. Consistency in the estimates provided by the legislators would increase our confidence that maximizers could indeed by empirically distinguished from maintainers. The questions are as follows:

For p: "Let's assume that the probability of your re-election to office could range from zero, or no chance, to 100, or reelection with absolute certainty. If the election for your seat were held today, what do you think the probability of your re-election would be? That is, how many chances out of 100 do you think you might have?"

For p*: "A number of political scientists have suggested that legislators will tolerate varying degrees of uncertainty with regard to their re-election to office. For example, some representatives may want nothing less than a perfect probability of reelection, while others may be willing to live with only a 50-50 chance.

"How about you? What is the lowest probability of reelection which is acceptable to you? That is, what are the minimum number of chances out of 100 that you would feel comfortable with?"

Although the measures of p and p* would be sufficient to permit the classification of each legislator as a maximizer or a maintainer, an additional item was employed to supplement this information. A hypothetical voting situation, based on Fiorina's one-group consensual

constituency model, was developed and administered to each legislator during the first interview. The question for this item was called a "hypothetical scenario" and is as follows:

Hypothetical Scenario

"I am going to describe a hypothetical voting situation to you. After hearing the details of the case, I would like you to tell me whether you would vote 'for' or 'against' the bill in question. Your response should be based solely on the information which is presented to you.

> A bill supporting 'issue X' is to be voted upon next week in the legislature. After studying it, you have come to the conclusion that it provides a reasonably good solution to a difficult problem. Your constituents, however, feel differently. For several months, now, they have inundated your office with letters urging the bill's defeat. Clearly, to vote for this particular piece of legislation would mean alienating many of your constituents and risking the possible loss of electoral support.

This is the dilemma facing you, then. Should you vote 'against' what you consider to be a good bill in order to avoid lowering your reelection chances? Or should you support it and accept the probable consequences? Given this predicament, what would you do? Would you vote 'for' or 'against' the bill? . . . Why?"

This hypothetical scenario presents the legislator with a voting situation in which constituency opinion is

homogeneous. Under this set of circumstances, Fiorina predicts that the maximizing representative will vote in accordance with the position of his constituents. That is, he will vote against the bill. How the maintainer will vote is unclear, however, because he may adopt probabilistic voting strategies. The responses to this scenario, then, are too imprecise to permit an independent classification, but they can be used as evidence confirming the identification of certain legislators as maximizers by combining the two probability estimates.

Inability to Replicate Kingdon's Analysis

One of the goals of this project was to replicate Kingdon's study at the state level to see whether the model's statistical performance would improve, decline, or remain the same. The replication would provide the first evidence of the generalizability of the "consensus" theory of decision-making to other legislative bodies. Unfortunately, one aspect of Kingdon's design could not be reproduced--the operationalization of "conflict" within the legislator's field of forces.

After identifying the actors within the field, Kingdon would label the position of each as "liberal," "neutral," or "conservative." These designations were derived, apparently, by using a subjective rule of thumb. Because the rule was never explained, either in the text or in the appendices of the study, we could not employ

this procedure in our study. Therefore, our operationalization of conflict cannot be considered identical to Kingdon's, for his depended on the distribution of liberal and conservative actors within the field of forces. Whenever the field was composed of either all liberals and neutrals or all conservatives and neutrals, a "no conflict" situation was considered to exist. Whenever a liberal and a conservative actor were found together in the same field, however, that field was defined as containing conflict.

Although we eschewed the use of ideological labels, the procedure we employed for operationalizing conflict was similar to Kingdon's. The positions of the actors in the field of forces were elicited from several different items in the questionnaire. The positions were coded as either "for" or "against" passage of the bill being considered; conflict was then defined as a situation in which a legislator's relevant field contained at least one actor favoring passage and another opposing it. The adoption of opposing positions, then, became the criterion for conflict. This same standard was used by Kingdon, although he framed the problem in terms of the opposition between liberal and conservative actors.

We view the differences in the operationalization of "conflict" as inconsequential, particularly since almost every other aspect of Kingdon's design was successfully replicated. Should the consensus model perform

differently in the Michigan Senate than it did in the U.S. House of Representatives, an explanation should not be sought in the marginally dissimilar procedures used to measure conflict.

Statistical Assessment of the Models

Fiorina and Kingdon's models constitute serious attempts to "explain" legislative voting behavior. In evaluating their statistical performance, we will compare them with several null models that seek, not to explain votes, but simply to predict them. The rationale for making such comparisons derives from the inherent predictability of legislative votes.

Weisberg, for example, has demonstrated that dichotomous legislative votes can be predicted with considerable success by a simple chance mechanism.[12] If every bill receives an equal number of "yea" and "nay" votes, then one can achieve a 50 percent success rate simply by predicting an affirmative vote in every instance. Even if the number of "yea" and "nay" votes is unequal, the floor of 50 percent predictive success remains the expectation.[13]

The fact that chance mechanisms may account for half of all legislative votes in repeated trials helps us define the performance we ought to expect from theoretically based models. Quite clearly, we would hope that such models could achieve successful prediction at a rate

exceeding that occurring by chance alone. A more meaningful standard might be defined, however, by using the performance of simplistic, one-variable null models as the basis of comparison.

For our purposes, a null model will be defined as any formulation that attempts to predict the outcome of legislative votes with a single independent variable that is inadequately grounded in theory. Null models emphasize prediction at the expense of explanation. One of the most commonly-cited examples is the party majority model. It predicts that, on any given roll call, a legislator will vote in accordance with the majority of his party. Empirically, it has been demonstrated that this model often achieves better prediction than chance. But it is rarely listed among the ranks of theoretical models because it aggregates a number of disparate influences. Weisberg's explanation illuminates this inadequacy:

> Why do so many votes cast with these majorities? What process leads to such voting? For example, what does party really mean here? It includes pressures from party leaders. It includes pressures from constituents from the member's party. It takes advantage of the tendency of members from the same party to have similar attitudes on most issues. It includes the pressure for members of the President's party to accede to his wishes in their votes. It is reinforced by the tendency of conversations and cues to be within party, and that can be very important in a low information setting. Party includes elements of ideology. The member's staff tend to push him or her in the party direction since the staff will tend to be of the same party as the member.[14]

Like the party majority model, the chamber majority

model represents the impact of a variety of factors. Both of these null models have been successful in predicting legislative votes, but neither provides a satisfactory explanation for that success. We will employ both as yardsticks for evaluating the performance of the Fiorina and Kingdon models. Confidence in the two theoretically-based models will be enhanced to the extent that they improve on the rate of successful prediction achieved by the null models. Performance at or below those levels, however, may force us to question the utility of the theories as explanations of legislative voting behavior.

Thus far, it has been argued that the statistical evaluation of the Fiorina and Kingdon models must include comparisons with appropriate null models primarily because of the inherent predictability of legislative votes. it remains for us to define precisely what the basis of those comparisons will be. The most obvious criterion is the total number of prediction errors. This standard represents a good beginning, but, as we will now demonstrate, it has some limitations.

Let us assume that a particular theory attempts to predict an individual's ideological orientation from his party affiliation. The statement $x \rightsquigarrow y$ is defined to mean: "If x then predict y," or "x tends to be a sufficient condition for y."[15] Using this notation, we can specify the following predictions for our hypothetical theory:

Democrat ~→ left

Independent ~→ center

Republican ~→ right

Tables III-1, III-2, and III-3 represent results that might be obtained from three different empirical tests of the theory. We will use them to demonstrate why the total number of prediction errors is an inadequate criterion for evaluating the theory. Note that the shaded cells in the tables identify error events, while the unshaded cells denote successes for the prediction.

Table III-1

Party Affiliation

Ideological Orientation	Dem	Ind	Rep	
Left	8	(1)	(1)	10
Center	(1)	8	(1)	10
Right	(1)	(1)	8	10
	10	10	10	30

Table III-2

Party Affiliation

Ideological Orientation	Dem	Ind	Rep	
Left	24	(0)	(0)	24
Center	(2)	0	(0)	2
Right	(4)	(0)	0	4
	30	0	0	30

Table III-3

Party Affiliation

Ideological Orientation	Dem	Ind	Rep	
Left	12	(4)	(0)	16
Center	(0)	0	(0)	0
Right	(0)	(2)	12	14
	12	6	12	30

A cursory examination of all three tables shows that six errors in prediction have been made in each one. Upon closer scrutiny, however, it becomes clear that the errors are not equivalent. The distribution of cases in Table III-2, for example, indicates that there is no variation in the independent variable. With party affiliation unrelated to ideological orientation in this instance, the theory cannot be considered as having been tested. Thus, the six observed errors have no real meaning. Table III-3 also contains six error events, but they are more serious than those in Table III-1, because every prediction for the "independents" proved to be incorrect. Every error that could have been made was made. Situations such as these suggest that error events can be meaningfully compared and interpreted only when measured against an appropriate benchmark.

Hildebrand, Laing, and Rosenthal have developed a procedure called prediction analysis, which compares "the

observed error rate when a prediction 'P' is applied to a given population with the error rate for a benchmark prediction that does not make use of the independent variable information."[16] The statistic that forms the core of the procedure, called "del," estimates the proportionate reduction in error that occurs when predictions are made for each case using knowledge of its independent variable state. A "del" value of .25, for example, would imply that a 25 percent reduction in error was achieved with the use of the independent variable.

The statistic, "del," is defined as:

$$V_p = 1 - \frac{\text{Observed errors}}{\text{Expected errors}}$$

$$= 1 - \frac{\sum_{i=1}^{R} \sum_{j=1}^{C} w_{ij} P_{ij}}{\sum_{i=1}^{R} \sum_{j=1}^{C} w_{ij} P_i P_j}$$

where P_{ij} = the probability of an observation's having both row state i and column state j. In a finite population, it is equal to the number of cases in the corresponding cell, ij, divided by the population size;

P_i = the marginal probability of row i. It is equal to the number of cases in row i divided by the population size;

P_j = the marginal probability of column j. It is equal to the number of cases in column j divided by the population size;

w_{ij} = the weight attached to an error in cell ij, which may range from zero to one. In this study, all error events will be considered to be of equal importance. Thus, w_{ij} will always equal one.

In order to demonstrate the utility of V_p for measuring prediction success, we will re-analyze Tables III-1 and III-3. Both contain six error events, but, earlier, we argued that those made in Table III-3 were more serious than those made in III-1. Assuming that we are correct, this fact should be reflected by "del."

Del (V_p) Values for Tables III-1, III-3[17]

V_p = .70 (Table III-1)

V_p = .66 (Table III-3)

The results show that a 70 percent reduction in error was achieved in Table III-1 in comparison to a 66 percent reduction in Table III-3. While the difference is not substantial, it is clearly in the hypothesized direction. That is, the greater seriousness of the errors in Table III-3 is reflected in the lower "del" value. The difference between the "del" values for the two tables becomes more pronounced, however, when the "difficulty" of the predictions is taken into account. Measured by $\Sigma P_i P_j$, the difficulty of a set of predictions refers to the expected error rate. The more errors that are expected, the greater the difficulty of the predictions. That is,

U_1 = Expected Error Rate for III-1 = .66

U_2 = Expected Error Rate for III-2 = .58

It is clear now that the errors made in Table III-3 are not equivalent to those made in Table III-1. While the number of mistakes was identical, those in Table III-3 must be considered more serious, because they were made under "less difficult" conditions (.58 < .66).

An over-all comparison of the two tables can be achieved by combining V_p, the measure of prediction success, with U, the measure of difficulty. This calculation will permit us to compare the two sets of predictions in terms of their reduction (not proportionate) in error. Thus,

$$\text{Expected Error Rate} - \text{Observed Error Rate} = U_pV_p$$

$$U_{3-1}V_{3-1} = .46. \quad > \quad U_{3-3}V_{3-3} = .38.$$

Given these results, we can state that the predictions of Table III-1 "dominate" the predictions of Table 3-3, because .46 is greater than .38. This same procedure will be used to compare Fiorina and Kingdon's models to each other, as well as to the null models.

Although the use of null models and prediction analysis will greatly enhance our ability to evaluate the statistical performance of the two theories, this method will not provide relief for the problem of probabilistic predictions. Fiorina's maintaining representative, it should be remembered, may simultaneously vote with a group, with a probability of p, and against it, with a probability of 1 - p. In most instances, the maintainer is expected to vote with the constituency at least half

the time over an undefined number of votes. This expectation implies that a valid test of many of Fiorina's propositions requires a longitudinal analysis of a legislator's voting record.

In this study, we were able to obtain an average of only three interviews per legislator. Consequently, following the voting behavior of each representative would not be particularly meaningful. As an alternative, we were forced to adopt an analysis strategy that aggregated votes, not legislators. But, by adopting this alternative, we cannot then readily interpret the tests of the maintaining predictions, for they represent the aggregate behavior of such representatives, not the behavior of individual maintainers over time.

The only solution to the problem was to posit the strong, and perhaps unjustifiable, assumption that individual and group behavior are similar. That is, we had to assume that a rate of 50 percent constituency voting would also be the expectation in the "vote aggregated" sample. It is painfully evident that an assumption of this nature is difficult to support. Not adopting it, however, would end the analysis before it began.

Concluding Remarks

Decisions about research design merit careful examination, for they play an important role in how statistical results are evaluated. Understanding the deficiencies of

a particular design may help us decide whether a theory's poor statistical performance derives from inadequate testing procedures or unenlightened theorizing. In this chapter, we have sought to enumerate the various methodological problems that were encountered in devising empirical tests for the models of Fiorina and Kingdon. In addition, we have tried to detail our response to these problems to permit a more meaningful interpretation of the data that appear in chapter four.

FOOTNOTES

[1]Morris P. Fiorina, Representatives, Roll Calls, and Constituencies (Lexington, Mass.: Lexington Books, D. C. Heath and Company, 1974), p. 89.

[2]This information was obtained from an aide to House Speaker Bobby Crim. The denial of the request to use the House of Representatives as the site for the project was transmitted through this same aide.

[3]John W. Kingdon, Congressmen's Voting Decisions (New York: Harper & Row, 1973), p. 13.

[4]Ibid., pp. 280-281.

[5]In order to pass, a bill must receive 20 votes, which, in the Senate, is the "majority elected to and serving" in that body. The margin of passage or defeat is calculated from this baseline. Constitution of the State of Michigan of 1963, Article IV, Section 26.

[6]Every interview pertaining to a particular bill was conducted within two weeks of its passage or defeat, so that the distortion in the legislators' ability to recall would be minimized.

[7]Inferences that are based on untruthful survey responses cannot be valid. This argument has been made by Charles H. Backstrom and Gerald D. Hursh, among others, who note:

> If it is impossible for a respondent to answer honestly or accurately, he might refuse that question and others, or he may be sufficiently antagonized so that remaining questions are just as well not asked. Although he may not refuse to answer (which in itself may be embarrassing), he may invent answers that belie his true feelings but which serve to get him off the interviewer's hook. To rely on the resulting data would be hazardous. In many cases, interpretation of open-end responses can claim to be no more than a presentation of what people say are their motivations.

Charles H. Backstrom and Gerald D. Hursh, Survey Research (Evanston, Illinois: Northwestern University Press, 1963), p. 74.

[8]The most common strategy for decreasing the sensitivity of a question is simply to write it differently. The risk involved in this approach is that the question may now have more than one meaning for the respondents. Hence, the validity of the responses to the item is diminished.

[9]Kingdon refers to this as the "reputational" problem. Kingdon, Congressmen's Voting Decisions, p. 12.

[10]Fiorina, Representatives, Roll Calls, and Constituencies, p. 84.

[11]David K. Hildebrand, James D. Laing, and Howard Rosenthal, Analysis of Ordinal Data. Sage University Paper Series on Quantitative Applications in the Social Sciences, Series No. 07-008, Eric M. Uslaner, editor (Beverly Hills and London: Sage Publications, 1977), p. 16 (references omitted).

[12]Herbert F. Weisberg, "The Inherent Predictability of Legislative Votes: The Perils of Successful Prediction," Social Science Working Paper No. 121 (Pasadena, California: California Institute of Technology, 1976), pp. 2-5.

[13]Ibid., p. 28, footnote 1.

[14]Ibid., p. 19.

[15]Hildebrand, et al., Analysis of Ordinal Data, p. 11.

[16]Ibid., p. 17.

[17]See Appendix B for the calculation of del (V_p).

CHAPTER FOUR

DATA ANALYSIS

General Analysis Strategy

Before jumping headlong into the analysis of the data, we will briefly discuss the general strategy to be employed in evaluating the statistical results. In most instances, the first step in the analysis sequence will be an examination of the performance of the chamber and party majority null models. If we were interested in determining the predictive success of Kingdon's "one actor out of line" proposition, for example, we would begin by looking at the performance of the null models for those cases where one actor stood in disagreement with the other actors in the legislator's field of forces.

The second stage in the analysis sequence will consist of an examination of the statistical success of propositions from the substantive theories. Using the prediction logic measure, del, we will assess the proportionate reduction in error that was achieved by using information from the two voting behavior theories. In and of themselves, the values of del have only limited meaning. To make them more meaningful, we will compare the values of del achieved with the substantive theories to those obtained with the two null models.

The third stage of the analysis sequence will be the introduction of control variables. Basically, there are two reasons for doing this. First, and most importantly, we will want to see if the performance of the theoretical models remains substantially invariant over different conditions. Finding that the performance of the models is contingent upon the values of a control variable, may lead to suggested modifications in the original hypotheses. A second reason for employing controls stems from the possibility that relationships uncovered in the zero-order tables may be spurious. Because we will be dealing with bivariate tables generated from rather highly developed theories, we doubt that third variables will "explain away" any zero-order relationships. However, we must be open to the possibility.

The final stage in the analysis sequence will focus on possible explanations for the empirical results. Let's assume, for example, that every prediction from Fiorina's theory proved incorrect. It would be insufficient to simply report this outcome without considering why it occurred. Was it the result of deficiencies in the theory or particularly troublesome measurement problems? A complete analysis requires us to attempt an explanation. Or let's assume that Fiorina's theory provided accurate predictions for democrats but not for republicans. Unless we develop an explanation for why the theory's predictive success varied according to a legislator's party, we will

be left with an interesting, but not necessarily meaningful empirical result.

Kingdon's Consensus Model Propositions

The first stage in Kingdon's model presents us with the proposition that a representative will vote "with the herd" if the legislation under consideration is controversial. Similarly, the second stage predicts that he will vote with the consensus in his field of forces, if the field is free from conflict. By operationally defining "noncontroversial" as that stage which obtains when the field of forces contains no disagreement, we have essentially merged the first two stages of the model.

To test the combined propositions, we first removed all noncontroversial and nonconflict cases from the total sample of votes. We then used these cases to examine the following two null hypotheses:

1) Within the subset of noncontroversial votes, it is predicted that legislators will vote in accordance with the chamber majority.
2) Within the subset of noncontroversial votes, it is predicted that legislators will vote in accordance with the majority position of their party.

The results for the first null proposition may be found in Table IV-1. The prediction logic measure, del, suggests that an error reduction of 24 percent was achieved

by using the "chamber majority" as the independent variable. When the difficulty of the prediction is taken into consideration (UVp), we obtain a summary value of .09. This figure will remain basically uninterpretable until we compare it to the summary value for the second null proposition.

The statistical results for the party majority null model are displayed in Table IV-2. The del value, in this instance, shows that a 47 percent reduction in expected error was achieved when the legislator's party was taken into consideration. This is a significant inprovement over the results obtained from testing the chamber majority hypothesis. In fact, the reduction in error was almost doubled. Looking at the summary figure UVp we can see that, in prediction logic language, the party model "dominates"[1] the chamber hypothesis. Formally stated, UVp (party) = .19 > UVp (chamber) = .09.

Thus far it has been demonstrated that, for non-controversial votes, the party majority null model yields more accurate predictions of a legislator's vote than does the chamber majority model. This should come as no surprise, for the importance of party affiliation has been frequently documented by legislative scholars.[2] As we argued in chapter two, however, the concept of party is so broad, including so many other factors, that its significance as an influence on legislative voting in unclear.

Unlike the remaining hypotheses that will be analyzed

TABLE IV - 1: Senator's Vote by Chamber Majority
Noncontroversy-Nonconflict Stage

Chamber Majority

Senator's Vote	Against	For	
Against	4	⑦	11
For	④	24	28
	8	31	39

Vp = .24 UVp = .09

TABLE IV - 2: Senator's Vote by Party Majority
Noncontroversy-Nonconflict Stage

Party Majority

Senator's Vote	Against	For	
Against	7	④	11
For	④	24	28
	11	28	39

Vp = .47 UVp = .19

in this chapter, the propositions representing the first two stages of Kingdon's model did not readily conform to the prediction logic format. These propositions simply predicted the consensus position for noncontroversial votes. But to use prediction logic procedures, there has to be an independent variable. Unfortunately, with the present construction of the propositions, no independent variables are offered. Therefore, the two null models should be thought of as alternative tests for the first two stages of Kingdon's scheme. Each takes the subset of non-controversial votes and predicts a yea or nay vote on the basis of the chamber or party majority. This is the only occasion when null models are used to represent the substantive theories.

One of the criticisms we made of Kingdon's theory was that it failed to explicitly take into account the impact of a legislator's personal feelings. For example, it could be hypothesized that all of Kingdon's predictions would become increasingly inaccurate as the intensity of a legislator's opinion increased. Tables IV-3 and IV-4 illustrate the effect of personal intensity on the predictive success of the chamber and party majority models.

The conditional del values for both tables do not support our hypothesis. The highest values, as expected, were found in the categories of lowest intensity. But the lowest values, which should have occurred in the highest intensity categories, were found in the middle ones.

While this pattern was found in the conditional table for both null models, we have no real theoretical explanation of it. Perhaps it is an artifact of the unequal number of cases in the various conditional tables or the unreliability of the data.

TABLE IV-3: Senator's Vote by Chamber Majority by Intensity of Legislator

Senator's Vote	Not at all Very Little		Some		A Great Deal	
	Against	For	Against	For	Against	For
Against	0	(1)	2	(4)	2	(2)
For	(0)	4	(2)	13	(2)	7
	vp = 1.0 uvp = .20		vp = .19 uvp = .07		vp = .26 uvp = .11	

TABLE IV-4: Senator's Vote by Party Majority by Intensity of Legislator

Senator's Vote	Not at all Very little		Some		A Great Deal	
	Against	For	Against	For	Against	For
Against	1	(0)	3	(3)	3	(1)
For	(1)	3	(2)	13	(1)	8
	vp = .55 uvp = .24		vp = .38 uvp = .15		vp = .64 uvp = .27	

The third stage of Kindgon's consensus model predicts that if only one actor is out of line in the field of forces, the legislator will vote against that actor. Using the subset of cases where one actor was in conflict, we crosstabulated the Senator's vote with the position of the actor.[3] Table IV-5 displays the results. Out of a total of fifty-seven cases, there were fifty-seven correct predictions.

It is unusual, of course, for any model to achieve this level of success. We can think of two possible explanations for the perfect performance of the third stage of the model. First, the prediction rule of voting against the single actor in disagreement constitutes a fairly easy test. As the size of the field of forces increases, so too does the probability that the actor in conflict will find himself standing alone. This argument hinges, of course, on the assumption that the sanctions wielded by the actor are not disproportionately large. Second, the perfect prediction achieved in the third stage may also be a partial function of the sample. The six roll call votes that were selected may not have been of sufficient importance to pose a problem for the legislators.

Had any cases fallen in the designated error cells of Table IV-5, we would have introduced control variables to determine if the pattern of correct predictions was maintained from the zero-order to the conditional tables. With no errors, however, controlling for the effect of a

third variable becomes an exercise in futility. The only thing that may vary is the number of correct predictions in any given cell. The value of del will remain constant at 1.0.

TABLE IV-5: One Actor Stage-Senator's Vote by Position of the Actor

Senator's Vote	Position of Actor: Against	Position of Actor: For	
Against	⓪	19	19
For	38	⓪	38
	38	19	57

Vp = 1.0 UVp = .56

The final stage in the consensus model offers a decision rule that is virtually identical to the one from the previous step. When two actors are out of line, Kingdon predicts that the legislator will vote against the pair. The nineteen cases in Table IV-6 have been used to test this proposition. Once again we find that no prediction errors have been made. In every instance, the legislators voted with the consensus position in their field of forces, and against the two actors who stood in disagreement with that position.

TABLE IV-6: Two Actor Stage-Senator's Vote by Position of the Actor

Position of Actor

Senator's Vote	Against	For	
Against	⓪	6	6
For	13	⓪	13
	13	6	

Vp = 1.0

* *

The six tables we have examined represent a complete set of tests of the propositions from Kingdon's theory. At this juncture, therefore, it is appropriate for us to delimit what we have and haven't learned about the statistical performance of the consensus model. When a bill is noncontroversial or when the field of forces contains no conflict, the model does not approach perfect predictive success. Of the two alternative versions that were tested, the chamber and party majority models, the latter achieved a higher success rate with a reduction in error of approximately forty-seven percent. Yet this cannot be considered terribly impressive given the inherent predictability of legislative votes.

The third and fourth stages of the consensus model performed remarkably well. In fact, each achieved perfect

prediction. As was argued earlier, however, we believe that errors would be found with a sample of votes of greater political significance to the legislators. We suspect that future tests of these stages will show them to yield less than perfect prediction, but prediction which nonetheless is superior to that obtainable by chance. Since many models of legislative voting have achieved slightly better than 80% successful prediction,[4] we doubt that additional tests will find the consensus model dramatically improving on that record.

As part of his analysis, Kingdon assessed the influence of various actors on the voting behavior of legislators. He employed two procedures for accomplishing this task. First, he used "the congressman's own words"[5] as the basis for indicating the importance of the actor in the voting decision. Second, he calculated the conditional probability that the congressman would vote with the actor, given the actor's position. The resulting probability was called an agreement score. Based on these scores, Kingdon concluded that:

> ....fellow congressmen retain their importance independent of the other actors; that constituency still has a significant importance independent of the others; but that administration and staff exhibit rather low relationships with the vote, once the effects of other actors are taken into account; and that party leadership and interest group influence is eliminated altogether.[6]

In this study, the relative influence of the various actors

was also evaluated. But the procedure used to make those determinations was somewhat different from that employed by Kingdon. At the end of each interview, the legislator was asked to provide a subjective quantitative assessment of the influence each actor had on his voting decision.

> Let's assume that we can rank the various factors which were important in determining your vote. A ranking of zero would indicate that you thought the factor had no influence on your vote while a ranking of ten would suggest that it was just about as important as it could possibly be. On a scale of 0 to 10, how would you score each of the following:
>
> a) Governor _____
> b) party leadership _____
> c) constituency groups _____
> d) interest groups outside your constituency _____
> e) fellow legislators _____
> f) staff _____
> g) personal position _____
> h) media _____
> i) other (specify: _____)

The results of this study provide a striking parallel to those obtained by Kingdon. Table IV-7 shows that in the Michigan Senate too, fellow legislators and the constituency comprise the most important influences on a representative's voting behavior. Similarly, the administration (governor) and party leadership appear to have relatively little impact. The only significant difference between the two studies is found in the perceived importance of the legislator's staff. In our analysis, the staff appears to have slightly more influence. Perhaps

the explanation for this difference resides in the fact that each Michigan Senator has but one or two assistants. The intimacy achievable with a small staff may account for the somewhat enlarged role these people play in the voting behavior of their employer.

TABLE IV-7: Actor by Actor Influence Statistics

		X	Median	Std. Dev.	Mean Ranking
a)	Governor	.868	.148	1.846	7
b)	party leadership	.896	.125	2.006	6
c)	constituency	2.717	2.000	2.868	3
d)	interest groups	1.570	.270	2.517	5
e)	fellow legislators	3.075	3.083	2.890	2
f)	staff	1.643	.346	2.318	4
g)	personal position	5.909	6.050	1.937	1
h)	media	.096	.009	.725	8

To briefly summarize the empirical results, we have found that the statistical performance of the consensus model in the Michigan Senate is only slightly different from its performance in the U.S. House of Representatives. The rate of success achieved at the national level ranged betwen 83 and 100 precent. In Michigan, though, the first stages of the model were somewhat less accurate. But in the more important phases, where conflict was evident, the results were quite comparable. Kingdon obtained close to

90 percent accuracy while we achieved perfect predictive success. Finally, there was almost perfect correspondence between the actor influence ranking in Kingdon's study and those rankings in our analysis.

Fiorina's Constituency Theory

In order to test the propositions of Fiorina's theory, procedures were developed to differentiate maximizing and maintaining representatives. On two occasions, the legislators were asked to supply subjective estimates of their current reelection probability (p) and their minimum acceptable probabiilty for reelection (p*). The relationship between these two estimates was used to label each legislator as one of the two legislative types. The maintaining label was assigned in those instances were "p" exceeded "p*" while the maximizing classification was assigned when the value of "p" fell below the desired level. For reasons that will soon become clear, the results of the hypothetical scenario were not employed as corroborative evidence for placing legislators in the maximizing category.

Table IV-8 displays the probability estimates that were obtained from the legislators. A cursory examination quickly reveals a rather high level of stability between the first and second estimates of p and p*. The values of coefficient of stability, in this instance the Pearsonian r, attest to the reliability of our procedure for

TABLE IV-8: Probability Estimates

Senator	P1	P2	Pmean	P1*	P2*	P*mean	Scenario Vote
1	100	100	100	95	85	90	Against
2	100	100	100	0	0	0	For
3	64	60	62	0	0	0	Against
4	100	100	100	75	65	70	For
5	100	100	100	10	10	10	For
6	95	85	90	80	70	75	For
7	90	90	90	55	47	51	For
8	100	100	100	60	40	50	For
9	90	90	90	53	47	50	For
10	50	60	55	49	51	50	For
11	54	50	52	0	0	0	For
12	100	100	100	12	8	10	For
13	70	70	70	55	55	55	For
14	75	85	80	55	45	50	For
15	90	90	90	55	65	60	For
16	85	95	90	65	75	70	For
17	75	85	80	35	25	30	For
18	70	80	75	56	44	50	For
19	100	100	100	40	40	40	For
20	70	80	75	0	0	0	For
21	75	75	75	0	0	0	For
22	100	100	100	40	30	35	For
23	55	65	60	32	28	30	For
24	55	--	55	55	45	50	For
25	99	--	99	75	75	75	For
26	70	80	75	0	0	0	For
27	90	100	95	65	75	70	Against
28	80	80	80	55	45	50	Against
29	90	80	85	36	30	33	For
30	90	90	90	30	40	35	For
31	60	70	65	45	35	40	For
32	99	99	99	--	0	0	---
33	75	85	80	65	--	65	For
		r = .92			r = .96		

% republicans above 90=9/12=75%
% democrats above 90=10/21=48%
Mean p score = 84.15
Mean rep. p score = 85.83
Mean dem. p score = 83.19

% republicans 50-6/12=50%
% democrats 50=11/21=52%
Mean p* score = 39.21
Mean rep. p* score = 35.83
Mean dem. p* score = 41.14

obtaining the two probability estimates. The value for the p estimates was .92 while the value for the p* estimates was slightly higher, .96. While this increases our confidence in the data, the possibility that the high stability values stem from the reactive effects of the measurement process cannot be ruled out.

The average current probability of reelection for all legislators was approximately .84. Republicans fell about a point above that level while democrats fell a point below it, on the average. A difference between the parties is evident, however, when we examine the subset of legislators who recorded p estimates equal to, or greater than, 90. Fully three fourths of the republicans felt that they had at least a 90% chance of being reelected compared to only 48% of the democrats. We have no satisfactory explanation for this rather substantial difference. Perhaps the most striking thing about the "current" probability estimates is that not a single legislator felt that he had less than an even chance of retaining his seat. This rather pervasive feeling of electoral security may partially explain why, on the average, Michigan's senators were willing to tolerate a reelection probability as low as .39 (p*). Republicans were inclined to accept slightly more electoral risk than the average, while democrats appeared to tolerate somewhat less. When the relationship between p and p* is examined for each legislator, it becomes clear that there is not a single

maximizer within the group.[7] This is distressing for two reasons. First, it prohibits us from testing the propositions dealing with maximizing representatives. Second, and far more importantly, it has rather serious implications for the theory itself. The crux of the theory is the hypothesized behavioral difference between the two types of representative. But if the Michigan Senate may be assumed to be similar to many other state legislatures, then the maximizer might be more a phantom than a reality. He simply may not exist in sufficient numbers to permit Fiorina's model to be a useful explanation of legislative voting.

Fiorina: The Zero-Order Homogeneous, Heterogeneous, and Outside Group Propositions

The remainder of this chapter will focus on the test results for those theoretical propositions dealing with the maintaining representative. Originally, Fiorina divided the propositions into two categories--those appropriate when constitutency opinion was homogeneous and those appropriate when it was conflictful or heterogeneous. We have added a third category to determine if the underlying logic of the theory might be extended to outside interest groups. By "outside" we are implying that the group or groups cannot be considered as part of the legislator's voting constituency. Nonetheless, these actors might be perceived as capable of affecting the legislator's current probability of reelection to office (p).

From a set of simplifying assumptions, Fiorina has deduced that "when an issue is controversial and is of potential concern to only one group in the legislator's district, maintaining representatives will vote with the constituent group with a probability equal to or exceeding one half."[8] This is the central proposition dealing with the condition of a homogeneous constituency. As was stated in the design chapter, we are unable to provide a direct, and consequently wholly legitimate, test of this hypothesis. To do so, would require that the voting behavior of each legislator be followed over an indeterminate series of votes. If, after a longitudinal analysis of this sort, it was found that most legislators voted with the constituency at least half the time the proposition would be considered to have been supported empirically.

Although 115 cases were collected for analysis, they represent an average of only three interviews for each legislator. This number was insufficient for conducting a longitudinal study. In order to proceed, then, we were forced to posit the perhaps unrealistic assumption that group and individual behavior are similar. That is, we had to assume that a rate of 50 percent constituency voting was also the expectation in "vote aggregated" sample.

Tables IV-9 and IV-10 respectively display the results of the chamber and party majority null models for

those cases where constituency opinion was determined to be homogeneous. The chamber model achieved a reduction in expected error of 40 percent. But the party majority model performed much better, achieving a reduction of roughly 58 percent. When the difficulty of the prediction is considered, the party model still dominates the chamber model: UVp (party) = .26 > UVp (chamber) = .18.

TABLE IV-9: Homogeneous Constituency--Senator's Vote by Senate Majorty

Senator's Vote	Senate Majority: Against	Senate Majority: For	
Against	10	(9)	19
For	(4)	24	28
	14	33	47
	vp = .40	uvp = .18	

TABLE IV-10: Homogeneous Constituency--Senator's Vote by Party Majority

Senator's Vote	Party Majority: Against	Party Majority: For	
Against	12	(7)	19
For	(2)	26	28
	14	33	47
	vp = .58	uvp = .26	

Table IV-11 represents the aggregated version of Fiorina's homogeneous constituency proposition. The del value of .31 and the summary value of .14 suggest that Fiorina's hypothesis was less successful in predicting the vote than either of the two null models. Even so, the theory still predicted just over 67 percent of the cases correctly. But the fact remains that two atheoretical prediction rules did better. There are a number of possible explanations for this rather disappointing performance, but we will defer discussing them until all the zero-order propositions from the theory have been evaluated.

TABLE IV-11: Senator's Vote by Position of Homogeneous Constituency

Senator's Vote	Homogeneous Constituency: Against	Homogeneous Constituency: For	
Against	11	⑧	19
For	⑦	20	27
	18	28	46
	vp = .31	uvp = .14	

The statistical performance of Fiorina's model deteriorates further as we move from a homogeneous to a heterogeneous constituency. Before we specify how much it has deteriorated, though, we will examine the accuracy of the two null models in predicting the vote when

constituency conditions are conflictful. Table IV-12 displays the results for the chamber majority model. The del and summary values of .15 and .06 respectively, suggest that knowing the majority position in the Michigan Senate does not aid us significantly in predicting the vote of any single legislator. In fact, this knowledge helps us reduce the expected error by only fifteen percent.

TABLE IV-12: Heterogeneous Constituency--Senator's Vote by Senate Majority

Senator's Vote	Senate Majority: Against	Senate Majority: For	
Against	4	⑤	9
For	⑨	23	32
	13	28	41
	vp = .15	uvp = .06	

In comparison to the chamber null, the party majority model performed spectacularly. It provided only four incorrect predictions out of forty-one heterogeneous cases. This translates into a 73 percent reduction in expected error and a summary value of .29. Clearly, the statistical accuracy of the party majority model, in this instance, is as good or better than that of any

legislative voting model that has yet been proposed. Table IV-13 displays the results.

TABLE IV-13: Heterogeneous Constituency--Senator's Vote by Party Majority

Senator's Vote	Party Majority: Against	Party Majority: For	
Against	8	①	9
For	③	29	32
	11	30	41
	vp = .73	uvp = .27	

Fiorina has predicted that "when an issue is controversial and when groups within the district and perceived to disagree on it, maintaining legislators will vote with the group perceived to be the strongest more than half the time."[9] But according to our test results, this is definitely not the case. Table IV-14 shows that this prediction rule yields more errors than we would expect to make without knowing the position of the strongest group in the heterogeneous constituency. Both the del and summary values are, for the first time, negative. There are explanations, we believe, for the rather dismal performance of the heterogeneous proposition. But once again, we will defer discussing them until we see how the outside group propositions fare.

TABLE IV-14: Senator's Vote by Position of Strongest Group in Heterogeneous Constituency

Senator's Vote	Group Position: Against	Group Position: For	
Against	5	(4)	9
For	(23)	9	32
	28	13	41
	vp = -.10	uvp = -.06	

The next three tables deal with the impact of groups which are not part of the legislator's voting constituency but which nonetheless may affect his probability of getting reelected. We believe that Fiorina's theory may be extended to those outside groups which are perceived as electorally important. Specifically, it is hypothesized that a legislator will vote with the position of the strongest outside group if it is thought capable of raising or lowering the legislator's ability to retain office. This proposition is the direct analog to the heterogeneous constituency hypothesis that was just tested.

Tables IV-15 and IV-16 assess the utility of using knowledge of the chamber and party majorities to predict a legislator's vote in those instances where outside groups are involved.

The statistical results mirror those obtained with the homogeneous and heterogeneous constituencies. Once

Once again, the party model proved remarkably accurate with a decrease in expected error of 67 percent. In comparison, the chamber model yielded a decrease of only 28 percent. When the difficulty of the predictions is taken into consideration, the party majority model is clearly dominant. UVp (party) = .26 > UVp (chamber) = .11.

TABLE IV-15: Outside Groups--Senator's Vote by Senate Majority

Senator's Vote	Senate Majority: Against	Senate Majority: For	
Against	11	(12)	23
For	(11)	48	59
	22	60	82
	vp = .28	uvp = .11	

TABLE IV-16: Outside Groups--Senator's Vote by Party Majority

Senator's Vote	Party Majority: Against	Party Majority: For	
Against	17	(6)	23
For	(5)	54	59
	22	60	82
	vp = .67	uvp = .26	

The hypothesis that a legislator will vote in accordance with the position of the strongest outside group was not supported empirically. Table IV-17 shows that knowing the position of that group provided no help in predicting a legislator's vote. In fact, the negative del and summary values suggest that more errors were committed than would have been expected without this information. Fifty of the eighty-two cases were incorrectly predicted--an error rate of nearly 61%!

TABLE IV-17: Senator's Vote by Position of Strongest Outside Group

Senator's Vote	Outside Group: Against	Outside Group: For	
Against	6	(17)	23
For	(33)	26	59
	39	43	82
	vp = -.23	uvp = -.11	

Explanations for the Empirical Results

Regardless of whether one is dealing with outside groups, a homogeneous or a heterogeneous constituency, the pattern of statistical results is always the same: the party majority model yields the most accurate predictions, followed by the chamber model and then Fiorina's theoretically derived propositions.

It is distressing, of course, to find the substantive theory performing so poorly. What we must ask ourselves now is why it met with so little success when tested in the field. Three possible explanations come to mind immediately.

a) Unreliability of the Data: Except for the estimates of p and p*, there is a strong probability that the data are unrealiable. Many of the questions in the interview schedule were politically sensitive, requiring the legislator to detail how various groups may have influenced his voting behavior. We left many interview sessions with the feeling that the responses were less than truthful. However, we are unable to substantiate this allegation. But if it is true, then it may help explain why Fiorina's propositions did not receive empirical support.

b) Questionable Aggregation of the Data: In the design chapter we argued that a direct test of the "maintaining" hypotheses would require a longitudinal analysis of the voting record of each legislator. If most representatives voted in the predicted direction at least half the time, the propositions would have been supported. With an average of only three interviews per legislator, however, we were forced to abandon plans for a longitudinal study. The

only viable alternative was to aggregate the votes and assume that the rate of 50 percent constituency voting would also be the expectation in the aggregated sample. It should be recognized that the model's poor statistical performance may be an artifact of the untenableness of this assumption and the inappropriateness of the aggregation procedure.

c) Deficiencies in the Theory: A third, and final, explanation for the theory's lack of empirical support may be that it is simply "off the track." In chapter two we argued, quite strongly, that Fiorina ignored a number of possible determinants of legislative voting when he devised his model. His complete reliance on constituency factors, we felt, significantly reduced the plausibility of the theory. If legislative voting is indeed a function of a number of additional factors, then the poor statistical performance of the model appears somewhat more understandable. The lack of empirical support for both the homogeneous and heterogeneous constituency propositions may represent a failure of the theory.

It is virtually an impossible task to determine if one, two, or all three of the explanations that have been discussed account for the failure of Fiorina's model in

the field. We are inclined to believe that there is some truth in each explanation. But the deficiencies in the data and our inability to conduct a longitudinal analysis, are sufficient conditions for the failure. And until new tests of the theory are carried out, we will continue to weigh those explanations more heavily.

Consistency of the Zero-Order Results: The Introduction of Statistical Controls

The tests that have been conducted thus far have been based on the relationship between a single dependent variable and a single independent variable. For example, we previously used the position of the strongest group in the heterogeneous constituency (ind. var.) to predict the legislator's vote (dep. var.). In this section, we will "elaborate" those bivariate relationships to determine whether the statistical performance of Fiorina's model remains invariant over different conditions. By introducing control variables, we hope to learn if:

- the conditional del values are different from the zero order del
- any increasing or decreasing patterns can be discerned across the conditional tables
- the conditional patterns are similar for the homogeneous, heterogeneous, and outside group propositions.

Eight variables were selected as controls. They include:

a) Political Party: The rationale for using party is quite clear. Many studies of legislative voting have documented differences between the behavior of democrats and republicans. It was felt that these differences might appear in tests of Fiorina's propositions.

b) Intensity of the Legislator's Opinion: Earlier it was argued that the intensity of the legislator's attitude might have a significant effect on his voting behavior. Although Fiorina does not explicitly deal with this possibility, we felt that it was worth exploring. In general, we suspect that the statistical accuracy of the model will decrease as the intensity of the legislator's opinion increases.

c) Length in Office: Fiorina's theory is based on the premise that the primary goal of any legislator is reelection to office. Attaining this goal requires the legislator to engage in certain kinds of activities and behavior. It may be that these responses are learned over time. Therefore, we expect the propositions of the theory to achieve better statistical success as the length of office increases.

d) Previous Elective Office: The rationale for using this variable as a control is also based on the assumption of learned response. We

expect the model to produce more accurate predictions among those legislators who previously held elective office.

e) Education: While the learned response argument might apply here, we are actually using education as an exploratory control. That is, we simply want to find out if it makes a difference.

f) Percent Urban: This variable may be thought of as a proxy for the type of constituency that the legislator represents. It might be argued, for example, that districts with a small urban population can be characterized as homogeneous. And it is in this type of district that Fiorina believes a legislator "can raise or maintain his subjective probability of reelection of voting in an optimal fashion."[10] In comparison, highly urban districts may be thought of as heterogeneous, where profitable voting strategies may not always exist. Based on this logic, we suspect that the performance of Fiorina's model should be better as the precent urban population decreases.

g) Current Probability of Reelection: Here we are hypothesizing that the higher the value of p, the poorer the performance of the model. Those legislators who feel electorally secure may not

vote in the predicted direction as often as those who feel less than secure.

h) Minimum Acceptable Probability: The lower the value of p*, the greater the electoral risk that a legislator is willing to assume. Therefore, we expect the performance of the model to be better among high p* legislators than among low p* represenatives.

Tables IV-18, IV-19, and IV-20 show the effect of political party on Fiorina's homogeneous, heterogeneous, and outside group propositions respectively. The zero-order del values were .31, -.10, and -.22. A cursory examination of the conditional tables shows some differences with the zero-order results, but no consistent effect of the party variable. For the homogeneous constituency cases, the predictability of republican behavior remained unchanged from the zero-order table, while it decreased significantly for the democrats. In the heterogeneous conditionals, we find the republicans doing worse and the democrats doing better. But, for the outside group cases, the predictability of republican behavior remained unchanged, while democratic behavior became slightly more predictable. To reiterate what has already been stated, political party appears to have no consistent effect.

TABLE IV-18: Homogenous Constituency--Senator's Vote by Position of Homogeneous Constituency by Party

Senator's Vote	Republican		Democrat	
	Against	For	Against	For
Against	9	④	2	④
For	④	6	③	14
	vp = -.30 uvp = -.14		vp = .15 uvp = .05	

TABLE IV-19: Senator's Vote by Position of Hetergeneous Constituency by Party

Senator's Vote	Republican		Democrat	
	Against	For	Against	For
Against	5	④	0	⓪
For	⑥	1	⑰	8
	vp = -.34 uvp = -.16		vp = 0 uvp = 0	

TABLE IV-20: Senator's Vote by Position of Outside Group by Party

Senator's Vote	Republican		Democrat	
	Against	For	Against	For
Against	5	(13)	1	(4)
For	(9)	6	(24)	20

vp = -.20
uvp = -.10

vp = -.12
uvp = -.60

Tables IV-21, IV-22 test the hypothesis that the statistical accuracy of Fiorina's model decreases as the intensity of the legislator's personal position on the issue increases. What we expected to find in these tables was a monotonic decrease in the values of del as one moved from the conditional representing the lowest level of intensity to that representing the highest level. And in fact, we did find this pattern for the homogeneous and heterogenous constituency cases. Among the former, the values of del declines from 1.0 to .25 to .21 while among the latter they decreased from 1.0 to .15 to -.11. The hypothesized pattern did not occur with the outside group cases.

The results from Tables IV-21 and IV-22 are encouraging. They suggest that Fiorina's homogeneous and heterogeneous constituency propositions may have to be modified to take into account the intensity of the

legislator's personal position. Because of the possible unreliability of the data, however, we would not support such a modification at this time. Future tests should re-evaluate the effect of intensity to determine if our initial results are corroborated.

TABLE IV-21: Senator's Vote by Position of Homogeneous Constituency by Legislator's Intensity

Senator's Vote	Very Little		Some		A Great Deal	
	Against	For	Against	For	Against	For
Against	1	(0)	4	(5)	6	(3)
For	(0)	3	(2)	10	(5)	7
	vp = 1.0 uvp = 3.6		vp = .25 uvp = .11		vp = .21 uvp = .10	

TABLE IV-22, 23: Senator's Vote by Position of Heterogeneous (Outside) Constituency by Legislator's Intensity

Senator's Vote	Very Little		Some		A Great Deal	
	Against	For	Against	For	Against	For
Against	0	(3)	3	(5)	3	(9)
For	(3)	0	(17)	14	(13)	12
	vp = -.10 uvp = -.50		vp = .12 uvp =-.06		vp = -.26 uvp = -.12	

Tables IV-24, IV-25, IV-26 examine the effect of "length in office" on the zero order predictions. If the

primacy of the reelection goal is reasonable, and if it can be assumed that the skills required to secure that goal may be learned over time, then one might hypothesize that the accuracy of Fiorina's predictions would increase monotonically with increases in the length in office. This hypothesis is supported in the homogenous constituency conditionals where the value of del rose from 0 to .11 to .47. But, for the other two groups, the anticipated pattern simply did not emerge. In fact, the outside group cases were characterized by a monotonically decreasing pattern.

Based on these results, it could be legitimately argued that the effect of "length in office" is inconsistent. But, the results with the homogeneous cases do not permit us to endorse the wholesale dismissal of this variable. It should be remembered that the homogeneous constituency proposition was the only one to achieve a positive reduction in expected error in the zero-order table. The other two propositions actually increased the number of prediction errors! The relatively successful zero-order test, and the occurrence of the hypothesized pattern of increasing del values in the homogeneous conditionals, leads us to believe that the effect of "length in office" should be explored further.

TABLE IV-24: Senator's Vote by Position of Homogeneous Constituency by Length in Office

Senator's Vote	One Year or Less		Two-Four Years		More Than Four Years	
	Against	For	Against	For	Against	For
Against	0	①	3	③	8	④
For	⓪	1	④	7	③	12
	vp = 0 uvp = 0		vp = .11 uvp = .05		vp = .47 uvp = .47	

TABLE IV-25,26: Senator's Vote by Position of Heterogeneous (Outside) Constituency by Length in Office

Senator's Vote	One Year or Less		Two-Four Years		More Than Four Years	
	Against	For	Against	For	Against	For
Against	0	⓪	2	⑦	4	⑩
For	①	1	⑬	16	⑲	9
	vp = 0 uvp = 0		vp = -.18 uvp = -.08		vp = -.32 uvp = -.17	

Tables IV-27, IV-28, and IV-29 examine the effect of prior office experience. The use of this control is also based on the assumption of learned response. The ability to select optimal voting strategies may be a skill which is acquired with experience. It might take some time before a legislator's decisional process approximates the one posited by Fiorina. For example, the representative may not realize the political costs involved in voting

against the strongest group in his heterogeneous constituency. After a few mistakes, he might realize that voting with the more powerful group will increase his probability of getting reelected. The lessons which he learns prior to entering the legislature, then, may sharpen his political acumen. Based on this logic, we expect Fiorina's model to perform better for those legislators who have previously held elective office.

The empirical results are once again contradictory. The effect of prior office experience is opposite of what had been hypothesized for the homogeneous and heterogeneous cases. The behavior of those representatives who did not hold elective office before entering the Michigan Senate was more predictable than the behavior of those who did. Among the outside group cases, however, the hypothesized pattern did occur. We have no satisfactory explanation for the inconsistency in the results. Perhaps the effect of having prior office experience is different then we had theorized. Or perhaps the results are an artifact of the unreliability of the data.

TABLE IV-27: Senator's Vote by Position of Homogeneous Constituency by Previous Elective Office

Senator's Vote	No		Yes	
	Against	For	Against	For
Against	6	③	5	③
For	④	11	③	9
	vp = .37 uvp = .17		vp = .24 uvp = .11	

TABLE IV-28: Senator's Vote by Position of Heterogeneous Constituency by Previous Elective Office

Senator's Vote	No		Yes	
	Against	For	Against	For
Against	3	①	2	③
For	⑫	7	⑪	2
	vp = .05 uvp = .03		vp = -.63 uvp = -.24	

We had no compelling rationale for using education as a control except that various studies have shown it to be correlated with certain attitudes and behavior. Theoretically, it was unclear to us whether an individual's experiences in school would have any systematic effect on his/her voting behavior in a legislature. The assumption of learned response does not seem appropriate her, for there is no reason to believe that

one's formal schooling will impart the political skills which are required for recognizing optimal voting strategies. The education variable, then, is being employed as a control primarily for exploratory purposes. We simply want to determine if it makes a difference in the statistical performance of the various propositions.

Tables IV-30, IV-31, and IV-32 present an array of confusing and inconsistent empirical results. Looking first at all the homogeneous constituency conditionals, which all show a positive reduction in expected error, we find an interesting variation in the values of del. It appears that the accuracy of the model is superior to the zero-order level (.31) for those legislators holding high school and graduate degrees. The values of these conditional dels are .39 and .58 respectively. But the model does less well (vp = .07) for legislators with only an undergraduate degree. The heterogeneous and outside group cases also achieve the lowest level of accuracy among those representatives who graduate with a B.A. or B.S. degree. Unfortunately, we must once again admit that we lack an adequate explanation for these empirical findings.

TABLE IV-29: Senator's Vote by Position of Outside Group by Previous Elective Office

Senator's Vote	No		Yes	
	Against	For	Against	For
Against	3	(8)	3	(9)
For	(23)	10	(10)	16
	vp = -.30 uvp = -.16		vp = .26 uvp = .18	

TABLE IV-30: Senator's Vote by Position of Homogeneous Constituency by Education

Senator's Vote	High School		College		Graduate	
	Against	For	Against	For	Against	For
Against	4	(1)	2	(5)	5	(1)
For	(3)	5	(2)	7	(2)	6
	vp = .39 uvp = .19		vp = .07 uvp = .03		vp = .58 uvp = .28	

TABLE IV-31: Senator's Vote by Position of Heterogeneous Constituency by Education

Senator's Vote	High School		College		Graduate	
	Against	For	Against	For	Against	For
Against	3	(1)	1	(1)	1	(2)
For	(7)	1	(4)	5	(12)	3
	vp = -.08 uvp = -.05		vp = -.29 uvp = -.10		vp = -.20 uvp = -.30	

TABLE IV-32: Senator's Vote by Position of Outside Group by Education

Senator's Vote	High School		College		Graduate	
	Against	For	Against	For	Against	For
Against	3	⑤	2	⑥	1	⑥
For	⑥	5	⑮	7	⑪	14
	vp = -.18 uvp = -.09		vp = -.30 uvp = -.16		vp = -.20 uvp = -.09	

In comparison to several of the other variables that have been used as controls, the percent urban population in a Senate district was selected for rather definite theoretical reasons. It can be argued that districts with a small urban population may be characterized as basically homogeneous while those with a large population may be though of as more heterogeneous in characters.[11] Moreover, it can be argued that the selection of optimal voting strategies is somewhat easier in districts where group conflict is minimal (i.e., in homogeneous constituencies). Therefore, we would expect Fiorina's propositions to fare better in normally homogeneous districts than in those that are typically characterized as heterogeneous.

Based on the summary and conditional del values in Table IV-33, IV-34, and IV-35, we cannot say that the hypothesis is supported. The monotonically decreasing

pattern of vp values that was expected did not occur in any of the tables. In fact, the outside group cases exhibited just the opposite pattern. We suspect that the inconsistent effect of this control may, as we have argued in several other cases, be an artifact of the unreliability of the data.

TABLE IV-33: Senator's Vote by Position of Homogeneous Constituency by Percent Urban

Senator's Vote	0-50%		51-75%		76-100%	
	Against	For	Against	For	Against	For
Against	8	③	2	②	1	③
For	④	4	⓪	3	③	13
	vp = .22 uvp = .10		vp = .45 uvp = .23		vp = .07 uvp = .02	

TABLE IV-34: Senator's Vote by Position of Heterogeneous Constituency by Percent Urban

Senator's Vote	0-50%		51-75%		76-100%	
	Against	For	Against	For	Against	For
Against	3	①	2	②	0	①
For	⑥	1	⑦	2	⑩	6
	vp = -.10 uvp = -.06		vp = -.19 uvp = -.11		vp = -.14 uvp = -.08	

TABLE IV-35: Senator's Vote by Position of Outside Group by Percent Urban

Senator's Vote	0-50%		51-75%		76-100%	
	Against	For	Against	For	Against	For
Against	4	⑩	1	④	1	③
For	⑦	5	⑥	6	⑳	15
	vp = -.30 uvp = -.15		vp = -.28 uvp = -.13		vp = -.09 uvp = -.05	

It can be hypothesized that the accuracy of Fiorina's predictions will increase as the perceived current reelection probabilities of the representative decrease. The logic underlying this prediction is that the lower the value of "p", the more precarious a legislator's electoral situation. Consequently, he should vote in the hypothesized manner more frequently than if his reelection probability was higher.

Tables IV-36, IV-37, and IV-38 test this proposition for the homogeneous, heterogeneous, and outside group cases respectively. When the difficulty of the prediction is taken into consideration, we find a monotonically increasing pattern among those cases representing a homogeneous constituency. The summary values, uvp, increased from .08 to .09 to .20. This suggests that Fiorina's model achieved increasing accuracy as the values of "p" got higher--exactly opposite of what had been hypothesized.

There is a possible explanation for this outcome. It could be that higher "p" values represent the fact that the legislator has appropriately responded to his relevant constituency. He perceives his reelection chances as good because he has voted with the consensual position in the constituency. Unfortunately, this same pattern did not occur among the heterogeneous and outside group cases. For that reason, we are not certain that the explanation should be given much credence at this time. Further tests must be conducted to question or corroborate the present results.

TABLE IV-36: Senator's Vote by Position of Homogeneous Constituency by "p" value

Senator's Vote	50-74		75-84		85-100	
	Against	For	Against	For	Against	For
Against	2	(2)	1	(3)	8	(3)
For	(2)	5	(0)	2	(5)	13
	vp = .19 uvp = .08		vp = .16 uvp = .09		vp = .43 uvp = .20	

TABLE IV-37: Senator's Vote by Position of Heterogeneous Constituency by "p" value

Senator's Vote	50-74		75-84		85-100	
	Against	For	Against	For	Against	For
Against	2	(2)	0	(0)	3	(2)
For	(3)	0	(8)	4	(12)	5
	vp = -.48 uvp = -.23		vp = 0 uvp = 0		vp = -.08 uvp = -.05	

TABLE IV-38: Senator's Vote by Position of Outside Group by "p" value

Senator's Vote	50-74		75-84		85-100	
	Against	For	Against	For	Against	For
Against	2	(5)	1	(2)	3	(10)
For	(3)	4	(10)	6	(20)	16
	vp = -.14 uvp = -.07		vp = -.13 uvp = -.07		vp = -.27 uvp = -.13	

The minimum acceptable probability of reelection, p*, represents the level of electoral risk which a representative is willing to tolerate. Low values of p* suggest that a good deal of risk will be tolerated while high values indicate just the opposite. We hypothesized that Fiorina's predictions would fare better when the values of p* were high than when they were low, for high p* legislators are more concerned with demonstrating those

kinds of behavior which may foster their reelection.

Tables IV-39, IV-40 and IV-41 test the hypothesis. The results, however, provide no support for the proposition. Regardless of whether one is dealing with homogeneous, heterogeneous, or outside group cases, better prediction is achieved for those legislators who had p* values below fifty. The pattern of responses in each table is precisely opposite of what had been expected. This fact may represent either inappropriate theorizing on our part, or unreliability in the data. We are once again uncertain which explanation is the more compelling.

TABLE IV-39: Senator's Vote by Position of Homogeneous Constituency by "p*" value

Senator's Vote	Less than 50%		50-100%	
	Against	For	Against	For
Against	6	②	5	⑥
For	⑤	9	②	11
	vp = .37 uvp = .18		vp = .29 uvp = .13	

TABLE IV-40: Senator's Vote by Position of Heterogeneous Constituency by "p*" value

Senator's Vote	Less than 50%		50-100%	
	Against	For	Against	For
Against	4	①	1	③
For	⑬	5	⑩	4
	vp = .05 uvp = .03		vp = -.26 uvp = -.15	

TABLE IV-41: Senator's Vote by Position of Outside Group by "p*" value

Senator's Vote	Less than 50%		50-100%	
	Against	For	Against	For
Against	3	⑨	3	⑧
For	⑰	14	⑯	12
	vp = -.22 uvp = -.11		vp = -.26 uvp = -.13	

Concluding Remarks

In this chapter, we have examined the statistical performance of Kingdon's consensus model and Fiorina's constituency based theory. A rather substantial amount of information has been generated by our tests, so only the more important findings are summarized below.

. The predictive accuracy of the consensus model in the Michigan Senate was comparable to that

achieved in the U.S. House of Representatives. There were some differences, however. We combined the first two stages of the model and used several null models as alternative tests of the combined stage. Our results were inferior to those obtained by Kingdon. But for the more important stages of the model, where one or two actors are in conflict with the field of forces, the results were quite similar. This time, we achieved perfect predictive accuracy while Kingdon did slightly less well.

. Our influence rankings of the various actors were almost identical to Kindgon's. Both studies found fellow legislators and the constituency to be the most important influences on a representative's voting behavior.

. It was hypothesized that the accuracy of Kingdon's predictions would decrease as the intensity of the legislator's opinion increased. This proposition was not supported for the "no controversy" stages of the model. It could not be evaluated for the "one and two actor" stages because there was no variation in the pattern of responses--all predictions were correct.

. With respect to Fiorina's theory, it was found that reliable estimates could be obtained for p,

the current reelection probability, and p*, the minimum acceptable reelection probability. The coefficient of stability for estimates of the former was .92, as compared to .96 for estimates of the latter.

. Based on the relationship between p and p* for each legislator, it was determined that the 1976 Michigan Senate was dominated by maintainers. Not a single maximizer was found.

. The absence of maximizers may have serious implications for the utility of the theory. If this type of representative appears as infrequently in other legislatures as he did in the Michigan Senate, then the theory will do little to enhance our understanding of legislative voting.

. The test of Fiorina's homogeneous constituency proposition showed a reduction in expected error of thirty-one percent. But better predictive accuracy was achieved with the party and chamber majority null models.

. The test of the heterogeneous constituency proposition showed that using the theoretical prediction rule actually resulted in more errors in prediction than would normally have been expected. The party majority null achieved the highest level

of accuracy with a del value of .73. The chamber model only achieved an error reduction of fifteen percent, which was still superior to that obtained by Fiorina's model.

. The test of the outside group proposition showed a similar pattern of results. The substantive hypothesis again achieved the lowest level of accuracy. In fact, it produced more errors than would have been expected by chance (vp = -.22). The party majority model reduced the error rate by sixty-seven percent, while the chamber null reduced it by twenty-eight percent.

. When the homogeneous, heterogeneous, and outside group tests are evaluated concurrently, a strong pattern emerges: the party null model consistently yields the best predictions, followed by the chamber null model, and then Fiorina's theoretically derived propositions.

. There are two highly probable explanations for the rather dismal performance of Fiorina's model. First, a strong possibility exists that much of the data collected to test the model are unreliable. We suspect that many legislators provided untruthful answers to the more politically sensitive questions. The unreliability of the

data, by itself, might account for the disappointing statistical results.

. But there is a second problem which might also serve as an explanation. A direct and valid test of Fiorina's propositions requires a panel study of the voting behavior of each legislator. With an average of only three interviews per representative, however, this type of analysis was not feasible. Based on a strong and questionable assumption, we performed an aggregation of the data that would permit an indirect test of the theory's propositions. This aggregation might also explain the poor performance of the model.

. Five of the eight variables that were used to elaborate the zero-order predictions showed no consistent or significant effect. Of the remaining three, we were particularly encouraged by the results for the intensity variable. The monotonically decreasing pattern that we expected to find, did in fact occur among the homogeneous and heterogeneous cases. That is, the accuracy of Fiorina's predictions decreased as the intensity of the legislator's opinion increased. The "length in office" and "current probability of reelection" controls should also be explored further based on our initial results. Should the

effect of any of these three variables be corroborated by future tests, important modifications in Fiorina's theory might be suggested.

Our statistical assessment of Kingdon's consensus model and Fiorina's constituency based theory has provided us with a few interesting results, but many more inconsistent or equivocal findings. It is safe to say, however, that the evidence reconfirms the efficacy of the Kingdon model as a predictor of legislative votes. It has now been shown to perform successfully at both the federal and state levels.

The tests of Fiorina's propositions were very discouraging. In every instance, the theory performed less well than either the party or chamber majority null models. As was argued earlier, however, the poor statistical results may be more a reflection of our inability to overcome some difficult methodological problems than a reflection of inadequacies in the theory. Because of this possibility, further tests of Fiorina's model are clearly merited.

FOOTNOTES

[1]The predictive accuracy of a Table A, for example, would dominate the predictive accuracy of Table B if $U_A V_A > U_B V_B$.

[2]See, for example, Julius Turner and Edward V. Schneier, Jr., Party and Constituency: Pressures on Congress, (Baltimore: The John Hopkins' Press, 1970); John Jackson, Constituencies and Leaders in Congress, (Cambridge, Mass.: Harvard University Press, 1974); W. Wayne Shanon, Party, Constituency, and Congressional Voting, (Baton Rouge: Louisiana State University Press, 1968).

[3]In Kingdon's study, the personal position of the legislator was considered to be one component of his/her field of forces. Due to an inadvertent error in coding procedures, however, we failed to include the legislator's position in evaluating the consensus within the field of forces. This ommission could have significantly altered the number of correct predictions for any given stages of the model. Yet a case by case review showed that including the legislator's position would not have altered the empirical results. Michigan's Senators always voted the consensus position.

[4]For example Cherryholmes and Shapiro's simulation was eighty-eight percent accurate while Matthews and Stimson's cue-taking model was accurate in approximately eighty-four percent of the cases.

[5]John W. Kingdon, Congressmen's Voting Decisions, (New York: Harper and Row, 1973), p. 20.

[6]Ibid., p. 21.

[7]In order for a legislator to be classified as a "maximizer", his subjective probability of reelection (p) must be lower than his minimum acceptable probability of reelection (p*). None of the thirty-three legislators in our sample met this criterion.

[8]Morris P. Fiorina, Representatives, Roll Calls, and Constituencies, (Lexington, Mass.: Lexington Books, D. C. Heath and Company, 1974), p. 48.

[9]Ibid., p. 53.

[10]Fiorina, Representatives, Roll Calls, and Constituencies, p. 91.

[11]Ibid., pp. 91-92.

CHAPTER FIVE

CONCLUSIONS AND IMPLICATIONS FOR FUTURE RESEARCH

INTRODUCTION

The theories of Kingdon and Fiorina have been examined from both a theoretical and statistical perspective. It is now time to bring together all that has been learned in order to assess, if only in the most tentative way, which theory has done more to enhance our understanding of voting behavior in American legislatures. It would be short-sighted, though, to limit our conclusions to a summary judgment that one of these theories is clearly superior to the other. The research and analysis conducted in this study should permit us to make more significant statements about the current and future status of legislative voting research.

The consensus model of Kingdon and the constituency model of Fiorina were selected as the focus of this study because they are good representatives of the most recent and advanced theorizing in the field of legislative voting research. As we stated in chapter two, however, they were not the only candidates for a comparative analysis of this type. Strong arguments could have been made for including the cue-taking model of Matthews and Stimpson or the policy dimension theory of Clausen. But when the practical

constraints facing this project were evaluated, we became convinced that only the theories of Kingdon and Fiorina promised a reasonable probability of producing useful results.

We have reviewed the process by which the two theories were selected in order to emphasize that this dissertation is more than a simple comparison of the consensus and constituency models. As reasonable examples of the work that is currently being done in the field, the analysis of these two theories will help us evaluate what has been achieved, and more importantly, what remains to be accomplished in this area of political research.

KINGDON AND FIORINA: A FINAL COMPARISON

One of the recurring themes of this study has been that models of legislative voting behavior cannot be adequately assessed using only statistical criteria. There are basically two arguments to support this position. First, legislative votes appear to be inherently predictable. Simple null models frequently explain significantly more than fifty percent of the variation. Of greater importance, however, is the fact that most theoretical models have consistently achieved eighty-five to ninety percent predictive accuracy. Statistical criteria, then, may do little to help us choose between competing theories when the percent of correct predictions is so uniformly high.

Even if there were greater variation in the

performance of voting models, there is another reason why statistical criteria cannot be relied upon as the only basis of evaluation. It is not inconceivable that we might someday be faced with a model that explains nearly all the variation in the vote, but which seems highly implausible. Good theories of legislative voting must not only be accurate in the statistical sense, they must also appear to be believable representations of that process. And given the inherent predictability of legislative votes, substantive or nonstatistical criteria become significantly more important.

Based on our examination of the theoretical and statistical properties of each model, we find Fiorina's constituency-based theory marginally more appealing. In the remainder of this section we will discuss the factors that led us to this qualified endorsement. Yet in a subsequent section of the chapter, we will argue that Kingdon's consensus model may be more easily modified to become the more useful of the two theories.

In chapter two we examined the two models from a theoretical perspective. To a significant extent, that aspect of the study focused on the logical structure of the theories. One of the things that disturbed us about Kingdon's consensus model was that its underlying premises were never stated. We are still uncertain whether legislators rely on the consensus mode of decision-making because they want to avoid conflict, or because it will

help them achieve policy goals, or simply because it will facilitate their reelection to office. It is difficult to evaluate a behavioral model when the motivations for the behavior being examined are never defined.

Fiorina's theory did not have this deficiency. There was never any doubt that the fundamental axiom of the model was the desire of every legislator to be reelected to office. Fiorina repeatedly stated this assumption throughout his study. More importantly, though, he explained why this axiom was selected as the cornerstone of this theory. Whatever goals a legislator might harbor, he argued, would not be achieved as easily without the retention of the elective office. Whether or not one agrees with Fiorina's reliance on the reelection axiom, or with his defense of its usage, the fact remains that he provided sufficient information for the reader to being an evaluation of his theory. Kingdon did not.

The handling of axioms was the first of four structural properties that we examined. The second property was the relationship between the theory's axioms and its theorems. Here we adopted the rather liberal criterion that a good theory need only demonstrate a "reasonable correspondence" between its axioms and theorems. A deductive relationship was not required. Our analysis of Fiorina's model easily discerned an acceptable level of correspondence between these two components. With Kingdon's model, however, we found no relationship at all.

In fact, his theorems appear to have been empirically derived. They were constructed after the data had been analyzed!

Neither theory was significantly better than the other with respect to the last two structural properties, parsimony and plausibility. Both employed a small number of predictor variables and both appear to have provided a reasonable representation of the voting process. The term "reasonable," however, should not be construed to mean "good." The consensus and constituency models stress short-term influences on the legislative vote - constituency, fellow legislators, etc. Long-term factors, like voting history or ideology, were either ignored or just overlooked. Whatever the reason, their absence makes each model less plausible than it could be. We will return to this argument later in the chapter.

The purpose of chapter two was to critique each theory in terms of the four dimensions we have just discussed. Those dimensions were primarily structural in nature. They told us how the theories were put together. Some readers may feel that while the structural analysis was a legitimate endeavor, it did little to tell us if and how each theory contributed to our understanding of legislative behavior. We agree. Treatment of this topic was purposely delayed until now so that our preference for Fiorina's theory could be defended more forcefully.

One way to compare theories is to evaluate the

extent to which they organize existing knowledge or reconcile contradictions in the literature. Based on our best judgment, Kingdon's consensus model does nothing in this respect. But there are at least three instances where it can be argued that Fiorina's theory does indeed perform this function.

a) The Marginality Hypothesis: Researchers like Anthony Downs, Duncan MacRae, and Warren Miller have argued that representatives from competitive (marginal) districts "can and to some extent do enhance their chances of reelection by taking moderate, middle-of-the-road positions."[1] This is sometimes referred to as the marginality hypothesis. But there are some political scientists who do not subscribe to it. Samuel Huntington,[2] for example, believes that the nature of party competition in marginal districts "leads representatives from those districts to eschew the middle ground and stake out a position far from the center of the constituency preference distribution."[3] This disagreement over the effect of party competition on electoral behavior cannot be easily reconciled. But Fiorina's constituency-based theory does bear on the problem. In fact, it supports Huntington's position.

> First, if two constituency groups are approximately equal in the probability

> that they care about an issue, then a maximizer votes exclusively with the stronger group, while a maintainer does so with probability greater than one-half. Second, we suspect that, empirically, representatives from very competitive districts would be precisely those who would be less certain of reelection than they would like to be, i.e., p p*. Thus, representatives from very competitive districts will likely be maximizers. Third, if the constituency group structure stays constant from issue to issue, as it would if the relevant constituency groups were the constituency parties, then we would find maximizers voting always with the stronger constituency party (presumably theirs, since they were elected). Thus, we would expect marginal representatives to show a close allegiance to their constituency party, and to the extent that marginal districts are conflictful in their group structure one would expect this allegiance to draw these representatives away from the middle ground in the district.[4]

Fiorina's model has not resolved the continuing debate over the marginality hypothesis. What it has done, though, is to strengthen the position of opponents of the hypothesis with a strong new theoretical argument.

b) Safe-Marginal Districts vs. Homogeneous-Heterogeneous Districts:

Political scientists have developed a number of ways of classifying electoral districts, but the safe-marginal designations are probably best known and most widely used. Fiorina has eschewed this classification scheme in favor of

his own which categorizes districts as either homogeneous or heterogeneous on the basis of constituency divisions. He believes the homogeneous-heterogeneous dimension to be a more fundamental one than the safe-marginal. To say that a district is competitive is to assert that it is heterogeneous along a party preference dimension. But Fiorina's system of classification allows any kind of group conflict to define heterogeneity, not just party conflict. This permits retention of a more general theoretical perspective.

Although Fiorina's scheme may help us to classify districts on a more intelligent basis, its major contribution we feel, is unrelated to this. Its real significance derives from the way it reorients our thinking about the relationship of electoral competition to voting behavior. Instead of expecting district safety to correlate with voting behavior because the degree of safety is a rough measure of the legislator's confidence in his reelection chances, we would expect it to correlate because safety is a rough indicator of the homogeneity or heterogeneity of the constituency.

c) <u>The Uninformed Electorate</u>:

During the last twenty-five years, numerous

> public opinion studies have portrayed the American voter as politically unsophisticated at best, and ignorant at worst. If the average voter is unaware of what his representative is doing in Washington, then how do we explain a number of major studies that have found an empirical linkage between office behavior and electoral support?[5]
>
> Fiorina's theory appears to resolve the contradiction in the empirical evidence. The model does not require an informed electorate for legislators to be accountable to their constituents. The reason it doesn't, seemingly derives from the way a representative decides how to vote. Any roll call vote has the potential to rouse a somnolent constituency into action, possibly resulting in the end of a political career. So Fiorina's theory predicts that, even if constituents really aren't watching, that legislators will vote as if they are. Behaving any other way harbors a potentially lethal political cost--the lost of elective office. The implication of this line of argumentation is that voter ignorance may not preclude representative government.

Thus far we have presented two general arguments to support our belief that Fiorina's constituency model is

currently superior to Kingdon's consensus model. First, its structural properties are significantly more impressive. And second, it does far more to organize existing knowledge in the field and to reconcile contradictions in the literature on legislative behavior. Yet our defense of Fiorina's theory becomes more difficult when the statistical performance of the model is considered.

The empirical results from chapter four might lead one to conclude that the model failed miserably in the field. Its predictive accuracy was often less than might be expected by chance. In comparison, Kingdon's consensus model achieved perfect prediction for its third and fourth stages. On the surface, this wide difference in statistical performance appears damning to Fiorina's theory. There are several arguments, however, which make the situation seem less discouraging.

When a model's predictions are not supported empirically, the researcher must try to decide whether the disappointing results stem primarily from a genuine failure of the theory or from the use of faulty methodological procedures. In the analysis chapter, we argued that there are compelling reasons for doubting the validity of our empirical tests of Fiorina's model. First, there is a strong possibility that the data are plagued by a high degree of measurement error. We suspect that many legislators did not provide truthful responses to our

interview questions. And second, practical research constraints prohibited us from using a panel design. Unfortunately, it is doubtful that alternative designs could provide truly valid tests of the theory's propositions.

The severity of the methodological problems faced by this study, and our admittedly inadequate responses to them, force us to conclude that the statistical results for Fiorina's model are highly suspect. The results are too unreliable to use as a basis for comparing the two theories. With the statistical criterion eliminated, our preference for one theory or the other has to be based on theoretical considerations. And as we stated earlier, Fiorina's theory appears superior on these grounds.

THE PROBABILITY FOR SUCCESSFUL MODIFICATION OF THE THEORIES

Our support of Fiorina's theory has been based primarily on the following line of reasoning. Problems in the operationalization of the model rendered tests of its statistical efficacy inconclusive. The two voting models, therefore, could only be fairly compared on theoretical or other nonstatistical criteria. When such comparisons were made, it was concluded that Fiorina's model was somewhat more appealing because of its structural superioritv as a theoretical formulation.

Given the current level of development of the two theories and the existing body of information on their

predictive accuracy, we continue to believe that our preference for Fiorina's model is justifiable. Yet we are hesitant to claim that we will continue to feel this way. Modifications in the consensus model could make it the more attractive of the two theories.

One of the more striking facts about Kingdon's model is that is has now been shown to be highly accurate in predicting votes at both the federal and state level. This leads us to believe that it may be capturing many of the essential features of the roll call voting process. Yet the model, in its current state of theoretical development, provides few clues for its statistical accuracy. The decision rules of the model retain their appearances of arbitrariness, for the behavioral axioms on which they are based remain unarticulated.

It is clear that improvements on the consensus model must begin with a specification of the assumptions from which the model is actually derived. These assumptions must then be related in a systematic manner to the decision rules at each stage of the model. If this can be accomplished, then the consensus model would not only accurately "predict" legislative roll call votes, it would also "explain" them.

It is our suspicion that the theoretical deficiencies of the Kingdon model can be more easily remedied than can the measurement problems facing the Fiorina model. The consensus theory of decision-making already predicts

well. All that is required to dramatically increase its usefulness to legislative scholars is a more cogent theoretical explanation for its success.

THE OUTLOOK FOR THE FUTURE

It is time now to be more discursive, to reflect upon what a study that focuses on two theories can tell us about the future for an important subfield of a discipline. Our analysis of Kingdon and Fiorina's models, complemented by the review of the literature, suggest that three important points can be made about legislative voting research in political science.

First, regardless of the theoretical perspective that they adopted, political scientists during the last quarter century have consistently employed the same basic set of factors to explain legislative voting. The primary determinants appear to be the political party, fellow legislators who serve as cue-givers, and the constituency. Factors which appear somewhat less important include the administration, the staff, interest groups, and the party leadership. The point to be emphasized, however, is that most legislative researchers have used the same building blocks, but in slightly different ways.

The second generalization that can be made is that models of legislative voting tend to emphasize either short term influences or long term factors. Few researchers have tried to integrate both in their models. In their simulation, Cherryholmes and Shapiro made an

admirable attempt at blending the two.[6] But the majority have preferred to emphasize one category of factors over the other. Both Kingdon and Fiorina, for example, stressed the short term components.[7] Clausen, in comparison, adopted the opposite position. He emphasized the long-term aspects of the process with his policy dimension theory.[8]

Finally, it should be pointed out that most of the competing voting models have achieved a rather striking level of predictive success. In spite of the inherent predictability of legislative votes, most theoretical models have, on the average, achieved a level of accuracy roughly between eighty-five and ninety percent. Legislative scholars are now in the position, and it is a pleasant one we might add, of having only fifteen percent of the variance left unexplained.

If our characterization of the current status of legislative voting research is tenable, then what challenges does the future hold? We believe that two theoretical tasks must be assigned the highest priority. First, a unified framework must be developed which more clearly explicates how short and long-term factors operate together in shaping the voting behavior of legislators. As one researcher has said, "a good theory must make a careful distinction between long-term and short-term elements and must include both in its purview."[9] We strongly concur with this position. Second, greater efforts must

be made to disentangle the effects of party and constituency. The political party has been consistently shown to be one of the stronger and more reliable predictors of the vote. But the literature remains confusing about the extent to which party differences actually reflect more fundamental constituency differences. The researcher who does anything to clarify this issue will make a major contribution to the field.

The theoretical tasks facing legislative scholars appear quite different. We are not optimistic about the probability of a comprehensive organizing theory being developed in the near future. But if the theoretical challenges are great, they are no more so than the statistical ones. The goal of explaining the remaining fifteen percent of the variance may prove to be the most elusive of all. It is time that political scientists considered the possibility that the unexplained variation in the vote may be mostly scholastic in nature. No human behavior has been shown to be totally predictable, so there is little reason to believe that legislative voting will be either. But this argument should be put to the test. These deviant or unexplainable votes should be studied more closely. They need to be, if any substantial improvement in predictive accuracy is to be realized.

There is a slim possibility, we believe, that the remaining fifteen percent of the variance might be explained theoretically. But even if it can, there are

two reasons why any improvement in statistical accuracy is unlikely to come quickly or easily. First, the data demands of many current models appear to severely tax the existing level of measurement technology. The difficulties we faced in operationalizing Fiorina's theory may prove to be typical of the methodological challenges facing legislative scholars in the future. And second, we believe that it will become increasingly difficult to gain access to the legislative arena for data collection purposes. In recent years, both federal and state legislators have had researchers asking for increasing amounts of their time. Resistance to the intrusiveness of legislative research is likely to grow. So even if the methodological challenges are met, there is reason to believe that some theories will remain untested.

During the last quarter century, the field of legislative behavior has made great theoretical and methodological strides. But if our study of the models of Kingdon and Fiorina has taught us anything, it is that future advances will come more slowly and with far more difficulty. Developing a comprehensive organizing theory, and explaining the remaining fifteen percent of the variation in the vote, will keep legislative scholars busy for many years to come.

FOOTNOTES

[1]Morris P. Fiorina, Representatives, Roll Calls, and Constituencies (Lexington, Mass.: Lexington Books, D. C. Heath and Company, 1974) p. 100.

[2]Samuel Huntington, "A Revised Theory of American Party Politics," American Political Science Review, 44 (1940), 669-677.

[3]Fiorina, Representatives, Roll Calls, and Constituencies, p. 100.

[4]Ibid., p. 101.

[5]See V. O. Key, The Responsible Electorate (New York: Vintage, 1966). Richard Boyd, "Popular Control of Public Policy: A Normal Vote Analysis of the 1968 Election," American Political Science Review, 66 (1972), 429-449. Warren E. Miller and Donald E. Stokes, "Constituency Influence in Congress," in Robert Peabody and Nelson Polsby (eds.), New Perspectives on the House of Representatives (Chicago: Rand McNally, 2nd ed., 1969), pp. 31-54. Julius Turner and Edward Schneier, Party and Constituency: Pressures on Congress (Baltimore: Johns Hopkins Press, rev. ed., 1970).

[6]Cleo Cherryholmes and Michael Shapiro, Representatives and Roll Calls: A Computer Simulation of Voting in the Eighty-Eighth Congress (Indianapolis: Bobbs-Merrill, 1968).

[7]See Fiorina, Representatives, Roll Calls, and Constituencies. John W. Kingdon, Congressmen's Voting Decisions (New York: Harper & Row, 1973).

[8]Aage Clausen, How Congressmen Decide: A Policy Focus (New York: St. Martins Press, 1973).

[9]Herbert F. Weisberg, "The Inherent Predictability of Legislative Votes: The Perils of Successful Prediction," Social Science Working Paper No. 121 (Pasadena, California: California Institute of Technology, 1976), p. 26.

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APPENDICES

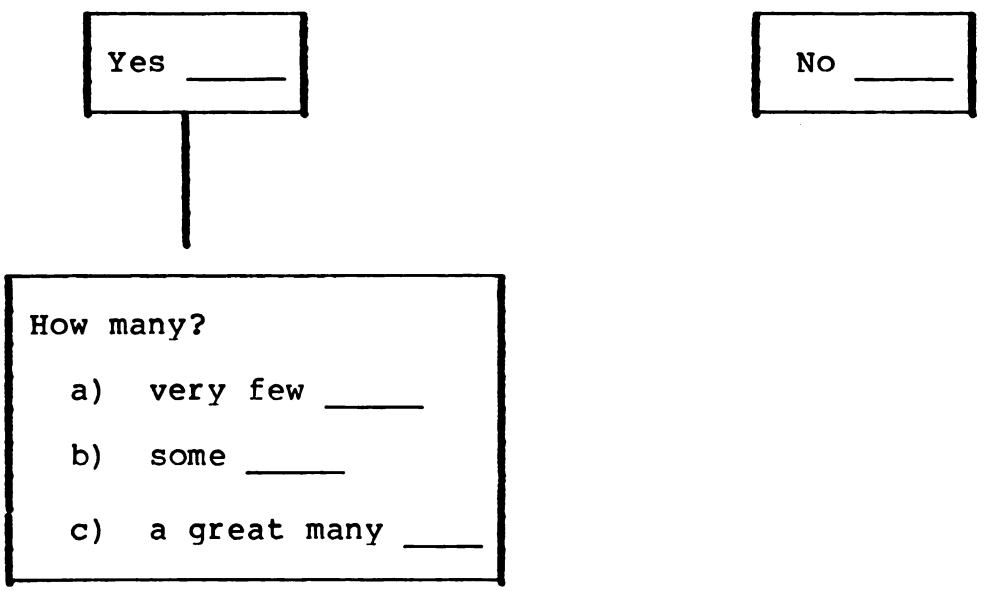
APPENDIX A

APPENDIX A

INTERVIEW SCHEDULE

1. (Cite the vote picked) How did you go about making up your mind?

2. Did any individuals or groups within your voting constituency care about your position on this bill?



(APPLICABLE ONLY WHEN THE ANSWER TO THE PREVIOUS QUESTION, #2, IS YES)

3. Was constituency opinion basically the same or did different groups express different positions on this issue?

Same _____

What do you think your constituents wanted you

a) vote "for" the bill ___
b) vote "against" it ____
c) other (specify) _____

In you opinion, how much did your constituency care about this vote?

a) very little _____
b) some _____
c) a great deal _____
d) DK _____

Different _____

Which groups held different positions?

_____

_____

Did they favor or oppose passage of this bill?

_____

_____

Among those individuals or groups holding different positions on this issue, which do you consider to be the strongest? By this we mean, which individuals or groups could affect you most politically if you voted against their position?

_____

How much could ____ affect you politically?

a) not at all _____
b) very little _____
c) some _____
d) a great deal ____
e) DK _____

In your opinion, how much did ____ care about this vote?

a) very little _____
b) some _____
c) a great deal ____
d) DK _____

4. Outside your constituency, were there any other individuals or groups that cared about your position on this?

Yes _____ No _____

Which individual or group could affect you most politically if they wanted?

_____

Did they favor or oppose passage of this bill?

Favor _____ No _____

How much could _____ affect you politically, if they wanted?

a) not at all _____
b) very little _____
c) some _____
d) a great deal _____
e) DK _____

5. Did your personal position on this issue ever conflict with that of individuals or groups whom you regarded as politically important?

With which groups or individuals was there the greatest difference (conflict) of opinion? (Specific reference required)

_____

Were these groups or individuals from:

a) your voting constituency _____
b) outside your voting constituency _____
c) both inside and outside your voting constituency _____
d) DK _____

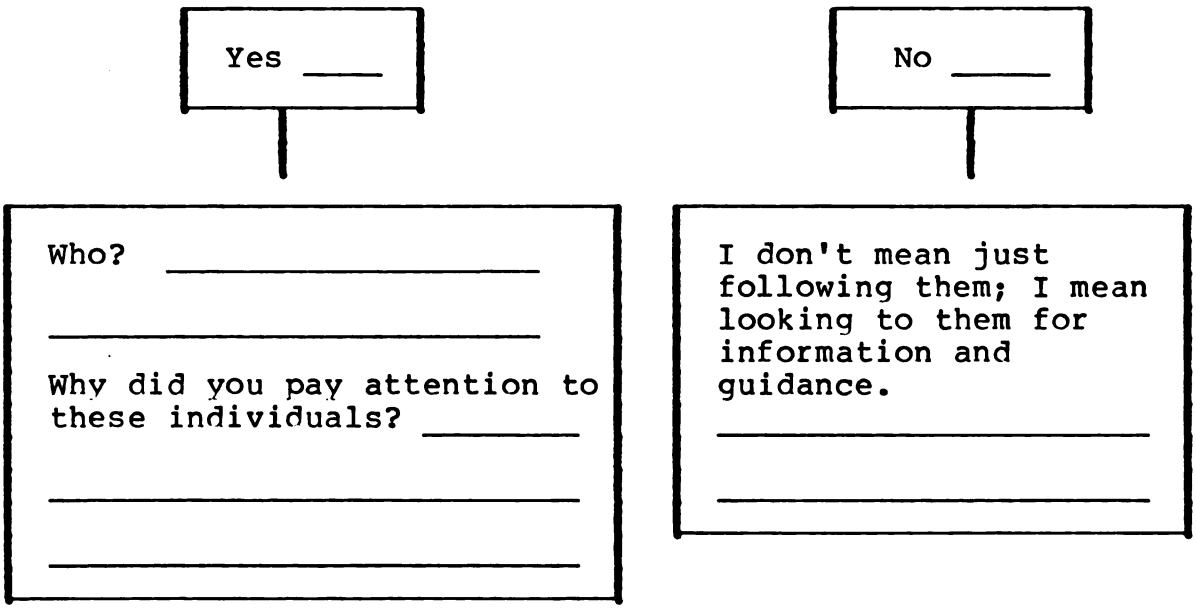
How much did your opinion conflict with the individuals or groups just cited?

a) very little _____
b) some _____
c) a great deal _____
d) DK _____

How did you resolve this conflict or difference of opinion?

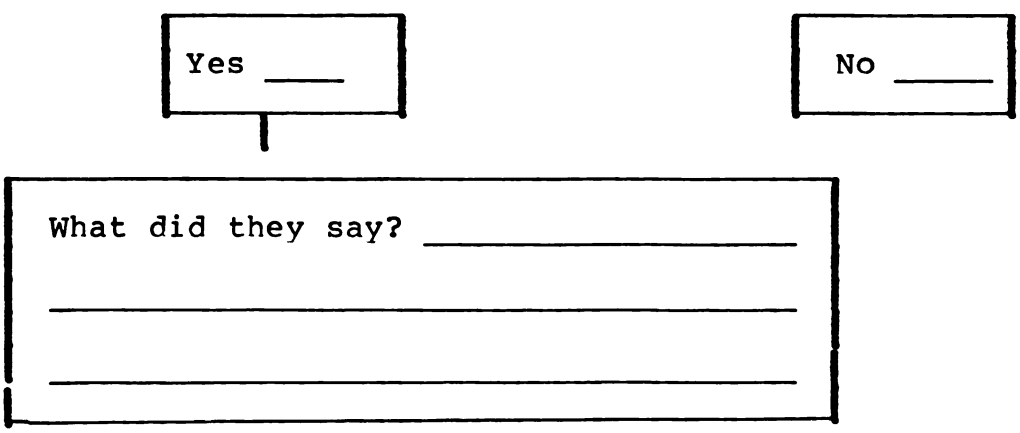
a) by voting with the individual and/or group with whom you disagree _____
b) by voting in accord with your own position _____
c) other (_____) _____

6. Were there any fellow legislators that you paid attention to?



7. What did the party leadership do? Did they support a particular position?

8. Did you talk to staff people about this?



9. Was there anything that you either read or viewed on television that affected how you saw the issue?

Yes ____ No _____

What was it? _____

_____

_____

10. Did anyone from the Governor's office contact you about this issue?

Yes _____ No _____

What did they say? _____

_____

_____

11. At any point along the way, were you ever uncertain about how to vote?

Yes ___ No _____

What caused you to adopt a position on the issue?

_____

_____

12. How intensely did you feel about this issue? That is, how much did you care about it?

a) not at all _____

b) very little _____

c) some _____

d) a great deal _____

e) DK, no opinion _____

13. Is there anything else we haven't talked about which might have been important in determining your vote on this bill?

14. Let's assume that we can rank the various factors which were important in determining your vote. A ranking of "zero" would indicate that you thought the factor had no influence on your vote while a ranking of "ten" would suggest that it was just about as important as it could possibly be.

On a scale of 0 - 10, how would you score the following factors?:

a) Governor _____

b) party leadership _____

c) constituency groups _____

d) other groups outside the constituency _____

e) fellow legislators _____

f) media _____

g) staff _____

h) your personal position on the issue _____

i) other (_____) _____

APPENDIX B

APPENDIX B

CALCULATION OF V_p

1) Table 3-1

$$V_p = 1 - \frac{0 + 1/30 + 1/30 + 1/30 + 0 + 1/30 + 1/30 + 1/30 + 0}{0 + (10/30)(10/30) + (10/30)^2 + (10/30)^2 + 0 + (10/30)^2 + (10/30)^2 + 0}$$

2) Table 3-3

$$V_p = 1 - \frac{0 + 4/30 + 0/30 + 0/30 + 0 + 0/30 + 0/30 + 2/30 + 0}{0 + (6/30)(16/30) + (12/30)(16/30) + (12/30)(0/30) + 0 + (12/30)(0/30) + (12/30)(14/30) + (6/30)(14/30) + 0}$$

$$= 1 - \frac{.20}{.58}$$

$$= .66$$

Thesis