

Constituency and the Analysis of Legislative  
Politics: A Study of the United States House of  
Representatives in the Eighty-eighth Congress

By

JOHN LAWRENCE KC.REY

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To Mary

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## TABLE OF CONTENTS

ACKNOWLEDGMENTS . . . . .	iv
LIST OF TABLES . . . . .	vii
ABSTRACT . . . . .	xi
CHAPTER I. INTRODUCTION AND OVERVIEW . . . . .	1
CHAPTER II. DIMENSIONS OF LEGISLATIVE CONSTITUENCIES . . . . .	11
CHAPTER III. A NUMERICAL TAXONOMY OF LEGISLATIVE CONSTITUENCIES . . . . .	30
CHAPTER IV. LEGISLATIVE INPUTS: CONSTITUENCY AND THE SELECTION OF LEGISLATORS . . . . .	74
CHAPTER V. LEGISLATIVE OUTPUTS: CONSTITUENCY AND ROLL CALL BEHAVIOR . . . . .	147
CHAPTER VI. SUMMARY, CONCLUSIONS, AND SUGGESTIONS FOR FUTURE RESEARCH . . . . .	212
APPENDIX . . . . .	232
SELECTED BIBLIOGRAPHY . . . . .	236
BIOGRAPHICAL SKETCH . . . . .	249

## LIST OF TABLES

Table		Page
1.	Correlations Among Constituency Attributes . . . . .	20
2.	Rotated Factor Loading Matrix: Constituency Attributes . . . . .	21
3.	Within Group Heterogeneity (as Per Cent of Total Variance) for Final Fifteen Steps in Grouping Procedure . . . . .	44
4.	Constituency Attributes of Inductively Derived District Types . . . . .	46
5.	Cross-classification of Inductive Typology with Three "Traditional" Areal Classification Schemes, by Column Percentages . . . . .	51
6.	Malapportionment Scores, by District Type . . . . .	80
7.	Representation Strength of District Types -- Actual Versus Proportionate . . . . .	80
8.	Correlations of Malapportionment Scores with Constituency Attributes . . . . .	81
9.	Turnout Levels, by District Type . . . . .	87
10.	Correlation of Turnout Scores with Constituency Attributes . . . . .	89
11.	Regression of Turnout Scores on Constituency Attributes . . . . .	92
12.	Turnout Levels, by Section . . . . .	97
13.	Regression of Turnout Scores on Constituency Attributes and Section . . . . .	99

14.	Within-section Regression of Turnout Scores on Constituency Attributes . . . . .	104
15.	Actual vs. Predicted Turnout, by District Type . . . . .	108
16.	Democratic Proportion of Two-party Vote, by District Type . . . . .	114
17.	Party Affiliation of District Types' Representatives, by Column Percentages . . . . .	114
18.	Correlations of Democratic Proportion of Two-party Vote with Constituency Attributes . . . . .	115
19.	Regression of Democratic Proportion of Two-party Vote on Constituency Attributes . . . . .	117
20.	Democratic Proportion of Two-party Vote, by Section . . . . .	120
21.	Party Affiliation of Representatives from the South and the Non-South, by Column Percentages . . . . .	120
22.	Regression of Democratic Proportion of Two-party Vote on Constituency Attributes and Section . . . . .	121
23.	Within-section Regression of Democratic Proportion of Two-party Vote on Constituency Attributes . . . . .	124
24.	Actual vs. Predicted Democratic Proportion of Two-party Vote, by District Type . . . . .	127
25.	Level of Inter-party Competition, by District Type . . . . .	129
26.	Correlations of Inter-party Competition with Constituency Attributes . . . . .	130
27.	Regression of Inter-party Competition on Constituency Attributes . . . . .	131
28.	Levels of Inter-party Competition, by Section . . . . .	132
29.	Regression of Inter-party Competition on Constituency Attributes and Section . . . . .	135

30.	Regression of Inter-party Competition on Constituency Attributes, Section, and Party Preference . . . . .	136
31.	Regression of Inter-party Competition on Constituency Attributes -- Non-South Only . . . . .	138
32.	Regression of Inter-party Competition on Constituency Attributes and Party Preference -- Non-South Only . . . . .	139
33.	Actual vs. Predicted Inter-party Competition, by District Type . . . . .	141
34.	Rotated Factor Loading Matrix: Roll Call Variables . . . . .	150
35.	Correlation Coefficients Among Five Roll Call Indices .	156
36.	Roll Call Voting Indices, by District Type . . . . .	157
37.	Correlations of Roll Call Indices with Constituency Attributes . . . . .	160
38.	Regression of Roll Call Indices on Constituency Attributes . . . . .	162
39.	Roll Call Voting Indices, by Section . . . . .	168
40.	Regression of Roll Call Indices on Constituency Attributes and Section . . . . .	170
41.	Squared Partial Correlations of Roll Call Indices with Constituency Attributes and Section . . . . .	172
42.	Roll Call Voting Indices by Party Affiliation of Representatives . . . . .	175
43.	Regression of Roll Call Indices on Constituency Attributes, Section, and Party . . . . .	177
44.	Squared Partial Correlations of Roll Call Indices with Constituency Variables (Including Section) and Party . . . . .	180
45.	Within-Party Regression of Roll Call Indices on Constituency Attributes and Section . . . . .	183

46.	Correlations Between Roll Call Indices and Inter-party Competition . . . . .	188
47.	Regression of Roll Call Indices on Constituency Attributes, Section, Party, and Inter-party Competition . . . . .	190
48.	Within-party Correlations Between Roll Call Indices and Inter-party Competition . . . . .	193
49.	Within-party Regression of Roll Call Indices on Constituency Attributes, Section and Inter-party Competition . . . . .	194
50.	Safe Seats vs. Competition Seats -- Regression of Roll Call Indices on Constituency Attributes, Section, and Party . . . . .	198
51.	Actual vs. Predicted Scores on Roll Call Indices, by District Type . . . . .	202

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CONSTITUENCY AND THE ANALYSIS OF LEGISLATIVE  
POLITICS: A STUDY OF THE UNITED STATES HOUSE OF  
REPRESENTATIVES IN THE EIGHTY-EIGHTH CONGRESS

By

John Lawrence Korey

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This study deals with certain conceptual and methodological problems involved in the specification of constituency environment as a variable in the analysis of legislative politics. The primary goals of the study were to develop measures of constituency that would combine a high degree of both comprehensiveness and parsimony, and to apply these measures in an examination of selected substantive problems in legislative analysis.

The research began with selection of twenty-five social, economic, and demographic attributes for each of the 435 districts of the United States House of Representatives in the Eighty-eighth Congress. Six of these attributes were discovered to be conceptually and empirically redundant with other included characteristics and were eliminated from further study. The remaining nineteen attributes were subjected to a factor analysis which yielded six dimensions accounting for approximately four-fifths of the total variance in the variables analyzed.

Employing these same nineteen attributes, an holistic typology of district environments was derived inductively, thus offering an alternative to traditional deductive typologies based either on urban-rural and related distinctions, or on classifications based on geographic location. The procedure employed was a modification of the error sum of squares hierarchical clustering algorithm, which attempts to group objects in such a way as to maximize group homogeneity. The procedure succeeded in clustering all 435 districts into a relatively homogeneous five-fold typology.

District types, attribute dimensions, and individual attributes were then all employed in an examination of some of the substantive questions concerning constituency and legislative politics which have long been foci of controversy among legislative analysts. In the first phase of this portion of the research, selected legislative input variables -- malapportionment, voter turnout, voter party preference, and inter-party competition -- were studied. Generally modest associations were found between constituency types and attributes and malapportionment. Much closer relationships were discovered between constituency and both turnout and party preference. In all, about four-fifths of the variance among districts in voter turnout in the 1962 congressional elections, and about three-fifths of the variance in patterns of party preference were shown to be explainable in terms of the constituency variables included in the study. Moderately high relationships were also found between constituency and levels of inter-party competition. Closer examination, however, revealed that much of this relationship could be explained as a function of the

association between constituency and party preference, on the one hand, and, on the other, the correlation in the 1962 congressional elections between competition and Republican party preference. It was speculated that much of the inconsistency in the findings of previous research on this subject might be explained as a failure to properly distinguish between party preference and party competition.

The study then shifted to an analysis of constituency influence on congressional roll call behavior. Five roll call indices were selected as dependent variables. Two were derived from a factor analysis of roll calls taken during the first session of the Eighty-eighth Congress, and were designated as Partisanship and Ideology. The three remaining indices were Domestic Presidential Support, Foreign Presidential Support, and support for a Larger Federal Role. Only moderate associations were found between constituency variables and roll call behavior. Party affiliation, by contrast, was found to be a variable of extremely high explanatory power, even when constituency variables were held constant. Electoral marginality, on the other hand, was demonstrated to be of little importance in explaining congressional voting behavior, particularly when party and constituency variables were controlled.

## CHAPTER I

### INTRODUCTION AND OVERVIEW

Analysts of American legislative bodies increasingly have come to adopt what the writers of one leading textbook refer to as a more "sociological" perspective.<sup>1</sup> In other words, there has been a growing realization that institutional action cannot be adequately understood apart from an institution's environment, i. e., the larger social system which provides the context in which action takes place. One element of the legislative environment which has been of special interest, on both normative and scientific grounds, to students of democratic theory has of course been the district of the individual representative. Numerous published studies have sought to examine the relationship between what has been called the "ecological" base<sup>2</sup> of legislative districts -- the social, economic, and demographic variables that make up the constituency environment -- and, on the other hand, the various aspects of legislative organization and behavior.

In spite of this extensive inquiry, many very basic questions concerning the relationship of constituency to legislative politics remain unresolved. There are undoubtedly many reasons for this failing, but perhaps the most basic has been the inadequate manner in which constitu-

ency has been measured. Political scientists and others have given a great deal of attention to measurement problems in dealing with roll calls, and some of the approaches they have developed will be employed in this work. With respect to constituencies, however, measurement often remains at an extremely primitive level. In large part, this is a reflection of similar shortcomings which have in the past characterized all areas of social science dealing with population aggregates. This is becoming increasingly less true, however, since in recent years social scientists, including political scientists, have given this problem increasing attention. While much still remains to be done, significant progress has been made. Unfortunately students of legislative behavior have only begun to incorporate these advances in analyzing representatives' constituencies. Development of sound theoretical generalizations about the impact of constituency on legislative politics must await more adequate specification of constituency as a variable. A brief overview of the problem and of the strategy chosen to encounter it will be presented in this chapter.<sup>3</sup>

Investigation of the constituency environment of legislative politics involves one or both of two approaches. The first, which will be called the attribute approach, seeks to determine associations between given aspects of the legislative process and one or more social, economic, or demographic characteristics (or attributes) of legislative districts such as population density, racial heterogeneity, median income, and so on. The second approach will be referred to here as the areal approach, since those using it do not seek to describe directly specific individual or

collective traits of a district's inhabitants but rather to operate at a higher level of abstraction by characterizing the area in which a district is located. This second approach can in turn be subdivided into two categories. The first is based on a distinction between urban and rural areas, or on some modification of this distinction. The second depends upon one or another form of subdivision into geographical sections of the population of legislative districts under study.

The areal and attribute approaches are, of course, not radically different, since it is usually assumed that areal distinctions in fact tap district environments which differ in their specific characteristics. Still, it is useful to begin discussion by considering the two approaches separately. In the first place, the relationship between the two is more often than not very unclear and it will be in part the task of the present study to try to dispel the resulting confusion. Secondly, the two approaches are best used to fulfill complementary functions. Because it retains greater detail of information, the attribute approach offers a more powerful strategy for detailed exploration of relationships among variables. The areal approach, however, can be advantageous in that it makes it possible to view constituency environment holistically. It thus potentially has great utility for descriptive purposes, for it permits summarization of a great deal of information in succinct fashion. In fact, many of the most substantively interesting questions asked about the legislative process are those taking an holistic view of the legislative district through use of areal categorizations. Thus one finds researchers investigating such questions as:

Do metropolitan and non-metropolitan districts tend to form opposing voting blocs within legislative bodies?<sup>4</sup> Why do Southern legislators receive more than a proportional share of leadership positions within Congress?<sup>5</sup> Were suburban districts more severely underrepresented than urban districts prior to state actions made necessary in the past decade by Supreme Court decisions on malapportionment?<sup>6</sup>

The two approaches further complement each other because conclusions from one will suggest inferences concerning the other. For example, finding that given district attributes correlate with "conservative" roll call behavior may lead an analyst to generalizations about liberal and conservative types of areas.<sup>7</sup> Conversely, a finding that legislators from districts located in metropolitan areas vote more "liberally" than their rural colleagues may lead a researcher to inquire as to why such differences occur and to suggest explanations in terms of the differential attributes of the two kinds of areas.<sup>8</sup> While the strategy chosen will of course depend upon the way in which the investigator formulates his questions, the above comments suggest that the most useful results will be achieved when the two approaches are employed in conjunction.

Unfortunately serious shortcomings exist in the manner in which both the attribute and the areal approaches have been utilized. These shortcomings are less methodological than conceptual. During the past two decades, great improvements have been made in availability of data and in techniques of data manipulation. These advances in information and in methodology have far outrun the ability of legislative analysts to

develop a framework capable of accommodating them successfully. If this limitation can be overcome, considerable progress can be achieved, using already acquired data and already existing techniques, in meeting the purely technical problems involved in studying constituency. It will, therefore, not be the purpose of this study to introduce any methodological innovations, but instead to examine alternative ways of specifying constituency and to explore the extent to which already familiar procedures can aid in this process.

Most previous research relating district attributes to legislative politics has included only a handful of constituency variables, usually with little or no justification for their selection. In recent years some studies have employed comprehensive data sets, but these pioneering efforts have barely begun to scratch the surface of needed analysis. Reorientation of research in this direction, moreover, poses new problems. As greater numbers of attributes are included in a study, there is a tendency for analysis to become unwieldy and results difficult to interpret, pointing to a need for some systematic effort at data reduction in this area. Undoubtedly there is no ideal solution to this dilemma, but the possibility of attaining a more nearly optimal tradeoff between parsimony and comprehensiveness requires exploration. In Chapter II this problem will be taken up in greater detail, and an attempt will be made, through use of factor analysis of a set of nineteen social, economic, and demographic attributes, to describe the basic dimensions of the constituency environment of one important legislative body, the United States House of Representatives.

Studies employing the areal approach have suffered from the fact that areal distinctions, in legislative research and elsewhere, have usually been derived in a rather ad hoc fashion, and their social and political meanings are frequently quite vague. They often appear to have been chosen largely on grounds of convenience and ready availability and have advanced little beyond the common sense level. If this level is to be transcended, more rigorous means must be set forth for developing and evaluating district classifications than have been employed to date. The search for such means will constitute the focus of Chapter III. There it will be shown that most previous areal typologies are linked to attribute studies by the assumption that each type represents a shorthand means of tapping a cluster of districts with similar attributes, but that this assumption is rarely tested or even stated in testable form. Proceeding inductively where previous research has been largely deductive, and employing specific evaluative criteria, a new typology of legislative districts will be developed from the same data base used in Chapter II.

The remainder of the analysis will involve application of the measures set forth in Chapters II and III toward examination of some of the substantive problems which have long confronted past researchers. Chapter IV will examine the relationship between constituency and an aspect of the input side of the legislative process, the electoral arena through which representatives are recruited to Congress. Four specific dependent variables -- malapportionment, voter turnout, partisan preferences of the electorate, and inter-party competition -- will be studied.

Each of these variables will be analyzed at three levels: with respect to district types, with respect to constituency dimensions, and with respect to individual constituency characteristics. Chapter V will present the output side of the legislative system, examining constituency influence on the roll call behavior of representatives in Congress. Analysis will proceed along the same general lines as in Chapter IV. Finally, in Chapter VI, the findings of the study will be reviewed, remaining problems will be discussed, and suggestions for future research set forth.

Constituency and electoral data for the study will be taken from statistics available for the districts of the Eighty-eighth Congress, which was elected in 1962.<sup>9</sup> Roll call data will be taken from the first session (1963) of the Congress.<sup>10</sup> The Eighty-eighth Congress was chosen on pragmatic grounds. For Congresses prior to the Eighty-eighth, extensive census data at the congressional district level are much less readily available. Selection of a later Congress, on the other hand, would have unduly lengthened the gap between the time when the constituency data were gathered (1960) and the occurrence of the political behavior studied, thus contributing to measurement error.<sup>11</sup>

The present inquiry must clearly be classified as a case study, with all the limitations that this implies. Only very speculative generalizations to other legislative systems from the findings set forth here are possible. The Eighty-eighth Congress, in fact, is probably quite atypical not only of American legislative bodies in general, but even of post-World War II congresses. Poised between the Eisenhower and Vietnam eras in

American politics, the Eighty-eighth Congress is not easily classified in either category. The districts of this Congress will, therefore, be treated as a population rather than as a sample, and statistical techniques appropriate to samples, such as significance tests and confidence intervals, will not be employed.

Probably the most extensive study of constituency influence in the Eighty-eighth Congress to appear to date is a doctoral dissertation written several years ago by Jack Roland Vanderslik.<sup>12</sup> The present endeavor (especially, but not exclusively, the portion presented in Chapter V) traverses from a somewhat different perspective much of the same substantive ground covered by Vanderslik's earlier work. This writer's intellectual debt to him is great and will become increasingly apparent as the analysis unfolds.

## NOTES FOR CHAPTER I

1

Malcolm E. Jewell and Samuel C. Patterson, The Legislative Process in the United States (New York: Random House, 1966), p. 3.

2

Heinz Eulau, "The Ecological Basis of Party Systems: The Case of Ohio," Midwest Journal of Political Science, I (August, 1957), 126.

3

In the present chapter, only a brief outline of the main topics to be covered will be given. More detailed reviews and citations of relevant literature will be set forth at appropriate points in subsequent chapters.

4

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7

Jack Roland Vanderslik, "Constituencies and Roll Call Voting: An Analysis of the House of Representatives for the 88th Congress" (Ph.D. dissertation, Michigan State University, 1967), pp. 136, 188.

8

Bruce L. R. Smith, "Isolationist Voting in the United States House of Representatives," in Carl J. Friedrich and Seymour E. Harris, eds., Public Policy, Vol. XII (Cambridge: Harvard University Press, 1963), pp. 351-353; Murray Clark Havens, "Metropolitan Areas and Congress: Foreign Policy and National Security," Journal of Politics, XXVI (November, 1964), 769-774.

9

These data are published in U. S. Bureau of the Census, Congressional District Data Book: Districts of the 88th Congress - A Statistical Abstract Supplement (Washington, D. C.: U.S. Government Printing Office, 1963).

10

The roll call data used in this study may be found in the Congressional Quarterly Almanac 1963 (Washington, D. C.: Congressional Quarterly Service, 1963), pp. 594-655.

11

The present study was undertaken too early to employ the results of the 1970 Census.

12

Vanderslik, "Constituencies and Roll Call Voting." Part of this study has been published in Jack Roland Vanderslik, "Constituency Characteristics and Roll Call Voting on Negro Rights in the 88th Congress," Social Science Quarterly, XLIX (December, 1968), 720-731.

## CHAPTER II

### DIMENSIONS OF LEGISLATIVE CONSTITUENCIES

In his review of developments in analysis of congressional politics since World War II, Robert L. Peabody writes:

Over the last two decades and especially since 1960 a proliferation of empirical studies has yielded much new data, richer insights, and a better understanding of the internal workings of Congress, executive-legislative relations, and the representative process. Despite these significant advances, political scientists have not yet produced a conceptually clear and comprehensive theory of congressional behavior.<sup>1</sup>

Nowhere is this more apparent than in the literature on the effects of constituency environment on the legislative system, yet no area is more crucial to both normative and empirical theory concerning rule-making in a representative democracy. In this chapter, an attempt will be made to outline some of the obstacles to the development of theory encountered in efforts relating constituency attributes to legislative politics, and to suggest means for overcoming these obstacles.

In a highly developed science, key independent variables can often be deduced from well-developed axiomatic theories, and extraneous variance can be controlled at least reasonably well. Without the existence of highly developed theory to guide research efforts, legislative

analysts are largely left to rely upon their own creativity and common sense in deriving categories and selecting indicators by which to measure constituency characteristics. Conversely, the lack of adequate means of measuring constituency characteristics is one very fundamental reason for the slow growth of theory noted by Peabody.

In practice, this problem has usually been resolved by ad hoc selection of, at most, a handful of variables.<sup>2</sup> Typically little or no justification is presented for the selection of the particular variables chosen. The situation is similar to that described by Hadden and Borgatta in their study of American cities:

Traditionally human ecologists have examined the relationship of a few independent variables to a single dependent variable and having exhausted the interrelationships of these few variables have proceeded in subsequent analysis to add an additional variable or two. Sometimes this situation has reached proportions where a variable is associated with an investigator as his variable.<sup>3</sup>

At one time this situation might have been blamed on inadequate sources of data, or means for processing such data, particularly for representative bodies as large as the United States House of Representatives. Today this is no longer true due to the availability of greater amounts of data,<sup>4</sup> to the development and dissemination of increasingly sophisticated statistical techniques and data processing equipment, and to experience gained in research areas with problems structurally and conceptually similar to those faced by analysts of constituencies.

In recent years there has been a growing realization of both the need for and the feasibility of a more comprehensive approach to the study

of constituency attributes, and several works have appeared which have employed a large number of measures of characteristics in analysis of legislative politics.<sup>5</sup> One purpose of the present analysis will be to continue in the direction in which these studies point, for much more work is needed in order to acquire the knowledge necessary for the development of legislative theory. In addition, an effort will be made to explore a new problem created by the inclusion in research designs of large numbers of constituency attributes.

The difficulty is that if there does not exist an adequate theoretical basis for selecting measures of constituency before analysis, the same lack of highly developed theory makes interpretation of results of analysis very difficult. By itself, addition of more variables can serve only to create greater confusion when the researcher is forced to order findings involving many variables all treated individually. There is thus a danger that even the most rigorous and methodologically sophisticated research can become impressionistic at the point at which the investigator comes to draw conclusions from his study.

Concluding an analysis of the Eighty-eighth Congress in which he relates each of twenty-one constituency variables to roll call voting, Vanderslik comments:

There is another approach to the data I have which probably should be used. That is factor analysis. Because I wanted to be able to detect and distinguish relationships between particular independent variables and particular roll call dimensions, I chose the methods which have been employed. The patterns in both constituency data and the roll call voting dimensions

indicate strong intercorrelation. Factor analysis is probably a better technique for assembling the related elements of the data.<sup>6</sup>

This suggestion has much to recommend it, for it offers a way of reducing analysis to manageable proportions, not by arbitrary a priori selection of variables or by attempts to interpret quantities of output after the analysis is completed, but rather by introducing a powerful and systematic data reduction technique into the analysis itself. As Hadden and Borgatta note in proposing factor analysis as a technique for analyzing aggregate data in urban studies,

Modern resources, including high speed electronic computers, make possible a less personalistic and more systematic analysis. It is now possible to begin investigations by ordering the relationships among a large number of variables....<sup>7</sup>

Essentially, factor analysis is an attempt to represent the variance contained in a relatively large set of measurements in terms of a smaller number of dimensions or "factors," while minimizing loss of detail of information. Thus it offers a promising approach to attainment of an optimal tradeoff between comprehensiveness and parsimony. It is a technique already quite familiar to most political scientists, and especially to legislative investigators, who have used it extensively as a tool in the management of roll call data.<sup>8</sup> Factor analysis has been applied, by political scientists and others, in numerous studies of almost every conceivable kind of population aggregate,<sup>9</sup> yet, except for some work that has been done in analyzing behavior in the United Nations General Assembly, little seems to have been done to apply factor analyses specifically to attributes of legislative constituencies.<sup>10</sup>

At the same time it must be noted that factor analysis possesses several limitations which suggest that it be applied cautiously in studying legislative constituencies. In the first place, factor analysis does involve some loss of information concerning the variance in the measures input to the analysis, and it is conceivable that this "unique" variance may be of great importance in explaining the behavior of the legislative system. Secondly, dealing with a small number of relatively general factors can cause the researcher to overlook important nuances that might be uncovered through analysis of specific characteristics. Finally, and most importantly, there is a danger that studying constituency attributes in terms of "underlying dimensions" might cause analysis to become too abstract, to separate both the researcher and his readers too far from the data, and to lead to highly misleading conclusions.

The strategy that will be followed, therefore, in subsequent chapters will be to use, as measures of constituency environment, both specific attributes and factors derived from them.<sup>11</sup> There are two reasons for doing this. The first is that the advantages of one approach are the disadvantages of the other, hence employing both should provide better results than would either employed separately. In this way there is a better chance of staying close to the data while at the same time having a tool with which the data can be ordered. Secondly, retention of specific attributes in the analysis will provide a means for testing the efficacy of factor analysis in studying legislative constituency. If it can be shown that a small number of factors can provide the investigator with as much or nearly as much

information as a large number of individual variables, then clearly the former would be preferable on grounds of parsimony. The remainder of the present chapter will then be devoted to selection and factor analysis of the constituency attributes to be used in the remainder of the study.

From each of the 435 House districts of the Eighty-eighth Congress, nineteen social, economic, and demographic attributes were chosen. Originally, twenty-five variables had been selected, but six were deleted on grounds of redundancy since they were closely related to other included variables both empirically (as indicated by Pearson's correlation coefficient of  $\pm .7$  or more) and conceptually.<sup>12</sup> Data were based on the results of the 1960 Census. The variables selected, along with abbreviated names that will be employed subsequently in tables, are as follows:

1. Population growth, 1950 to 1960 (Pop. Gro.)
2. Population per square mile (Density)
3. Black population/total population (Black)
4. Foreign stock: persons foreign born or of foreign or mixed parentage/total population (For. Stk.)
5. Persons age sixty-five and over/total population (65+)
6. Persons under eighteen years of age/total population (-18)
7. Geographic mobility: persons five years old and older with residence in 1960 different from that in 1955/total population (Mobil.)
8. Elementary school students in private school/all elementary school students (Priv. Ed.)
9. Technical illiteracy: population twenty-five years of age and older with less than five years of schooling/total population twenty-five years of age and older (Illit.)

10. Persons twenty-five years of age and older with four or more years of college/total population twenty-five years of age and older (Coll. Ed.)
11. Families with annual income less than \$2,000/all families (Low Inc.)
12. Families with annual income \$15,000 or more/all families (High Inc.)
13. Gini index of economic inequality (Ineq.)
14. Unemployed civilian labor force/total civilian labor force (Unempl.)
15. Persons employed in agriculture/total employed civilian labor force (Agric.)
16. Persons employed in manufacturing/total employed civilian labor force (Manuf.)
17. White collar workers/total employed civilian labor force (Wht. Col.)
18. Owner occupied housing units/all housing units (Own. Occ.)
19. Overcrowding: housing units with more than one person per room/all occupied housing units (Crowd.)

In selecting variables this writer has attempted, within the limits of availability of data, to be fairly catholic without being indiscriminate. No claim is made that the list is in any way definitive. As Hofferbert comments in presenting a list of variables for a factor analysis of American states,

One could complain that this list...contains no readily apparent theoretical rationale for the particular variables employed. I suppose that I could construct some post hoc rationale that might be moderately adequate as a beginning theory. And, of course, the list could have been extended by using a variety of subdivisions of some

of the items, . . . . But the test of this particular list either in terms of its cohesiveness or its inclusiveness, must be the same as for any alternative. Namely, how much promise does it hold for relating in a theoretically interesting manner to the dependent variables we seek to explain.<sup>13</sup>

A few specific points about the list should be mentioned. Some analysts have included geographic section as a variable in factor analysis of population aggregates.<sup>14</sup> In this study this was not done because, as will be explained in more detail in the next chapter, one goal of the present work is to separate and compare the effects of sectional culture, on the one hand, and social, economic, and demographic variables on the other.

Inclusion of the variable "per cent of elementary school students enrolled in private schools" requires some explanation. Unfortunately, for present purposes, census data include no information about religious affiliation. Since most non-public elementary schools in this country are Roman Catholic, this variable provides a measure, admittedly crude, of Catholicism.<sup>15</sup>

Though two recent articles by Dye<sup>16</sup> are notable exceptions, economic inequality has been largely neglected as an independent variable in political research. The index of inequality employed in the present study is a trapezoidal approximation to the Gini coefficient of concentration and is based on the seven categories of family income reported in the 1960 Census which are available at the congressional district level. In estimating aggregate income, and in computing the index, the average

within-category income for each of the categories, except the open-ended one, was assumed to be the midpoint of the category. For the open-ended category (\$15,000 and over), the average was estimated for each district by fitting Pareto curves to the data.<sup>17</sup>

Table 1 presents a matrix of Pearson's correlation coefficients among all nineteen variables. From this matrix, six factors were extracted.<sup>18</sup> Communalities were derived iteratively with squared multiple correlation coefficients used as initial estimates. The extracted factors were rotated to an orthogonal varimax solution. The rotated factor loading matrix is presented in Table 2. The factor loadings show the degree to which a given variable is associated with a given factor, and when these figures are squared they represent the proportion of variance in a variable that is "explained" by the factor. The communalities in the right hand column of the table represent the amount of variance in each variable explained by all six factors together. Eigenvalues, shown at the bottom of each column of factor loadings, constitute the amount of variance overall which each factor explains, and can be computed as the sum of squared factor loadings for each factor. Table 2 also shows the cumulative per cent of common and of total variance explained by each successive factor.

Factor one has an eigenvalue of 3.47, and accounts for 18 per cent of the total variance in the unreduced correlation matrix, and 23 per cent of the variance common to the six extracted factors. The factor is most closely associated with variables related to poverty: severe inequality, and high levels of technical illiteracy and low income families. On

TABLE 1

## CORRELATIONS AMONG CONSTITUENCY ATTRIBUTES

(Decimals Deleted)

	Pop. Gro.	Density	Black	For. Stk.	65+	-18	Mobil.	Priv. Ed.	Illit.	Coll. Ed.	Low Inc.	High Inc.	Ineq.	Unempl.	Agric.	Manuf.	Whit. Col.	Own. Occ.	
Pop. Gro.	-20																		
Density	-22	23																	
Black	08	45	-33																
For. Stk.	-41	15	-20	17															
65+	26	-54	11	-55	-66														
-18	56	-13	11	-20	-33	13													
Mobil.	-05	40	-21	71	16	-49	-32												
Priv. Ed.	-30	07	62	-35	-23	32	-05	-35											
Illit.	42	04	-22	31	-13	-23	35	19	-39										
Coll. Ed.	-38	-16	49	-64	07	37	-07	-59	76	-48									
Low Inc.	36	15	-22	49	-09	-34	16	42	-40	85	-56								
High Inc.	-30	-09	48	-54	12	17	07	-52	67	-11	84	-18							
Ineq.	-26	14	22	-01	06	01	-03	-14	25	-41	22	-34	09						
Unempl.	-23	-30	03	-46	15	41	-08	-46	30	-36	68	-44	55	-04					
Agric.	00	07	-08	26	-08	-13	-36	37	-21	-12	-41	08	-55	-02	-53				
Manuf.	43	16	-34	54	-05	-40	27	44	-53	84	-68	81	-37	-36	-57	-03			
Whit. Col.	36	-75	-43	-34	-10	50	-08	-24	-31	-01	-04	-06	-15	-22	21	08	-05		
Own. Occ.	-13	-01	50	-47	-44	57	22	-47	80	-36	68	-43	57	25	38	-39	-51	-23	
Crowd.																			

TABLE 2

## ROTATED FACTOR LOADING MATRIX:

## CONSTITUENCY ATTRIBUTES

	I	II	III	IV	V	VI	$h^2$
	Depri- vation	Afflu- ence	Home Owner- ship	Indust- rializa- tion	SFC	Popu- lation Dyna- mism	
Ineq.	.84	-.01	.07	-.48	.12	-.02	.96
Low Inc.	.74	-.40	.17	-.43	-.01	-.11	.94
Illit.	.73	-.31	-.17	-.17	-.32	-.12	.81
Black	.67	-.20	-.26	.11	-.15	.09	.60
Crowd.	.56	-.35	-.11	-.35	-.55	.12	.90
Coll. Ed.	-.09	.92	-.05	.01	.02	.22	.90
High Inc.	-.15	.88	-.17	.14	.02	.02	.84
Whit. Col.	-.35	.83	-.21	.11	.06	.19	.90
Unempl.	.13	-.43	-.20	.04	.00	.05	.25
Own. Occ.	-.25	.07	.91	.01	-.08	-.08	.92
Density	.02	.02	-.78	.10	.11	-.07	.63
For. Stk.	-.53	.30	-.56	.15	.07	-.21	.77
Priv. Ed.	-.43	.27	-.44	.29	.09	-.34	.60
Manuf.	-.21	-.09	.02	.76	-.03	-.27	.71
Agric.	.21	-.30	.34	-.73	.01	-.16	.80
65+	-.10	-.12	-.09	-.19	.85	-.21	.83
-18	.15	-.20	.56	-.18	-.75	.03	.97
Mobil.	.06	.18	.01	-.13	-.16	.93	.94
Pop. Gro.	-.29	.37	.24	.09	-.32	.45	.59

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Eigen- value	3.47	3.40	2.71	1.93	1.90	1.52
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Cumulative per cent of common var- iance	23	46	64	77	90	100
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Cumulative per cent of total var- iance	18	36	50	61	71	79
--	----	----	----	----	----	----

the other hand, variables related to high socioeconomic status, such as college education, white collar employment, and high family income, have only slight loadings on this factor. Black population has a substantial loading on factor one, and to a lesser extent the same is true of overcrowded housing conditions. The factor is negatively related to ethnicity and to Catholicism (as measured by the proxy variable of private elementary education). Factor one will be designated as "Deprivation."

Factor two, with an eigenvalue of 3.40 also accounts for 18 and 23 per cent of total and common variance respectively. This factor is clearly defined by the high loadings of proportion of adults with college educations, proportion of families with annual incomes of \$15,000 and over, and proportion of white collar workers. The relatively low loadings of such variables as unemployment, technical illiteracy, and family incomes below \$2,000 per annum show that the factor is much more clearly associated with cultural enrichment than with deprivation. Factor two will be interpreted as "Affluence."

Factor three has an eigenvalue of 2.71, accounting for 14 per cent of total variance and 18 per cent of common variance. Owner occupancy of housing is easily the variable most closely associated with this factor, which will therefore be designated as "Home Ownership." Not surprisingly, population density has a high negative loading on this factor. To a lesser degree, factor three is negatively associated with ethnicity and with Catholicism, and positively with proportion of population under eighteen years of age.

Factor four has an eigenvalue of 1.94, and accounts for 10 per cent of total, and 13 per cent of common variance. It is defined primarily by a positive loading of manufacturing, and a negative loading of agriculture. Economic inequality and low family income have moderate negative loadings on the factor which will be designated as "Industrialization."

Factor five, with an eigenvalue of 1.90, and accounting for 10 and 13 per cent of total and common variance respectively, is associated positively with proportion of population sixty-five years of age and over and negatively with proportion of population under age eighteen. To a lesser degree, it is negatively related to overcrowding. Factor five will be identified as "Stage in Family Cycle (SFC)."

Factor six has an eigenvalue of 1.52, accounting for 8 per cent of total variance and 10 per cent of common variance. It is primarily defined by geographic mobility, and, to a much lesser extent, is associated with population growth. Factor six will be interpreted as "Population Dynamism."

As Table 2 indicates, the six factors together explain 79 per cent of the variance contained in the nineteen measures analyzed. Thus the goal of achieving a high degree both of comprehensiveness and parsimony seems to have been met fairly well.

The final step in the analysis involves computation of factor scores for each of the 435 districts. Factor scores enable the researcher to locate each case (in this instance, district) on each dimension.<sup>19</sup>

These scores, not presented here, will be made use of in subsequent chapters.

## NOTES FOR CHAPTER II

1

Robert L. Peabody, "Research on Congress: A Coming of Age," in Ralph K. Huitt and Robert L. Peabody, eds., Congress: Two Decades of Analysis (New York: Harper & Row, 1969), p. 3.

2

Almost any number of such studies could be cited. See, for example, Charles F. Andrain, "A Scale Analysis of Senators' Attitudes Toward Civil Rights," Western Political Quarterly, XVII (September, 1964), 488-503; Robert W. Becker et al., "Correlates of Legislative Voting: Michigan House of Representatives, 1954-1961," Midwest Journal of Political Science, VI (November, 1962), 384-396; Thomas R. Dye, "A Comparison of Constituency Influences in the Upper and Lower Chambers of a State Legislature," Western Political Quarterly, XIV (June, 1961), 473-480; Thomas A. Flinn, "Party Responsibility in the States: Some Causal Factors," American Political Science Review, LVIII (March, 1964), 60-71; Thomas A. Flinn and Harold L. Wolman, "Constituency and Roll-Call Voting: The Case of Southern Democratic Congressmen," Midwest Journal of Political Science, X (May, 1966), 192-199; Lewis A. Froman, Jr., Congressmen and Their Constituencies (Chicago: Rand McNally & Company, 1963); Charles H. Gray, "The Social Base of the Coalition of Southern Democrats and Northern Republicans," Political Science, XVII (March, 1965), 31-33; Charles H. Gray and Glenn W. Gregory, "Military Spending and Senate Voting: A Correlation Study," Journal of Peace Research, I (1968), 41-54; Havens, "Metropolitan Areas and Congress"; Leroy N. Rieselbach, The Roots of Isolationism (Indianapolis, Inc.: Bobbs-Merrill, 1966), pp. 114-137; W. Wayne Shannon, Party, Constituency, and Congressional Voting: A Study of Legislative Behavior in the United States House of Representatives (Baton Rouge: Louisiana State University Press, 1968).

3

Jeffrey K. Hadden and Edgar F. Borgatta, American Cities: Their Social Characteristics (Chicago: Rand McNally & Company, 1965), p. 5.

4

For data on districts of the United States House of Representatives, a major breakthrough was achieved with the publication of U. S. Bureau of the Census, Congressional District Data Book: Districts of the 87th Congress - A Statistical Abstract Supplement (Washington, D. C.:

U. S. Government Printing Office, 1961). The data base was greatly expanded in U. S. Bureau of the Census, Congressional District Data Book: Districts of the 88th Congress.

5

Vanderslik, "Constituencies and Roll Call Voting"; Hugh LeBlanc, "Voting in State Senates: Party and Constituency Influences," Midwest Journal of Political Science, XIII (February, 1969), 33-57; John G. Grumm, "A Factor Analysis of Legislative Behavior," Midwest Journal of Political Science, VII (November, 1963), 344-354; John G. Grumm, "The Systematic Analysis of Blocs in the Study of Legislative Behavior," Western Political Quarterly, XVIII (June, 1965), 359; John E. Jackson, "Statistical Models of Senate Roll Call Voting," American Political Science Review, LXV (June, 1971), 439-470; Jack E. Vincent, "Predicting Voting Patterns in the General Assembly," American Political Science Review, LXV (June, 1971), 471-498; Jack E. Vincent, "National Attributes as Predictors of Delegates Attitudes at the United Nations," American Political Science Review, LXII (September, 1968), 916-931; Jack E. Vincent, "An Analysis of Caucusing Group Activity at the United Nations," Journal of Peace Research, II (1970), 133-150. One might also add to this list a number of studies which have not focused primarily on the legislative system, but which have included aspects of legislative politics as part of a larger analysis. See, for example, Thomas R. Dye, Politics, Economics, and the Public: Policy Outcomes in the American States (Chicago: Rand McNally & Company, 1966); Allan G. Pulsipher and James L. Weatherby, Jr., "Malapportionment, Party Competition, and the Functional Distribution of Governmental Expenditures," American Political Science Review, LXII (December, 1968), 1207-1219; Ira Sharkansky and Richard I. Hofferbert, "Dimensions of State Politics, Economics, and Public Policy," American Political Science Review, LXIII (September, 1969), 867-879.

6

Vanderslik, "Constituencies and Roll Call Voting," p. 228.

7

Hadden and Borgatta, American Cities, p. 5.

8

Factor analysis will be applied to roll call data in Chapter V of the present work, and previous roll call factor studies will be cited at that time.

9

An early application may be found in Harold F. Gosnell, Machine Politics: Chicago Model (Chicago: University of Chicago Press, 1937), Appendix B. For a comprehensive review and critique of the literature in this area, see Carl-Gunnar Janson, "Some Problems of Ecological

Factor Analysis," in Mattai Dogan and Stein Rokkan, eds., Quantitative Ecological Analysis in the Social Sciences (Cambridge: Massachusetts Institute of Technology Press, 1969).

10

Vincent, "National Attributes as Predictors of Delegate Attitudes"; Vincent, "An Analysis of Caucusing Group Activity"; Vincent, "Predicting Voting Patterns."

11

This strategy will to some extent parallel that used by Vincent, who employs zero-order correlation, principal components analysis, and canonical correlation in analyzing voting patterns in the United Nations General Assembly. See Vincent, "Predicting Voting Patterns."

12

These variables were taken from the U. S. Bureau of the Census, Congressional District Data Book: Districts of the 88th Congress. The variables deleted were median years of schooling, median family income, proportion of housing sound units with all plumbing, median value of owner-occupied housing units, median value of renter-occupied housing units, and proportion of single-family housing units. For a similar screening procedure, see Sharkansky and Hofferbert, "Dimensions of State Politics," p. 869.

13

Richard I. Hofferbert, "Socioeconomic Dimensions of the American States: 1890-1960," Midwest Journal of Political Science, XII (August, 1968), 407.

14

Hadden and Borgatta, American Cities; Charles M. Bonjean et al., "Toward Comparative Community Research: A Factor Analysis of U. S. Counties," Sociological Quarterly, X (Spring, 1969), 157-176.

15

For a similar application of this variable, see Robert L. Lineberry and Edmund P. Fowler, "Reformism and Public Policies in American Cities," American Political Science Review, LXI (September, 1967), 706. As a partial check on the validity of private elementary education as a measure of Catholicism, the present writer correlated available statewide data on the two variables and obtained a Pearson's  $r$  coefficient of .84. Data on Catholic population were obtained by aggregating diocesan figures obtained from the National Catholic Almanac 1961 (Patterson, N.J.: St. Anthony's Guild, 1961), pp. 440-443. Since a few dioceses cross state lines, it was necessary to combine some state totals before computing the correlation. Though used here as a measure of Catholicism, it should be noted that to some extent, the variable "private elementary education" is

also in part a measure of socioeconomic status. For research showing positive correlations between status and parochial education among Catholics, see Andrew M. Greeley and Peter H. Rossi, "Correlates of Catholic School Attendance," School Review, LXXII (Spring, 1964), 52-73.

16

Thomas R. Dye, "Income Inequality and American State Politics," American Political Science Review, LXIII (March, 1969), 157-162; Thomas R. Dye, "Inequality and Civil Rights Policy in the States," Journal of Politics, XXXI (November, 1969), 1080-1097.

17

For the formula used in applying the Pareto curve see Herman P. Miller, Income Distribution in the United States (Washington, D. C.: U. S. Government Printing Office, 1966), pp. 215-216. In two districts, the seventeenth and twenty-sixth of New York, Pareto curves could not appropriately be applied since the highest income categories contained more families than did the second highest category. Following Miller, the figure of \$24,000 was selected as the average income in the highest category for these cases. For the formula for the trapezoidal approximation to the Gini coefficient, see, ibid., pp. 220-221. An equivalent method is presented in Oliver Benson, Political Science Laboratory (Columbus Ohio: C. E. Merrill Pub. Co., 1969), pp. 8-11. Economists seem to feel that the trapezoidal approximation provides excellent results with eight or more income categories. Since only seven categories were available at the congressional district level, a validity check was made by aggregating categories on a statewide basis, and correlating the resulting Gini indices with those produced at the statewide level in two earlier studies using more detailed data. The results of these studies can be found in Thomas D. Hopkins, "Income Distribution in Grant-in-aid Equity Analysis," National Tax Journal, XVIII (June, 1965), 209-213; Ahmad Al-Samarria and Herman P. Miller, "State Differentials in Income Concentration," American Economic Review, LVII (March, 1967), 59-72. The obtained correlations were .968 with the Hopkins figures and .998 with those published by Al-Samarria and Miller.

18

Solutions were also derived in which different numbers of factors were extracted and rotated. The seven-factor solution was almost identical to the six-factor solution, with the seventh factor having no loading higher than .24. Four- and five-factor solutions yielded results which seemed to be a bit less clear than those produced with six factors.

19

The formula for the computation of factor scores is:

$$X_f = \sum_{i=1}^p \beta_i X_i$$

where  $X_f$  = the factor score on factor  $f$ ,  
 $\beta_i$  = the regression coefficient on factor  $f$  for the  $i$ th  
variable and,  
 $p$  = the number of variables.

See Lee F. Anderson et al., Legislative Roll-Call Analysis (Evanston,  
Ill.: Northwestern University Press, 1966), p. 142.

## CHAPTER III

### A NUMERICAL TAXONOMY OF LEGISLATIVE CONSTITUENCIES

While legislative analysts have devoted a great deal of attention to the study of constituency attributes, an equally voluminous literature has grown up around studies of what Tulau and Hinckley call the "Milieu" of the legislative district.<sup>1</sup> In the latter studies an attempt is made to characterize the nature of the area in which the district is located and to then compare different types of areas with respect to legislative behavior. In this chapter areal classification schemes employed in legislative research will be reviewed, criticisms leveled against them, and an alternative strategy for the development of areal typologies proposed and carried out.

The most common basis of areal classification of districts has included concepts such as "urbanism," "ruralism," "metropolitanism," and related notions. For want of a better term, such classification schemes will be referred to here as "urban-related" typologies.

Most urban-related typologies are based on simple urban-rural dichotomies. The operational basis of this dichotomization takes many forms. Some studies employ the Bureau of the Census term "urban place" to differentiate urban areas from rural.<sup>2</sup> Other census terms, "urbanized

area" and "Standard Metropolitan Statistical Area (SMSA)" have also been used.<sup>3</sup> An occasional researcher has derived his own cut-off between urban and rural areas.<sup>4</sup>

A number of attempts have been made to devise typologies based on more complex distinctions. Friedman, for example, classifies state legislative districts in Tennessee as "urban" (those containing cities of greater than 50,000 population), "mixed" (those with cities of at least 15,000 but not more than 50,000), and "rural" (those with no city as large as 15,000).<sup>5</sup> A Congressional Quarterly typology, which has been used in research by Smith<sup>6</sup> and by V. O. Key,<sup>7</sup> divides congressional seats into "rural," "small town," "mid-urban," and "metropolitan" districts.<sup>8</sup> In recent years several investigators have sought to make distinctions within metropolitan areas and, in particular, to incorporate the concept "suburb" into studies of legislative constituency.<sup>9</sup>

Another form of areal categorization which has appeared frequently in legislative research is that based on groupings of districts by geographic location.<sup>10</sup> As with urban-related typologies, sectionally based district typologies have taken many forms. At the national level a distinction is almost always made between North and South, though the exact boundary line between the two varies from study to study. Another widely used comparison is that between coastal and interior sections. Some sectional classifications are quite simple, others involve a fairly large number of categories.<sup>11</sup> While such distinctions are most common at the national level, they are also sometimes employed within state boundaries.<sup>12</sup>

Sectional and urban-related typologies are by no means incompatible, and often districts are simultaneously classified in both ways, for example, "rural-Southern."

The extensive use that has been made of both urban-related and sectional typologies invites examination of the rationale behind their construction. Unfortunately, students of the legislative process have on the whole been lacking in introspection in this regard, though given the necessity for academic division of labor this is perhaps inevitable. In the following discussion, then, it will be necessary to draw upon insights not only of past legislative analysts but of researchers in other areas of social science in which similar distinctions have been employed. In this discussion criticisms will be set forth which cast grave doubt upon the general usefulness of classifications based on urban-rural and sectional distinctions. At the same time, an understanding of these criticisms will provide the basis for a more satisfactory approach to the development of areal typologies.

Among legislative analysts the most frequent, but perhaps least damaging, criticism of past areal typologies of legislative districts has been that significant differences do not, in fact, occur in the political behavior of voters and representatives from different types of constituency.<sup>13</sup> While there may be merit in this argument, it is less than wholly convincing. For one thing, such criticisms have been directed primarily against classifications based on urban-rural dichotomies, the crudest of the areal typologies discussed above. Many of the more sophisticated classification

schemes which have been developed have yet to be subjected to extensive testing. Further, while many studies have failed to reveal inter-type legislative differences, other studies can be cited which have reached the opposite conclusion.<sup>14</sup> Finally, even if a typology fails to reveal inter-type variance, a finding that different types of constituency environment produce similar kinds of political behavior might itself be of major importance, and does not necessarily demonstrate that the typology in question is not useful.

A more telling criticism deals with the units of analysis employed in making areal distinctions. Legislative district boundaries seldom correspond to the boundaries used in areal classification. "Urban places," for example, usually cover a much smaller geographic area than do legislative districts, and a single congressional district may contain several fairly large urban places, along with their suburbs, as well as extensive rural areas. Major metropolitan areas, on the other hand, often encompass a number of legislative districts, as do sectional divisions. In either case, this lack of boundary congruence can create serious problems for classification. If a legislative district contains, for example, about equal proportions of urban, suburban, and rural zones, how ought it to be classified?<sup>15</sup> Aside from this practical difficulty, an even more serious theoretical problem lies in the fact that the entirety of a district must be categorized on the basis of the nature of only a part. Conversely, when a unit used in developing areal distinctions encompasses several legislative districts, the analyst is forced to place all such districts in the same

category, regardless of differences among them. In short, the unit of analysis on the basis of which areal typologies are derived ought to be the same as the unit of analysis the researcher wishes to study. This is not the case with either urban-related or sectional typologies.

Another difficulty with many areal typologies is the bewildering array of operational definitions which are often given to many of the terms employed. Hadden notes that at least three different operational definitions of the concept of "suburb" are currently in usage.<sup>16</sup> Similarly, the term "rural" has been operationalized in radically different ways. Sometimes it is defined as including any area outside the built-up ring around cities of 50,000 or more, at other times as only those places outside incorporated areas of 2,500 or more.

The problem is much more fundamental than simply one of disagreement over operational definitions, which is a difficulty encountered in almost any research problem in the social sciences. The conceptual basis for the terms used in areal classification is very amorphous. Behind ad hoc operational definitions lies conceptual confusion.

Dewey, in a review of the sociological literature dealing with the concept of urbanism, found that no less than forty different meanings have been associated with the term by various authors. While there was some overlap in definitions, there was nothing like consensus on the meaning of the concept.<sup>17</sup> Kurtz and Eicher demonstrate that a similar confusion has existed in the literature with respect to the suburbanism concept,<sup>18</sup> and Shryock remarks that "suburb is used almost as loosely by

social scientists as by laymen."<sup>19</sup> Smith writes that "the sectional hypothesis has...always suffered from the rather amorphous and elusive nature of a 'section' for the purpose of analysis."<sup>20</sup> The following comment by Hauser, made in reference to research employing urban-rural and folk-urban distinctions in studies of non-Western societies, has general applicability to areal classification concepts.

There is evidence, by no means conclusive as yet, that both parts of these dichotomies represent confounded variables and, in fact, complex systems of variables which have yet to be unscrambled. The dichotomizations perhaps represent all too hasty efforts to synthesize and integrate what little knowledge has been acquired in empirical research...integration is often achieved of that which is not yet known.<sup>21</sup>

Even if the individual concepts used in a given typology could be clarified, the problem of setting forth a rationale for choosing these concepts as the basis for areal classification would still remain. As the brief survey earlier in the chapter should make evident, there are an almost infinite number of ways in which areal distinctions can be made. Faced with this embarrassment of riches, how is the analyst to choose? Is a metropolitan-outstate distinction better or more appropriate than a differentiation between urban and rural areas? Within metropolitan areas how important is it to distinguish between central city and suburb? Should metropolitan areas be further differentiated according to their overall size? Into how many and which sections ought districts be divided? Do urban-related and sectional bases of classification complement each other, or are they alternative approaches to fulfillment of the same function? The

answers to these questions and, in fact, the criteria which one would use in order to answer them are far from obvious.

It may be, as Eulau and Hinckley charge in their review of literature comparing urban and rural legislative districts, that researchers employing areal typologies are guilty of reification. "Two 'sides,' 'forces,' or 'interests' are regarded as opposed to each other, as if they were real collectivities, and the cleavage postulated to exist between them, often derived from quite untenable historically grounded axioms, is accepted as a basic explanatory factor of legislative behavior."<sup>22</sup>

If such classifications really are reifications, of course, it might be better to dismiss them entirely, as at least one analyst seems to suggest.<sup>23</sup> It will be argued here, however, that such distinctions represent, not reification, but, in a tentative and groping way, a perfectly valid insight about measurement of constituency environment. Legislative analysts, usually only implicitly, seem to be using urban-related and sectional typologies as shorthand representatives of complexes of constituency attributes. One can occasionally find in the literature (on legislative analysis and elsewhere in the social sciences) explicit statements of this assumption. Smith, in a study of the Eighty-sixth Congress, admits that "a great many factors other than mere city or county residence are, of course, concealed beneath the rubric of ruralism-urbanism," but argues that "the rural-urban difference still makes convenient categories for the purpose of analysis."<sup>24</sup> Similar sentiments are found in V. O. Key's statement that

metropolitanism and ruralism are broad and deceptive terms that mask other differences that are probably more influential politically than is the fact that some people live in the city and others in the country. Nevertheless, urban-rural differences make a convenient peg on which to hang a discussion. <sup>25</sup>

Sociologists Gist and Fava point out,

Typically, rural-urban definitions achieve their utility by a very simple method. The definition consists only of some easily measurable items such as size, density, or legal community status. These simple items are assumed to be associated, in ways that may or may not be fully understood, with more complex items such as socioeconomic behavior. Therefore, by employing the definition based on the simple items one has an index to the more complicated items. <sup>26</sup>

Friedman, in an essay critical of urban-related classifications, states that

the assumption made by social scientists in using urban-rural distinctions of this kind is that the term, while not precise, provides a useful tool for distinguishing socioeconomic group interests which tend to congregate in the two different types of environment. <sup>27</sup>

Similar assumptions often lie behind use of sectionally based typologies. Marwell states that

the importance of region in structuring roll call voting invites again the question of why region should act as an important independent variable.... Perhaps the best we can do at this point is to speculate that region tends to act as a sort of collective variable adding the effects of a variety of influences all distributed geographically. <sup>28</sup>

Similarly, Turner writes that

sectional differences in congressional voting behavior may be in many cases manifestations of sectional differences in economics, religion, culture, or other characteristics. <sup>29</sup>

In short, the areal and attribute approaches have the same empirical basis and differ only in that the former seeks to deal with constituency characteristics holistically, with the attendant advantages and limitations suggested in the introduction. This may be belaboring the obvious, but, unfortunately, few researchers demonstrate that the different areal types they employ in fact tap different distributions of constituency characteristics. Even when this is done,<sup>30</sup> there is no assurance that another of the wide range of alternative schemes available to the researcher might not have succeeded better in discriminating among types.

Despite these deficiencies, such studies suggest a criterion for developing and evaluating areal typologies which can serve as a starting point for more adequate classification. Presumably, when a researcher classifies districts as, for example, urban, suburban, and rural, an assumption is being made that districts falling into the suburban category, while not identical to each other in terms of the variable complex which the classification scheme taps, are at least relatively similar to each other and relatively dissimilar to districts falling in the urban and rural categories. A typology of legislative constituencies should, then, be regarded as adequate to the extent that it groups districts in such a way as to maximize within-group homogeneity and between-group heterogeneity with respect to a specified set of attributes. In past research it usually has been simply assumed that this criterion, or something like it, is met satisfactorily by whatever typology the investigator is using. What is needed is an approach that will treat within-group homogeneity not as an

assumption but as a goal to be achieved in a rigorous and systematic fashion. To do this it will be necessary to classify areas not on the basis of a theoretically premature deductive method, but inductively, beginning with specified constituency attributes according to which constituency attributes can be grouped.

Inductive typology construction is certainly no novelty. As far back as 1927, Rice attempted to group legislators into clusters whose members had high frequencies of agreement in their voting behavior.<sup>31</sup> His technique, subsequently subjected to some modification, has by now become a standard tool in roll call analysis.<sup>32</sup>

Inductive grouping procedures have perhaps been most extensively exploited in biology. It was in this discipline that the term "numerical taxonomy" was coined to describe the practice of grouping objects into relatively homogeneous clusters on the basis of detailed characteristics.<sup>33</sup> An interesting synthesis of clustering traditions in biology and in roll call analysis has been attempted by Grumm.<sup>34</sup>

Even in the study of population aggregates, inductive techniques are increasingly employed in construction of typologies, and have been used to classify primitive tribes,<sup>35</sup> census enumeration districts,<sup>36</sup> census tracts,<sup>37</sup> cities,<sup>38</sup> counties,<sup>39</sup> states,<sup>40</sup> and nations.<sup>41</sup> Indeed, it can be said with little exaggeration that such techniques have been employed in grouping almost every kind of population unit except legislative constituencies.<sup>42</sup>

In the present study, the districts of the Eighty-eighth Congress will be grouped on the basis of the same nineteen attributes discussed in Chapter II. The procedure used involves three steps: (1) data reduction through use of principal components analysis, (2) grouping of districts using a hierarchical clustering algorithm proposed by Ward, (3) refinement of clusters produced by Ward's algorithm to improve group homogeneity. Each of these steps will now be described.<sup>43</sup>

(1) For reasons of economy and of program limitations, it was decided to reduce the data space before carrying out subsequent steps in the grouping process. Principal components analysis was chosen for this purpose. This technique is similar to factor analysis, but begins with unities in the diagonal of the correlation matrix and does not iterate on these initial communality estimates. The result is that the axes extracted from the matrix are based on all the variance in the matrix rather than, as in factor analysis, the common variance only. Principal components analysis involves no assumptions about underlying dimensions in the data matrix, and thus is inappropriate when analysis requires interpretation of common factor structure.<sup>44</sup> For present purposes, however, principal components analysis was felt to be preferable to factor analysis, since the only goal at present is a mathematical transformation of the data into as few dimensions as possible. Since it is to be used solely as an intermediate step in the analysis, interpretation of dimensions is not necessary.

All nineteen of the social, economic, and demographic variables were subjected to principal components analysis. The first eight com-

ponents accounted for 91 per cent of the total variance in the original data matrix and so it was decided to retain these eight for further analysis. Retention of a ninth component would have contributed only an additional 2 per cent of variance. Since interpretation of components was not required, no rotation of axes was performed. Component scores were computed in the same way as that used in Chapter II for computing factor scores.

One further modification was made of the data before the districts were grouped. Since interest is in the original variables, rather than in the principal components themselves, each component was weighted by the amount of variance it explained in order to remain as close as possible to the initial data. This was done by multiplying all component scores by the square roots of their respective eigenvalues.<sup>45</sup>

(2) Using weighted principal component scores, districts were grouped using Ward's error sum of squares hierarchical clustering algorithm.<sup>46</sup> In the procedure proposed by Ward, each case is initially considered to be a separate "group." At this point, since each group contains only one case, each is perfectly homogeneous. Then those two groups are joined whose union will result in the smallest increment in within-group heterogeneity. Within-group heterogeneity (or variance) is measured by computing the squared difference among all cases within each group on each variable (in the present study, each weighted component) and summing the results over all variables and groups. This total within-group variance is referred to by Ward as the "error sum of squares

(ESS). " With the union of the two groups to form a single group, the number of groups is reduced by one. The amount of within-group heterogeneity provides a measure of the tightness of the new grouping. The process is repeated until all cases have been joined into a single group, at each step those two groups being joined whose union will result in the least increment in heterogeneity.

In the past, solution of this algorithm for problems involving as many cases as are being analyzed here would have been difficult if not impossible even on a high speed digital computer.<sup>47</sup> Philip Bell and Steven Gladin, however, have recently devised a method for solving Ward's algorithm in a way which can economically accommodate problems far larger than the one encountered at present.<sup>48</sup>

Ward's error sum of squares measure is an especially useful statistic. It provides an operational means for evaluating the adequacy of a given classification scheme according to the criterion set forth earlier. The measure is precise, mathematically simple, and has a high degree of face validity as a measure of the "tightness" of a classification scheme. As will be demonstrated later in this chapter, it can be used to evaluate typologies derived by means other than Ward's procedure.

The task remains of determining the number of groups to be retained for further analysis. It is usual to select a grouping level occurring just prior to a sharp loss in homogeneity, since this indicates a point at which an additional small gain in parsimony must be achieved at the cost of a relatively large loss in detail of information. Ward recommends

that, to facilitate this task, output from a clustering program should include, after each step in the clustering process, the error sum of squares, the increase in this figure over the previous step, and the acceleration (the increase in the increase) over the previous step. In Table 3 these figures are given for the last fifteen steps of the clustering algorithm. All figures are expressed as percentages of the total variance of all districts on all weighted components.

The decision was made to retain five groups for analysis. Eight groups would perhaps provide a more natural breaking point, but at this level three groups consisted of only twenty-five, twenty-two, and seventeen districts respectively. It was felt that, in an exploratory study such as this, there would be little of theoretical or substantive interest to be gained by analysis of these relatively small groups and that the finer distinctions which such analysis might yield can better be left for future research.

(3) One major shortcoming of Ward's method is that once two groups have been joined at any stage in the clustering process, their members can never be separated at a subsequent stage even when such separation would result in a more homogeneous grouping.<sup>49</sup> It is possible, however, to in part meet this difficulty by moving districts to groups with which they have a better fit than the groups to which they were assigned by Ward's method. For the present problem, this was done according to the following procedure: Once hierarchical clustering is completed, and a given grouping level selected, the squared difference between the score

TABLE 3

## WITHIN GROUP HETEROGENEITY

(AS PER CENT OF TOTAL VARIANCE)

FOR FINAL FIFTEEN STEPS IN GROUPING PROCEDURE

No. of Groups	Hetero- geneity	Increase	Acceleration
15	29.01	1.09	.03
14	30.11	1.11	.02
13	31.28	1.16	.05
12	32.52	1.24	.08
11	34.07	1.55	.31
10	35.78	1.71	.15
9	38.08	2.30	.60
8	40.39	2.32	.01
7	44.05	3.66	1.34
6	48.18	4.14	.47
5	52.57	4.39	.25
4	58.32	5.75	1.36
3	66.28	7.95	2.20
2	77.35	11.07	3.12
1	100.00	22.65	11.58

of each case and the mean score of each group is computed for all components and summed. Cases are then tentatively reassigned if they are closer to the centroid of a group other than their own. The error sum of squares resulting from this new arrangement is computed and if it is lower than the initial error sum of squares, the reassignments are completed. Since such reassignments alter group means, the process is repeated in iterative fashion.<sup>50</sup>

It had originally been intended to continue iteration until no further reassignments were indicated or until such reassignments failed to further reduce within-group variance. However, after the first iteration, subsequent iterations produced very small improvements but did not reach convergence. After the sixth iteration produced an improvement in the error sum of squares of less than one-twentieth of 1 per cent, the decision was made to terminate the process at that point. The error sum of squares after six iterations was 48.65 per cent of total variance.

Just as the results of a factor analysis must be given a substantive interpretation, so too must the types just derived be supplied with descriptive labels. Three tactics were employed in order to do this.

First, the mean scores of each type were examined, both on the six constituency factors derived in Chapter II, and on the nineteen individual characteristics from which the factors were derived. Table 4 lists the means ( $\mu$ ) and standard deviations ( $\sigma$ ) for each type of each constituency factor and individual characteristic. The table also lists, for each variable, the between-group variance expressed as a per cent of total

TABLE 4

CONSTITUENCY ATTRIBUTES OF INDUCTIVELY  
DERIVED DISTRICT TYPES

	DISTRICT TYPE					Totals
	I Manu- factur- ing	II Pros- perous- growth	III Popu- lation Center	IV Unde- veloped	V Unde- veloped- deprived	
A. Factors						
Deprivation						
$\mu$	-.60	-.24	.18	-.30	1.47	.00
$\theta$	.46	.69	.89	.73	.46	.97
$\eta^2$						.60
Affluence						
$\mu$	-.05	1.04	-.11	-.40	-.41	.00
$\theta$	.75	1.17	1.46	.32	.49	.98
$\eta^2$						.28
Home Ownership						
$\mu$	.13	.23	-2.37	.49	.21	-.00
$\theta$	.59	.59	1.08	.30	.45	.98
$\eta^2$						.65
Industrialization						
$\mu$	.67	.06	.31	-.93	-.26	-.00
$\theta$	.39	.58	.77	.86	.95	.92
$\eta^2$						.42
SFC						
$\mu$	.14	-.57	.52	.59	-.61	.00
$\theta$	.59	1.00	1.15	.86	.89	.97
$\eta^2$						.25
Dynamism						
$\mu$	-.41	.87	-.05	.01	-.16	.00
$\theta$	.73	1.06	1.01	1.00	.64	.97
$\eta^2$						.21

TABLE 4 -- Continued

	DISTRICT TYPE					Totals
	I Manu- factur- ing	II Pros- perous- growth	III Popu- lation Center	IV Unde- veloped	V Unde- veloped- deprived	
Individual Characteristics						
Pop. Gro.						
$\mu$	.20	.72	-.06	.13	.09	.23
$\theta$	.15	.53	.12	.21	.13	.36
$\eta^2$						.45
Density						
$\mu$	2324	1071	28,232	62	240	2708
$\theta$	3858	1522	22,188	149	1291	10,823
$\eta^2$						.56
Black						
$\mu$	.05	.06	.22	.04	.26	.11
$\theta$	.06	.07	.20	.05	.14	.13
$\eta^2$						.44
For. Stk.						
$\mu$	.26	.20	.39	.12	.03	.19
$\theta$	.11	.10	.15	.09	.05	.14
$\eta^2$						.53
65+						
$\mu$	.10	.07	.11	.11	.08	.09
$\theta$	.01	.02	.02	.02	.02	.02
$\eta^2$						.48
-18						
$\mu$	.65	.63	.71	.64	.61	.64
$\theta$	.03	.03	.05	.03	.03	.04
$\eta^2$						.48
Mobil.						
$\mu$	.45	.59	.48	.49	.50	.50
$\theta$	.06	.08	.08	.08	.05	.08
$\eta^2$						.31

TABLE 4 -- Continued

	DISTRICT TYPE					Totals
	I Manu- factur- ing	II Pros- perous- growth	III Popu- lation Center	IV Unde- veloped	V Unde- veloped- deprived	
Priv. Ed.						
$\mu$	.22	.14	.28	.09	.04	.15
$\theta$	.11	.07	.12	.07	.05	.12
$\eta^2$						.45
Illit.						
$\mu$	.06	.06	.10	.07	.18	.09
$\theta$	.02	.03	.04	.04	.05	.06
$\eta^2$						.64
Coll. Ed.						
$\mu$	.07	.11	.07	.06	.06	.07
$\theta$	.02	.03	.05	.02	.02	.03
$\eta^2$						.33
Low Inc.						
$\mu$	.08	.08	.10	.17	.27	.14
$\theta$	.03	.03	.04	.06	.08	.09
$\eta^2$						.69
High Inc.						
$\mu$	.05	.07	.05	.03	.02	.04
$\theta$	.02	.04	.05	.01	.01	.03
$\eta^2$						.31
Ineq.						
$\mu$	.32	.34	.35	.37	.41	.36
$\theta$	.02	.04	.04	.03	.03	.04
$\eta^2$						.57
Unempl.						
$\mu$	.05	.04	.07	.05	.06	.05
$\theta$	.02	.02	.02	.02	.02	.02
$\eta^2$						.08

TABLE 4 -- Continued

	I	II	DISTRICT III	TYPE IV	V	Totals
	Manu- factur- ing	Pros- perous- growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived	
Agric.						
$\mu$	.03	.03	.00	.16	.13	.07
$\theta$	.03	.03	.00	.08	.08	.08
$\eta^2$						.54
Manuf.						
$\mu$	.36	.23	.29	.18	.23	.27
$\theta$	.06	.09	.07	.08	.09	.11
$\eta^2$						.44
Wht. Col.						
$\mu$	.41	.49	.43	.36	.32	.40
$\theta$	.06	.07	.11	.04	.05	.08
$\eta^2$						.45
Own. Occ.						
$\mu$	.67	.67	.28	.69	.60	.62
$\theta$	.09	.10	.15	.05	.07	.15
$\eta^2$						.65
Crowd.						
$\mu$	.08	.11	.12	.12	.19	.12
$\theta$	.02	.05	.05	.03	.04	.05
$\eta^2$						.53

variance. This statistic is known as  $\eta^2$ , or the squared correlation ratio. Note that the higher the value of the squared correlation ratio the greater the homogeneity of the types.<sup>51</sup>

Second, in order to interpret the inductively derived typologies and to relate them to more traditional modes of district classification, the types were cross-classified with three "traditional" groupings. The results are given in Table 5. The first traditional typology is a simple urban-rural dichotomy. Districts are classified as urban if more than 50 per cent of their inhabitants resided in urban places in 1960, and as rural otherwise. The second typology is a more complex classification scheme devised by the Congressional Quarterly Service, which categorizes districts as urban, suburban, rural, or mixed.<sup>52</sup> Finally, a regional typology is considered in which districts are classified as Northeastern, Midwestern, Border, Southern, and Western.<sup>53</sup>

A third more impressionistic tactic used in interpreting inductive types was to examine the locations of districts in each type. In this the maps found in the Congressional District Data Book proved helpful, as did the capsule descriptions of district locations provided by Congressional Quarterly.<sup>54</sup>

Type I: Manufacturing Districts. Type One, with 136 districts, is the largest of the five clusters. Districts in this type will be designated as "Manufacturing" districts, since the average district in the type has 36 per cent of its labor force employed in manufacturing, a figure which is easily the highest of any of the types. Type One districts, predominantly

TABLE 5

CROSS-CLASSIFICATION OF INDUCTIVE TYPOLOGY  
 WITH THREE "TRADITIONAL" AREAL  
 CLASSIFICATION SCHEMES, BY COLUMN PERCENTAGES  
 (N's in Parentheses)

	INDUCTIVE TYPOLOGY					Totals
	I Manu- factur- ing	II Pros- perous- growth	III Popu- lation Center	IV Unde- veloped	V De- veloped deprived	
Urban-rural						
Typology						
Urban	86(117)	99(79)	100(42)	45(42)	30(25)	70(305)
Rural	14( 19)	1( 1)	0( 0)	55(52)	70(58)	30(130)
Totals	100(136)	100(80)	100(42)	100(94)	100(83)	100(435)
Congressional						
Quarterly						
Service						
Typology						
Urban	24( 33)	29(23)	95(40)	2( 2)	6( 5)	24(103)
Suburban	16( 22)	33(26)	5( 2)	1( 1)	0( 0)	12( 51)
Rural	32( 44)	9( 7)	0( 0)	88(83)	83(69)	47(203)
Mixed	27( 37)	30(24)	0( 0)	9( 8)	11( 9)	18( 78)
Totals	100(136)	100(80)	100(42)	100(94)	100(83)	100(435)
Sectional						
Typology						
Northeast	52( 71)	11( 9)	60(25)	3( 3)	0( 0)	25(108)
Border	4( 5)	10( 8)	5( 2)	17(16)	7( 6)	9( 37)
South	0( 0)	20(16)	0( 0)	16(15)	90(75)	24(106)
Midwest	37( 50)	18(14)	24(10)	44(41)	9( 0)	26(115)
West	7( 10)	41(33)	12( 5)	20(19)	2( 2)	16( 69)
Totals	100(136)	100(80)	100(42)	100(94)	100(83)	100(435)

located in the Northeast and the Midwest, are for the most part not found in this country's great metropolitan areas, but rather contain one or more cities of moderately large size, such as Trenton, New Jersey (1960 population: 34,913); Newburgh, New York (30,979); and New Haven, Connecticut (152,048).<sup>55</sup> Though on the whole of only medium population density, the bulk of districts in Type One are classified as "urban" according to the Census Bureau's "urban place" criterion. Congressional Quarterly's typology classifies many districts in this type as suburban or rural, a fact which points up some of the weaknesses of this classification scheme. At least some of the suburban districts included in this category (for example, the districts encompassing Camden, New Jersey and East St. Louis, Illinois) do not closely resemble the usual image connoted by the term "suburb." Among the "rural" districts included here are the Sixth District of Wisconsin (embracing Sheboygan and Oshkosh and having 40 per cent of its labor force employed in manufacturing) and the Eighth District in the same state (which includes Green Bay and has 33 per cent of its labor force employed in manufacturing).

Aside from its industrial character, an outstanding feature of Type One districts is their relative lack of economic inequality. The mean Gini index of Type One districts is only .32, the lowest of any type. This seems to result from a combination of about average levels of extreme affluence (the type differs by less than 2 per cent from the average for all districts in white collar employment, college educated persons, and families with income of \$15,000 or more per annum) together with lower than

average extreme poverty. (This is the lowest of all types in overcrowding, and is tied with Type Two for smallest proportion of technical illiterates and families with less than \$2,000 per annum income.)

Demographically, Type One districts have, on the average, high concentrations of persons of foreign stock and Catholics. The exodus of Blacks from the South during the 1950s, however, seems to have largely bypassed Type One, which averages less than half as many Blacks as does the average district in the nation as a whole. More generally, Type One districts seem to have experienced below average in-migration during the years prior to 1960.

Type II: Prosperous-growth Districts. Type Two districts are well dispersed regionally, though a disproportionate number are found in the West. Northwestern and Midwestern districts in Type Two are composed for the most part of high status areas on the fringes of the nation's large metropolitan areas (for example, Nassau and Westchester counties in New York). Southern Type Two districts are located primarily in the peripheral South. Six such districts are in Florida and five in Texas. The district which includes Atlanta, Georgia is also found in Type Two. Of the thirty-three Western districts in Type Two, no less than twenty are found in California.

Two major qualities distinguish most of the districts in this type: rapid population growth and a high level of affluence. Type Two districts will, therefore, be classified as "Prosperous-growth" districts. The geographic distribution of districts noted in the last paragraph reflects

the shift of population in the United States during the 1950s to the West and to certain parts of the South and, within geographic regions, away from both "rural" and inner-city areas toward "suburban" locations. The mean growth rate of Type Two districts (72 per cent) was more than three times that experienced by the nation as a whole. Type Two had, on the whole, fewer elderly persons than did any other type.

More than any other, Type Two enjoyed a high degree of prosperity at the time of the 1960 Census, leading all types in per cent college educated, per cent in white collar occupations, and proportion of families with annual incomes of \$15,000 or more, and suffered somewhat less unemployment than any other type.

Type III: Population Center Districts. Type Three, with forty-two districts, comes remarkably close to fitting Louis Wirth's classic definition of urbanism as consisting of size, density, and heterogeneity.<sup>56</sup> Without exception, all districts in this type are located in or near very large metropolitan areas. Just one-half are in either the Greater New York or Chicago areas. Other areas represented here include parts of Boston, Baltimore, Detroit, Cleveland, Los Angeles, San Francisco, and all of Pittsburgh.<sup>57</sup>

Perhaps the most outstanding feature of Type Three is its concentration of population. The average district in the type contains over 28,000 persons per square mile, more than seven times that of the average for all districts. Only 28 per cent of housing in this composite of Type Three districts are owner occupied, a figure which is more than doubled

by each of the other types. Because of their extremely high mean density, Type Three districts will be designated as "Population Center" districts.

As to heterogeneity, Type Three has a higher proportion of persons of foreign stock and more Catholics than any other type, and in proportion of Blacks is surpassed only by Type Five.

A few other facts about Type Three deserve comment. Perhaps somewhat surprisingly, employment in manufacturing is only slightly above the average for all districts, undoubtedly reflecting the fact that America's largest cities have reached a "post industrial" phase of development, with high levels of employment in tertiary industries (no indicators of which were included in this study).

Many of the districts in Type Three score high on deprivation or include very deprived areas within their boundaries, and many of the nation's largest ghettos fall in such districts. It would be a mistake, however, to categorize Type Three districts in general as areas of poverty. In New York, both the Seventeenth (the "silk stocking") District and the Eighteenth District in Harlem are in Type Three.

On balance, Type Three districts stand out as far as age composition is concerned. The average of this type for proportion of population under eighteen years of age is lower than that of any other type. Types Three and Four are tied for highest average proportion of elderly residents.

Finally, it might be noted that Type Three was the only type to register an absolute loss of population during the 1950s. At the same time,

population mobility was only a little below average. These indicators of a combination of population turnover together with little net population change coincide with the popular image of the inner core of large metropolitan areas during this period.

Type IV: Undeveloped Districts. Type Four districts are heavily concentrated in the Midwest, and also show strength in Border states, in the peripheral South, and in the Rocky Mountain section of the West. By almost any definition of the term (except by the "urban places" criterion), it is the most "rural" of all types, with very low population density, very little manufacturing, and much agriculture. All but a few districts in this type are located outside of Standard Metropolitan Statistical Areas and, even by the "urban places" criterion, most are classified as rural. Type Four districts will, therefore, be designated as "Undeveloped" districts.

Population in Type Four districts, which experienced relatively little growth in the 1950s, is very homogenous, consisting of proportionately few Blacks, Catholics, or persons of foreign stock. Type Four districts are not outstandingly prosperous, but neither do they tend, in general, to be areas of extreme poverty.<sup>58</sup> Elderly persons are somewhat overrepresented in this type.

Type V: Undeveloped-deprived Districts. Type Five districts are located primarily in the deep South, including all of Mississippi, Louisiana, Alabama, and South Carolina, plus all of North Carolina but the Greensboro-Durham-High Point area, all of Georgia but the Atlanta area, and all of Tennessee but the Nashville area.

In some respects Type Five closely resembles Type Four, but by most measures is somewhat less "rural." The strongest factor differentiating the two types is the extreme poverty of districts in Type Five. Whereas Type Four districts average only 7 per cent technical illiteracy, compared to 9 per cent for all districts, Type Five districts average 18 per cent, easily the highest of any type and twice the nationwide average. Type Five districts also score lowest in per cent of labor force in white collar occupations, highest in proportion of families with annual income under \$2,000, and highest in economic inequality. Type Five districts will be designated as "Undeveloped-deprived."

It is interesting to note that, despite their sparse density, Type Five districts evidence considerable overcrowding in housing conditions, leading all other types by a wide margin in this category. Also, despite the nationwide high negative correlation between density and owner occupancy of housing, Type Five districts are below average on the latter variable.

Even more than Type Four districts, Type Five districts have few Catholics and few persons of foreign stock. The latter type, however, leads all others in its proportion of Black residents. Despite their low mean growth rate, Type Five populations tend to be younger than average, having the highest proportion of persons under eighteen years of age of any type, and a proportion of elderly persons exceeded by all groups but Type Two.

All of the above descriptions and labels must be viewed with considerable caution. They constitute attempts to make generalizations about each group as a whole and it must be emphasized that these generalizations may be more or less inaccurate when applied to a given group member. Conversely, a member of one group may have many of the characteristics of a group other than that to which it has been assigned.

Overall, the district typology presented here succeeds moderately well in meeting the stated objective of classifying districts into homogeneous groups. The error sum of squares presented earlier shows that the five types are differentiated by 51 per cent of the total variance in the eight weighted principal components. Somewhat more meaningful figures can be derived by averaging the  $\eta^2$  coefficients in Table 4. When this is done it can be seen that the types account for an average of 40 per cent of the total variance in the six constituency factors and, most important, for 47 per cent of the variance in the nineteen individual characteristics. These figures indicate a considerable loss of information from that contained in the original data but, after all, reduction of 435 categories to five represents no little increase in parsimony, and it is to be expected that a price must be paid for this gain. It is to be hoped that future research will be able to improve on these results, but it is likely that in large measure the failure to produce more homogeneous groups is due to the fact that congressional districts simply do not fall into neat clusters, and that the universe with which the student of congressional constituencies deals is a complex and inelegant one.

At the same time, it must be made clear what the typology presented in this chapter does not accomplish. The procedures followed are designed to maximize inter-type differences in constituency attributes. From this it does not follow that the resulting grouping will maximize differences on any other variable, such as constituency electoral behavior, or legislator roll call behavior. This fact does not necessarily detract from the typology's value, for political similarities among constituency types may be as important as differences. For example, conventional wisdom holds that both "suburban" and "rural" areas produce conservative political behavior, though the two are usually thought of as being quite different in social, economic, and demographic attributes. If two very different kinds of constituency produce similar patterns of politics, this fact is as worthy of investigation and explanation as any political differences that a comparison of constituency might uncover. Thus the typology developed here differs in its purpose from the cluster-bloc analysis of legislative behavior cited earlier, since the two approaches, while methodologically similar, differ in the criterion used to define homogeneity.

Before concluding this chapter, a few further comments are necessary concerning the relationship between the typology developed here and traditional areal classification schemes. In the first place, as indicated in Table 5, the types derived inductively in the present analysis do bear some relationship to the types found in traditional deductive classification schemes. Manufacturing districts are generally located in the Northeast and urban Midwest. Most Prosperous-growth districts are

Western and many can be classified as suburban. Population Center districts are clearly metropolitan. Undeveloped districts are mostly rural and Midwestern, while Undeveloped-deprived districts are found primarily in the Deep South.

The correspondence of the two modes of classification is, however, only very rough and approximate. Further, each of the three traditional classification schemes presented in Table 5 compares unfavorably to the inductive procedure in terms of homogeneity. When the error sum of squares is computed for each of the deductive typologies, the following results are obtained: for the two-fold urban-rural typology -- 85 per cent of total variance on eight weighted principal components; for the four-fold Congressional Quarterly typology -- 75 per cent;<sup>59</sup> and for the five-fold sectional typology -- 71 per cent. It should be noted that in each case, this figure is clearly higher than that shown in Table 3 for comparable grouping levels of hierarchical clusters, even without refinement of the latter according to the procedure described above. These results bear out the argument advanced earlier in the chapter. On the one hand, they indicate that there is indeed some degree of validity in the use of urban-related and sectional typologies as "shorthand" variables. On the other hand, they confirm the need for systematic rather than intuitive methods of district classification. It is true, of course, that, had different deductive typologies been used for comparison, a closer correspondence to the inductive groupings might have been obtained, but this fact hardly detracts from the necessity for rigorous means of developing and evaluating classification schemes.

There is another way in which the results of the analysis carried out in this chapter may be relevant to the evaluation of traditional typologies. Most such groupings have contained only two or three classifications. The figures in Table 3 show that, at the three-group level, hierarchical clustering produces within-group heterogeneity amounting to about two-thirds of total variance in the weighted principal components. At the two-group level, over three-fourths of total variance is within-group. It is likely that, whether out of necessity or convenience, many future researchers will continue to rely on traditional modes of district classification. The figures just cited strongly indicate that in such situations even a minimum of prudence would suggest careful examination of whatever groups are used to insure that they in fact are differentiated by constituency characteristics and would argue for employment, if at all possible, of a classification scheme containing several categories.

Finally, it is necessary to consider a possible alternative to the notion advanced in the above pages that traditional areal classification schemes are best seen as ways of tapping complexes of more specific constituency attributes. While this might be true of much of the use of these classifications in past research, it is not clear that such is universally the case. Social scientists and others sometimes speak of distinctive "ways of life" associated with concepts such as urbanism, suburbism, or sectional location. It could be argued that these areal concepts incorporate historical and cultural factors that cannot be fully measured by characteristics contained in contemporary census reports, and that typolo-

gies derived from these characteristics, therefore, cannot adequately fulfill the function of traditional modes of classification. While plausible, this line of reasoning is subject to two objections.

In the first place, assuming that there are important cultural differences which are not measured by the various social, economic, and demographic attributes available from the census results, there is no very persuasive evidence available to indicate the nature of these differences, and still less to show that such differences bear any very close correspondence to urban-related and sectional areal typologies. At the present stage in the development of social scientific theory, it would, on the whole, seem far wiser to concentrate research efforts on typologies based on specific district attributes before attempting to deal with the rather vague notions suggested by a "way of life" approach.<sup>60</sup>

In the second place, the two alternatives are not as different as might at first appear to be the case. It is possible that certain district attributes interact in such a way that their combined political effect is different from the additive effect of the attributes considered by themselves. For example, the effect of income on liberalism might depend in part upon level of education. Hence, particular combinations of characteristics might produce political cultures quite different from those predicted by an additive model. Again, however, it would seem advisable to begin with an attribute approach to areal typology construction. If one can arrive at groupings which are homogeneous in terms of their attributes, one will have then isolated combinations of characteristics which occur frequently

and which are thus most likely to be the source of important interaction effects. Major discrepancies between actual political behavior and that predicted by an additive model might then provide clues as to the nature of such interactions.

In general, then, the position taken here will be that the "way of life" argument is at best somewhat premature. This position, however, must admit of at least one exception. There is considerable evidence to support the proposition that the Southeastern portion of the United States possesses unique cultural traditions growing out of and associated with a past history of slavery, devastation and defeat in the Civil War, and reconstruction after that war. This historical factor would be very difficult to measure through contemporary Census data and in fact may grossly distort the significance of much of these data. Thus, due to sectional attitudes, legal and illegal restrictions on political participation, and the one-party system, all deeply rooted in the South's history, "per cent Black" has in the South a political meaning which is in many ways diametrically opposite to its meaning outside the South. Similarly, organized labor is even weaker in the South than its numbers would indicate and, in general, Southern politics is felt by many expert observers to be more conservative than would be predicted solely on the basis of social, economic, and demographic attributes.<sup>61</sup>

On the other hand, the politics of the South is, of course, affected by its contemporary characteristics as well as by its historical traditions, and it is important to distinguish to the greatest extent possible

between the two influences. In order to take both into account, the analysis in the following two chapters will include, along with the study of district attributes and district types derived from these attributes, an attempt to measure the impact of Southern geographic location on the behavior of Congressmen and their constituents.

One other sectional variable will also be included in part of this study, not because it is as firmly grounded theoretically or empirically as is the Southern hypothesis, but because it has for so long been a matter of controversy. In the folklore of the discipline considerable attention has been given to the existence of "Midwestern isolationism." Therefore, when patterns of roll call voting on foreign policy are analyzed in Chapter V, an effort will be made to assess the effect of Midwestern location.

## NOTES FOR CHAPTER III

1

Heinz Eulau and Katherine Hinckley, "Legislative Institutions and Processes," in James A. Robinson, ed., Political Science Annual, I (Indianapolis, Ind.: Bobbs-Merrill, 1966).

2

See, for example, Dye, "A Comparison of Constituency Influences"; Leroy N. Rieselbach, "The Basis of Isolationist Behavior," Public Opinion Quarterly, XXIV (Winter, 1960), 645-657; Murray Clark Havens, City Versus Farm (University, Ala.: Bureau of Public Administration, University of Alabama, 1957); Andrain, "A Scale Analysis"; Wilder Crane, Jr., "A Caveat on Roll-Call Voting Studies of Party Voting," Midwest Journal of Political Science, IV (August, 1960), 237-249; Shannon, Party, Constituency and Congressional Voting; Flinn, "Party Responsibility in the States"; Vanderslik, "Constituency and Roll Call Voting."

3

For example, Havens, "Metropolitan Areas and Congress"; LeBlanc, "Voting in State Senates"; Gray and Gregory, "Military Spending and Senate Voting"; Wolfinger and Heifetz, "Power in Congress"; Ira Sharkansky, "Voting Behavior of Metropolitan Congressmen: Prospects for Changes with Reapportionment," Journal of Politics, XXVIII (November, 1966), 774-793; Thomas A. Flinn, "The Outline of Ohio Politics," Western Political Quarterly, XIII (September, 1960), 702-721. See also Julius Turner, Party and Constituency (Baltimore: Johns Hopkins Press, 1951), p. 74n; George L. Grassmuck, Sectional Biases in Congress on Foreign Policy (Baltimore: Johns Hopkins Press, 1951), p. 109n.

4

Gray, "Coalition of Southern Democrats and Northern Republicans," p. 33; William C. Havard and Loren P. Beth, The Politics of Misrepresentation: Rural-Urban Conflict in the Florida Legislature (Baton Rouge: Louisiana State University Press, 1962), p. 15.

5

Robert S. Friedman, "The Urban-Rural Conflict Revisited," Western Political Quarterly, XIV (June, 1961), 486. For similar classification schemes, see Frank M. Bryan, "The Metamorphosis of a Rural

Legislature," Polity, I (Winter, 1968), 193n; Claris McDonald Davis, Legislative Malapportionment and Roll-Call Voting in Texas: 1961-1963 (Austin: Institute of Public Affairs, University of Texas, 1965), pp. 18-19.

6

Smith, "Isolationist Voting," p. 340.

7

V. O. Key, Jr., Public Opinion and American Democracy (New York: Alfred A. Knopf, 1961), pp. 283-286.

8

Congressional Quarterly Almanac 1956 (Washington, D. C.: Congressional Quarterly Service, 1956), p. 788.

9

Congressional Quarterly Weekly Report XX (February 2, 1962), pp. 153-169, and XXII (August 21, 1964), pp. 1784-1798; Hacker, Congressional Districting, pp. 80-83; Leo M. Snowiss, "Congressional Recruitment and Representation," American Political Science Review, LX (September, 1966), 628-634; Sheldon Goldman, Roll-Call Behavior in the Massachusetts House of Representatives: A Test of Selected Hypotheses (Amherst: Bureau of Governmental Research, University of Massachusetts, 1968), pp. 30-31, 38n.

10

For example, Grassmuck, Sectional Biases in Congress; Rieselbach, The Roots of Isolationism, pp. 106-114; Ralph H. Smuckler, "The Region of Isolationism," American Political Science Review, XLVII (1954), 386-401; Gerald Marwell, "Party, Region, and the Dimensions of Conflict in the House of Representatives, 1949-1954," American Political Science Review, LXI (June, 1967), 380-399; George Robert Boynton, "Southern Conservatism: Constituency Opinion and Congressional Voting," Public Opinion Quarterly, XXIX (Summer, 1965), 259-269; Leroy N. Rieselbach, "The Basis of Isolationist Behavior," Public Opinion Quarterly, XXIV (Winter, 1960), 645-657.

11

One early study, for example, employed nine sectional categories. See, Hannah Grace Roach, "Sectionalism in Congress (1870-1890)," American Political Science Review, XIX (August, 1925), 500-526.

12

See, for example, Flinn, "The Outline of Ohio Politics"; Friedman, "The Urban-Rural Conflict Revisited"; Havard and Beth, The Politics of Misrepresentation; Havens, City Versus Farm.

13

See, for example, Derge, "Metropolitan and Outstate Alignments"; Derge, "Urban-Rural Conflict"; Friedman, "The Urban-Rural Conflict Revisited"; Havens, City Versus Farm; Davis, Legislative Malapportionment and Roll Call Voting.

14

Even here, moreover, it is possible to counter these negative findings with other studies that have revealed urban-rural differences. See, for example, Murray C. Havens, "Metropolitan Areas and Congress"; Sharkansky, "Voting Behavior of Metropolitan Congressmen"; Julius Turner, Party and Constituency, chap. iv.

15

For attempts to deal with this problem, see Congressional Quarterly Weekly Report XX (February 2, 1962), 153-169, and XXII (August 21, 1964), 1784-1798; Hacker, Congressional Districting, pp. 80 ff.

16

Jeffrey K. Hadden, "Use of Ad Hoc Definitions," in Edgar F. Borgatta, ed., Sociological Methodology 1969 (San Francisco: Jossey-Bass, 1969), pp. 277-278.

17

Richard Dewey, "The Rural-Urban Continuum: Real But Relatively Unimportant," American Journal of Sociology, LXVI (July, 1960), pp. 60-61.

18

Richard A. Kurtz and Joanne B. Eicher, "Fringe and Suburb: A Confusion of Concepts," Social Forces, XXXVII (October, 1958), pp. 32-37.

19

Henry S. Shryock, Jr., "Population Redistribution Within Metropolitan Areas: Evaluation of Research," Social Forces, XXXV (December, 1956), p. 155 (emphasis in original). These sentiments are echoed in a more recent article by Hadden, who comments that "the concept suburb remains largely undefined and at best ambiguously conceptualized" and concludes that "in short, ecologists have contrived a concept that is operationally convenient, but its meaning is conceptually questionable." See his "Use of Ad Hoc Definitions," pp. 277, 280 (emphasis in original).

20

Smith, "Isolationist Voting," pp. 367-368.

- 21 Philip M. Hauser, "Observations on the Urban-Folk and Urban-Rural Dichotomies as Forms of Western Ethnocentrism," in Philip M. Hauser and Leo F. Schnore, eds., The Study of Urbanization (New York: Wiley, 1965), p. 514.
- 22 Eulau and Hinckley, "Legislative Institutions and Processes."
- 23 Friedman, "The Urban-Rural Conflict Revisited," pp. 485, 492.
- 24 Smith, "Isolationist Voting," p. 340.
- 25 V. O. Key, American State Politics (New York: Knopf, 1956), p. 230.
- 26 Noel P. Gist and Sylvia Fleis Fava, Urban Society, 5th ed. (New York: Thomas Y. Crowell Company, 1964), p. 40.
- 27 Friedman, "The Urban-Rural Conflict Revisited," p. 481.
- 28 Gerald Marwell, "Party, Region, and the Dimensions of Conflict," p. 396.
- 29 Turner, Party and Constituency, p. 128.
- 30 A few users of traditional areal typologies do take pains to demonstrate that their types in fact differ in their characteristics. See Eulau, "The Ecological Basis of Party Systems," pp. 128-129; Snowiss, "Congressional Recruitment and Representation," p. 629.
- 31 Stuart A. Rice, "The Identification of Blocs in Small Political Bodies," American Political Science Review XXI (August, 1927), 619-627.
- 32 For more recent applications, see: David Bicknell Truman, The Congressional Party: A Case Study (New York: Wiley, 1959); Leroy N. Rieselbach, "Quantitative Techniques for Studying Voting Behavior in the United Nations General Assembly," International Organization, XIV

(Spring, 1960), 291-306; Arend Lijphart, "The Analysis of Bloc Voting in the General Assembly," American Political Science Review, LVII (December, 1963), 902-917; Bryan, "The Metamorphosis of a Rural Legislature." See also Duncan MacRae, Jr., Issues and Parties in Legislative Voting: Methods of Statistical Analysis (New York: Harper & Row, 1970).

33

For a non-technical introduction, see Robert R. Sokal, "Numerical Taxonomy," Scientific American, CCXV (December, 1966), 106-116.

34

Grumm, "The Systematic Analysis of Blocs."

35

Forrest E. Clements, "Use of Cluster Analysis with Anthropological Data," American Anthropologist, LVI (April, 1954), 180-199.

36

Joel Smith, "A Method for Classification of Areas on the Basis of Demographically Homogeneous Populations," American Sociological Review (April, 1954), 201-207. See also Peter Norman, "Third Survey of London Life and Labor: A New Typology of London Districts," in Mattai Dogan and Stein Rokkan, eds., Quantitative Ecological Analysis in the Social Sciences (Cambridge: Massachusetts Institute of Technology Press, 1969), pp. 371-396.

37

Robert C. Tryon, Identification of Social Areas by Cluster Analysis: A General Method with an Application to the San Francisco Bay Area, University of California Publications in Psychology, VII (1955), 1-100. Tryon's work is closely related to the better known Shevky-Bell approach. See Eshref Shevky and Wendell Bell, Social Area Analysis: Theory, Illustrative Application and Computational Procedures (Stanford: Stanford University Press, 1955).

38

C. A. Moser and Wolf Scott, British Towns (Edinburgh: Oliver & Boyd, Ltd., 1961); Richard L. Forstall, "A New Social and Economic Grouping of Cities," The Municipal Yearbook 1970, pp. 102-170; Lawrence R. Alschuler, "Political Participation and Urbanization in Mexico" (Ph.D. dissertation, Northwestern University, 1967), chap. ix; Kenneth J. Jones and Wyatt C. Jones, "Toward a Typology of American Cities," Journal of Regional Science, X (1970), 217-224.

39

D. M. Ray and Brian J. L. Berry, "Multivariate Socio-Economic Regionalization: A Pilot Study in Central Canada," in T. Rymes and S. Ostry, eds., Regional Statistical Studies (Toronto: University of Toronto Press, 1965), pp. 1-48.

40

Margaret J. Hagood, "Statistical Methods for Delineation of Regions Applied to Data on Agriculture and Population," Social Forces, XXI (March, 1943), 287-297; Richard Lee Sutton, "Level of Development of State Environment and the Structure and Activities of State Planning and Development Organizations " (Ph.D. dissertation, University of North Carolina, 1970), chap. ii.

41

Bruce M. Russett, International Regions and the International System: A Study in Political Ecology (Chicago: Rand McNally & Company, 1967), chaps. i-iii; Arthur S. Banks and Phillip M. Gregg, "Grouping Political Systems: Q-Factor Analysis of a Cross-Polity Survey," American Behavioral Scientist, IX (November, 1965), 3-6.

42

The only exceptions that this writer was able to find involved operationally defining concepts such as urbanism in terms of a single attribute, or through simple cross-classification of at most two or three attributes. The best example is probably Edgar Litt, The Political Cultures of Massachusetts (Cambridge: Massachusetts Institute of Technology Press, 1965). Litt's typology has also been used by Goldman, who provides from personal correspondence with Litt the operational definitions used by the latter. See Goldman, Roll Call Behavior in Massachusetts, pp. 31-33, 70-74.

43

In general form, though not in all specifics, the outline followed here adheres closely to that set forth in Ray and Berry, "Multivariate Socio-Economic Regionalization."

44

Cf. Vincent, "Predicting Voting Patterns," pp. 476-479.

45

This is done so that the variance of the components will be proportionate to their respective eigenvalues, that is, to the proportion of variance in the original data matrix which they explain. Square roots are used since multiplying a set of numbers by a constant produces a new set of numbers with a variance equal to the variance of the original set times the square of the constant.

46

For more detailed descriptions of Ward's Method see Joe H. Ward, Jr., "Hierarchical Grouping to Optimize an Objective Function," Journal of the American Statistical Association, LVIII (March, 1963), 236-244; David Wishart, "An Algorithm for Hierarchical Classifications," Biometrics, XXV (March, 1969) 165-170. For application of the method see Joe H. Ward, Jr. and Marion Hook, "Application of an Hierarchical Grouping Procedure to a Problem of Grouping Profiles," Educational and Psychological Measurement, XXIII (Spring, 1963), 68-81; Russett, International Regions and the International System, pp. 49-58; Robert A. Young, "A Classification of Nations According to Foreign Policy Outputs," prepared for delivery at the sixty-sixth annual Meeting of the American Political Science Association, Biltmore Hotel, Los Angeles, California, September 8-12, 1970. A very similar algorithm is employed in Ray and Berry, "Multivariate Socio-Economic Regionalization."

47

Of the studies cited in the previous footnote, Young's study, which involves eighty-three nations, is the largest in terms of the number of objects grouped.

48

The version of the program employed in the present study is dimensioned for 1,000 cases and nine objects, and requires about 90,000 bytes of core storage. The program took 1.02 minutes of Central Processing Unit time of the University of Florida's IBM 360-65 to cluster the data described in the text.

49

This criticism is advanced by Russett, International Regions and the International System, p. 49.

50

Similar procedures for refining the results of hierarchical clustering have been suggested by Ray and Berry, "Multivariate Socio-Economic Regionalization" and by Brian J. L. Berry, "A Synthesis of Formal and Functional Regions Using a General Field Theory of Spatial Behavior," in Brian J. L. Berry and Duane F. Marble, eds., Spacial Analysis (Englewood Cliffs, N. J.: Prentice-Hall, 1967), pp. 419-428. See also Norman, "Third Survey of London Life and Labor" and Sutton, "Level of Development of State Environment."

51

Linton C. Freeman, Elementary Applied Statistics (New York: John Wiley and Sons, 1965), chap. xi.

52

In this typology, "urban" districts are those located predominantly in the center cities of Urbanized Areas plus thirteen satellite

cities with a population in excess of 100,000. "Suburban" districts are those located predominantly in the urban fringes of such center cities. Rural districts are those predominantly located outside of Urbanized Areas. Districts not predominantly located in any one type of area are classified as "Mixed."

53

The sectional breakdown made in this section is as follows:

- (1) Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.
- (4) Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin.
- (2) Border: Delaware, Kentucky, Maryland, Missouri, Oklahoma, West Virginia.
- (5) West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.
- (3) South: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia.

54

U. S. Bureau of the Census, Congressional District Data Book: Districts of the 88th Congress; Congressional Quarterly Weekly Report (August 21, 1964), pp. 1784-1798.

55

Type I bears a loose correspondence to "mid-urban" categories in typologies developed in Hacker, Congressional Districting, pp. 80-83 and in Congressional Quarterly Almanac 1956, p. 788.

56

Louis Wirth, "Urbanism as a Way of Life," American Journal of Sociology, XLIV (July, 1938), 1-24.

57

The only two districts in Type III not classified urban by the Congressional Quarterly Service are in northern New Jersey: the eleventh (Newark and vicinity) and the fourteenth (Jersey City).

58

Of the variables measuring socioeconomic status, the type differs most from the national average in proportion of low income families. This is, moreover, probably not a highly reliable statistic in this case since it does not take into account the value of producer-consumed farm goods.

59

This comparison is perhaps a bit unfair in the case of the Congressional Quarterly typology, since the "mixed" category used here actually combines several subcategories in the original typology.

60

Cf. Herbert J. Gans, "Urbanism and Suburbanism as Ways of Life: A Reevaluation of Definitions," in Arnold Rose, ed., Human Behavior and Social Processes (Boston: Houghton Mifflin Company, 1962), pp. 625-648.

61

V. O. Key, Southern Politics in State and Nation (New York: Vintage Books, 1949).

## CHAPTER IV

### LEGISLATIVE INPUTS: CONSTITUENCY AND THE SELECTION OF LEGISLATORS

In this chapter, an attempt will be made to study constituency environment with respect to selected aspects of the input side of the legislative process. The first portion of the chapter will examine the question of malapportionment in the Eighty-eighth Congress. The remainder of the chapter will be devoted to analysis, at the aggregate district level, of voter behavior in the 1962 congressional elections. Attention will focus on the questions of voter turnout, voter party preference, and inter-party competition.

On February 17, 1962, Mr. Justice Hugo Black, delivering the United States Supreme Court's decision in the case of Wesberry v. Sanders, declared it to be a requirement of the Federal Constitution that, "as nearly as is practicable one man's vote in a congressional election is to be worth as much as another's."<sup>1</sup> On this date, the Eighty-eighth Congress was in its second session. The district data for this Congress, therefore, provide an opportunity for examining patterns of malapportionment at the time that the Court's historic decision was rendered.

If politics is definable as "the authoritative allocation of values for society,"<sup>2</sup> then in studying the politics of malapportionment, it is

important to determine as methodically as possible just which segments of society receive other than a proportionate share in the "value" of representation. In the literature on malapportionment, discussion has usually been cast in terms of areal typologies. Researchers have described the over-representation of rural areas at the expense of the cities which existed at the time of the Court's reapportionment decisions, and have debated the possible impact or lack of impact of reapportionment on urban-rural conflict.<sup>3</sup> A number of observers have also described suburban under-representation, noting that the suburbs, rather than the cities, were the most severely under-represented in Congress and in state legislatures.<sup>4</sup>

Since these classifications are, as argued in the preceding chapter, at best rather imprecise, the above statements about them convey only rather impressionistic information about the kinds of districts which were under- or over-represented, or about the characteristics of their inhabitants. Employing the district typology developed in the third chapter, it should be possible to come closer to this goal than has been done through use of traditional modes of classification. Thus an attempt will be made to determine how well each of the five constituency types was represented in the Eighty-eighth Congress in proportion to its population.

While an examination of inter-type differences will reveal more precisely which kinds of districts received a disproportionate share of representation, it will uncover only in a general way the constituency attributes associated with malapportionment. The relationship of constituency attributes to malapportionment is a matter that with some exceptions<sup>5</sup>

seems to have received relatively little attention in previous research. In the present work, malapportionment will be correlated with the six constituency dimensions isolated in Chapter II and with the nineteen social, economic, and demographic characteristics from which they were derived.

The goal of this section is rather modest in that it will be confined to description rather than causal explanation. Correlations between malapportionment and the constituency attributes included in this study are quite likely to be "spurious" in terms of causal inference. For one thing, much of the inequality that existed among congressional districts in 1962 is traceable to secular shifts in population concentration<sup>6</sup> which are only indirectly related to most of the variables included in this study. For example, a finding that districts with high proportions of Catholic inhabitants were under-represented would not necessarily mean that state legislatures were guilty of purposeful religious discrimination, but more probably would be a function of population stability over a long period of time in heavily Protestant areas. Secondly, there is the problem of levels of analysis. It is important to distinguish the kind of inquiry conducted here from analysis in the field of comparative state politics of relationships between statewide attributes and severity of malapportionment in state legislatures.<sup>7</sup> In those studies the units to which malapportionment scores are assigned (that is, the states themselves) are the same as the units charged with the constitutional responsibility for carrying out legislative districting. When, as in the present study, the unit of analysis is the individual constituency, the situation is quite different. The adequacy of a given dis-

district's representation depends primarily not on the behavior of its inhabitants or their representatives, but upon the action or inaction of the legislature of the state in which the district is located. Analysis of individual constituencies' characteristics, therefore, can show which elements of the population are discriminated against, but cannot provide a great deal of information about the causes of such discrimination. Hence causal inferences, and techniques appropriate to causal inference such as regression analysis, will not be attempted; the objective pursued will be simply to describe as fully as possible the relative degree of representation in Congress enjoyed by various segments of society.

Apportionment is a many-faceted problem that could be approached from several perspectives: gerrymandering, multiple-member versus single-member districting, and so on. However, while recognizing that it is not the only, nor even the most important, aspect of malapportionment, the present inquiry will be confined solely to analysis of purely numerical inequality in representation.

The index of malapportionment used will be the ratio of each district's population to the average population of all 435 districts. Thus the higher the index score the less well represented the district, with a score of one indicating representation proportionate to population. In the case of states which in the Eighty-eighth Congress elected some or all of their representatives at large, it is necessary to modify this ratio in order that citizens of such states not artificially appear to be under-represented.

This adjustment is quite straightforward for the at-large districts themselves. The population of such a district is simply divided by the total number of seats allotted to the state in which the district is located. The malapportionment index can then be computed. For non-at-large districts, the modification is only a bit more complex. In such cases the population of the district is adjusted by dividing it by the fraction of seats in the district's state which are not elected at large.

A number of objections could be voiced against this method of measuring representation. For one thing, some inequality will be produced simply as a result of the fact the United States Constitution requires that districts be apportioned by state and that each state receive at least one representative. On the other hand, except for the inequality just cited, it is obvious that no numerical inequality will exist among at-large districts.<sup>8</sup> More generally, when district types are compared, no inequality will appear within a state in which all districts are of the same type. An examination of the appendix will reveal that a large number of states are composed entirely or predominantly of a single type of congressional district.

The procedure adopted here seems defensible in view of the descriptive nature of the present inquiry. The goal of this section is to set forth the extent and nature of inter-constituency differences in representation, regardless of the factors causing or limiting such differences. Needless to say, any attempt to go beyond this goal and to carry out a causal analysis of malapportionment would have to begin by controlling for essentially trivial causal factors such as outlined above.

Table 6 shows, for each district type, the mean malapportionment score and the standard deviation of that score within the type. The table gives the same information for all 435 districts taken together. At the bottom of the table, the  $\eta^2$  coefficient is given. As noted in the previous chapter, this coefficient, also known as the squared correlation ratio, is computed by dividing between-group variance by total variance, thus measuring the proportion of variance in a dependent variable (in this case, malapportionment) explained by a nominal classification scheme. It should be pointed out that the value of the coefficient depends in part on the number of categories in the independent variable. Hence the ratio set forth here applies only to the five-fold typology selected for analysis. Had a different number of district types been selected, a different ratio would of course have been obtained.

The table indicates that the most under-represented type is the Prosperous-growth district, with a mean population which is 15 per cent above the national average. The most over-represented type is the Undeveloped district, with a mean population 12 per cent under the national average. Population Center districts and Undeveloped-deprived districts are also over-represented, though to a lesser degree, while Manufacturing districts are slightly under-represented.

Another way of looking at these data is to compute the number of seats in Congress that each type would have if each were assigned seats in proportion to its total population (as adjusted above), and to compare this figure with the number of seats actually held by each type.

TABLE 6

## MALAPPORTIONMENT SCORES, BY DISTRICT TYPE

	DISTRICT TYPE					
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- Deprived	All Dis- tricts
Malapportion- ment scores						
$\mu$	1.03	1.15	.93	.88	.95	1.00
$\sigma$	.21	.28	.17	.19	.22	.23
$\eta^2$						.16

TABLE 7

## REPRESENTATION STRENGTH OF DISTRICT TYPES

## ACTUAL VERSUS PROPORTIONATE

	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- Deprived
No. of seats					
Actual	136	80	42	94	83
Proportionate	140	93	39	84	79
Gain or Loss	+4	+13	-3	-10	-4

TABLE 8  
CORRELATIONS OF MALAPPORTIONMENT SCORES  
WITH CONSTITUENCY ATTRIBUTES

A. FACTORS

Deprivation	-.09
Affluence	.33
Home Ownership	.05
Industrialization	.15
SFC	-.18
Dynamism	.15

B. INDIVIDUAL CHARACTERISTICS

Pop. Gro.	.29
Density	-.02
Black	-.07
For. Stk.	.06
65+	-.28
-18	.06
Mobil.	.19
Priv. Ed.	.14
Illit.	-.17
Coll. Ed.	.31
Low Inc.	-.28
High Inc.	.25
Ineq.	-.16
Unempl.	-.28
Agric.	-.24
Manuf.	.10
Wht. Col.	.35
Own. Occ.	.08
Crowd.	-.11

This information is shown in Table 7. The table indicates that a net total of seventeen changes in group strength would have resulted from such a hypothetical reapportionment. Most of those changes would have taken the form of gains by Prosperous-growth districts (with thirteen additional seats) at the expense of Undeveloped districts (which would have lost ten seats). Gains and losses among the other types would have been relatively small.<sup>9</sup>

It should be noted that the differences discussed so far are generally not very dramatic. One widely accepted guideline for judging equality in representation suggests that deviation in population of up to 15 per cent from the mean district population might be considered acceptable.<sup>10</sup> Using this rule of thumb, it can be seen from Table 6 that, despite very great disparities in representation among many individual districts, only one type as a whole deviates from the mean by as much as 15 per cent, and just barely so. Table 7 shows that, while the actual strength in Congress of two district types differs by a fairly sizable margin from what might be expected on the basis of population, relatively few seats overall would have changed hands among types under a "one man-one vote" apportionment formula.

An even clearer indication of the relative lack of inter-type differences in malapportionment is the low  $\eta^2$  coefficient of .16 shown in Table 6. This figure, which is analagous to a Pearson  $r$  of .40 for associations between interval level measures, indicates that only 16 per cent of the variance in malapportionment is inter-type variance.

This is not to say, of course, that the inequalities shown in the tables are not politically significant. Certainly the over-representation of Un-developed districts and the lack of proportionate representation of Prosperous-growth areas might easily be so classified. The point being made here is simply that, as a whole, the constituency typology does not sharply differentiate districts with respect to malapportionment.

In part this lack of differentiation among groups is due to the fact that, as noted earlier, many states are comprised predominantly or entirely of one type of district. To the extent that states are internally homogeneous with respect to district type, variance in malapportionment will of necessity be within-group, except for that malapportionment resulting from constitutionally mandated apportioning procedures.

Another reason for the relatively small inter-type differences is revealed by the data in Table 8. This table shows, for each constituency factor and individual characteristic, the zero-order correlation of that factor or characteristic with malapportionment. All of the correlations shown are low or at most of moderate size, with the highest being only .35.

This finding of relatively slight associations between malapportionment and a variety of social, economic, and demographic measures has important normative implications. Much of the drive for more equal apportionment during the 1950s and early 1960s was based on the assumption that malapportionment served to discriminate against certain segments of society by denying them a fair share of legislative representation. The data presented here suggest that, at least for the districts of the Eighty-

eighth Congress, this is true to only a very limited degree. Whatever the inequalities suffered by some districts, in the Congress as a whole no truly striking differences occur, whether constituency is described in terms of types, attribute dimensions, or individual attributes. Such a finding complements the conclusions of a number of researchers, at both the national and state levels, who have treated malapportionment as an independent variable and have found it not to be an important causal factor in determining outputs of the political system.<sup>11</sup>

Such associations as are found in Table 8 show that it is the more affluent districts, that is, those whose residents might in other respects be expected to possess the greatest potential political power, who fair worst in terms of representation in Congress. Conversely, districts with high proportions of low income families and/or high rates of unemployment tend to fair well. This pattern has been noted by other observers, and has sometimes been used as a defense for malapportionment practices.<sup>12</sup> Districts with proportionately high numbers of elderly residents also tend to be well represented.

The table also indicates that population growth has one of the higher correlations shown. This is hardly surprising since much of malapportionment was the result of inertia on the part of state legislative bodies which failed to redistrict congressional delegations despite population shifts. The fact that the correlation is not considerably higher than it is suggests that in examining the roots of malapportionment one must look for relatively early migration and natural growth patterns not closely associated with those occurring during the 1950s.<sup>13</sup>

The figures in Tables 6 through 8 suggest the difficulty of explaining patterns of malapportionment in terms of traditional urbanism concepts. This is noteworthy since so much of the literature on malapportionment has been cast in terms of urban-rural conflict. Agriculture is directly related to over-representation, but the correlation is not high. Other attributes that might be considered to be conceptually related to urbanism or ruralism show even lower associations with malapportionment. Comparisons among district types lead to similar conclusions. Undeveloped districts, which, as noted in Chapter III, constitute the most "rural" district type, are the most over-represented. The second most over-represented type, however, is the Population Center, which, as noted earlier, is most closely related to the classic definition of urbanism. On the other hand, those researchers who have viewed malapportionment in terms of "suburban" rather than "urban" under-representation come much closer to accurately portraying the situation found here, i.e., under-representation is related to high socioeconomic states and to districts in the Prosperous-growth type.

The remainder of this chapter will be devoted to an examination of the behavior of the electorate in the 1962 congressional elections. First, an analysis of levels of political participation will be made. Once this is completed, a study of patterns of party preference by voters and of inter-party competition will be undertaken.

While level of political participation and patterns of partisanship will be examined separately, it should be kept in mind that the two

are interrelated. If certain segments of the potential electorate are disfranchised, or fail to exercise their franchise, the relative strength of the Republican and Democratic parties, and hence also the degree of inter-party competition, may well be altered. Conversely, it is likely that voter turnout will be directly related to the perceived closeness of electoral outcomes. These considerations should be kept in mind especially with respect to analysis of electoral behavior in the South, where much of the Black population has been effectively disfranchised, where voter turnout even among whites is typically very low, and where inter-party competition has generally been lacking.

Previous research, at both the individual and aggregate levels, has demonstrated that differential levels of participation are associated with social, economic, and demographic variables similar or identical to those included in the present study. Research has also shown that turnout is higher in "urban" and "metropolitan" areas than in "rural" places, and considerable regional variation in turnout has also been noted. The present analysis will seek to add to this body of research<sup>14</sup> by relating level of turnout in the 1962 congressional elections to constituency dimensions and to individual constituency attributes, by comparing turnout in each of the five district types, and by examining the possible effect upon turnout of Southern political culture.

Table 9 shows the mean and standard deviation in voter turnout for each district type in the 1962 congressional elections. The clearest difference shown is that between Undeveloped-deprived districts and the

TABLE 9

## TURNOUT LEVELS, BY DISTRICT TYPE

	DISTRICT TYPES					
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- Deprived	All Dis- tricts
Turnout						
$\mu$	.57	.50	.45	.52	.23	.47
$\theta$	.08	.14	.09	.13	.12	.16
$\eta^2$						.53

remaining types. The mean turnout for districts in this type is less than one-half that for all districts averaged together. A gap almost this large separates this type from the next lowest group. As was the case with mal-apportionment, figures on turnout reveal nothing to suggest any kind of urban-rural continuum in voter participation. Turnout is, as noted, low in Undeveloped-deprived districts, but relatively high in Undeveloped districts; low in Population Center districts but high in Manufacturing districts.

Table 9 also indicates that on the whole the district typology does clearly differentiate among types with respect to turnout. This is shown both by the low standard deviations of the individual types compared to that for all districts taken together, and by the high  $\eta^2$  coefficient given in the table. This last figure, indicating that 53 per cent of the variance in turnout is accounted for by the district classification, is rather remarkable in view of the fact that in Chapter III an average  $\eta^2$  coefficient of .47 was found for those variables by which the types were defined.

Turning to the matter of the relationship between constituency attributes and turnout, Table 10 sets forth the zero-order Pearson correlation of turnout with each of the six constituency factors and nineteen individual characteristics. It is clear from this table that low turnout is closely related to poverty. The coefficient of  $-.74$  with the Deprivation factor is, in absolute value, almost four times as high as that for any other factor. Similar results are obtained for the individual characteristics. Low education, low income, inequality, crowding, and high proportions of Black

TABLE 10

CORRELATION OF TURNOUT SCORES  
WITH CONSTITUENCY ATTRIBUTES

A. FACTORS	
Deprivation	-.74
Affluence	.20
Home Ownership	.09
Industrialization	.15
SFC	.16
Dynamism	-.14
B. INDIVIDUAL CHARACTERISTICS	
Pop. Gro.	.18
Density	-.04
Black	-.65
For. Stk.	.49
65+	.21
-18	-.22
Mobil.	-.18
Priv. Ed.	.41
Illit.	-.25
Coll. Ed.	.23
Low Inc.	-.67
High Inc.	.33
Ineq.	-.65
Unempl.	.02
Agric.	-.25
Manuf.	.29
Wht. Col.	.37
Own. Occ.	.28
Crowd.	-.64

population all showed at least moderately high loadings in Deprivation in Chapter II and all have high negative correlations with turnout in Table 10. Of the remaining variables, the only ones with correlations as high as  $\pm .30$  are private elementary education, white collar occupation, and high family income.

Thus far, the analysis of turnout has preceded along the same lines as followed in studying malapportionment, and has been confined to simply describing overall associations with turnout of constituency attributes. In the remainder of this section, an attempt will be made to go beyond this descriptive analysis and to make tentative inferences about the causal relationships between turnout and constituency. The primary techniques used in this endeavor will be multiple correlation and regression and, in a more limited way, partial correlation.

Several cautions about the kind of causal analysis that will be attempted here should be clearly stated at the outset. In the first place, inquiry will be limited, with certain exceptions, to the "direct" effects of each constituency variable upon the dependent variable. No effort will be made to derive a full-fledged "causal model," which would include an analysis of the causal relationships among constituency characteristics. In the second place, analysis is rather severely limited by the nature of the data. Census data can provide no information about such things as the psychological linkages (for example, political efficacy or strength of party identification) between social, economic, and demographic characteristics and political behavior. A fuller analysis would doubtless show that

such relationships as will be discussed here actually represent very complex patterns of causation. Thirdly, it should be obvious that the aggregate nature of the data further limits the kinds of inferences that can appropriately be made. Because the unit of analysis of the present study is the congressional district, only comparisons of districts and not of individuals within districts are legitimate.<sup>15</sup> Fourth and finally, the statistical model employed in the present study requires assumptions of linearity and additivity in all relationships examined. Only a very limited attempt will be made to test these assumptions.

Table 11 sets forth the results of two multiple regression analyses.<sup>16</sup> In the first, turnout is regressed on the six constituency factors, and in the second, on the nineteen individual constituency characteristics. In the first equation all independent variables were entered into the equation simultaneously (that is, in multiple mode). It had originally been intended to do the same in the second equation, so that the effect of each independent variable could be isolated by controlling for the effects of all others. The results of such analysis proved to be very difficult to interpret, not only because so many controls were involved, but because a number of the individual characteristics are highly intercorrelated, and it did not prove feasible to try to separate out their effects. It was, therefore, decided to enter the individual characteristics into the equation in stepwise mode. The first characteristic to enter was that which had the highest correlation with the dependent variable. In subsequent steps, that characteristic was entered which had the highest correlation with the dependent

TABLE 11

REGRESSION OF TURNOUT SCORES ON  
CONSTITUENCY ATTRIBUTES

## A. FACTORS

R : .80

R<sup>2</sup>: .65

Variable	b	β
Deprivation	-.124	-.729
Affluence	.032	.193
Home Ownership	.015	.091
Industrialization	.016	.092
SFC	.026	.155
Population Dynamism	-.025	.147
(constant)	.471	

## B. INDIVIDUAL CHARACTERISTICS

\*R : .88

\*R<sup>2</sup>: .78

Variable		
Illit.	-1.526	-.551
For. Stk.	.310	.274
Own. Occ.	.189	.168
Unempl.	2.076	.227
Black	-.226	-.184
Mobil.	-.227	.122
(constant)	.456	

\* includes effects of all nineteen individual characteristics.

variable, controlling for those other characteristics already in the equation. The process was terminated with the last characteristic to contribute an additional 1 per cent or more to explained variance.

The regression coefficients shown in the second part of Table 11 are, therefore, those computed in the stepwise analysis. The multiple mode analysis, on the other hand, did explain a slightly greater proportion of variance in the dependent variable. Hence, the multiple correlation coefficient (R) and the squared multiple correlation coefficient are based on all nineteen individual characteristics in order to obtain the best possible estimate of the total effect of constituency.

A brief explanation of the information contained in the table may be useful. The "b" coefficients shown represent the slope between the dependent variable and each independent variable, controlling for all other variables in the equation. Slope is defined as the amount of change in the dependent variable expected for each increase of one unit of measurement in the independent variable. For example, the figure .310 next to "For. Stk." indicates that, for every increase of 1 per cent in a district's proportion of foreign stock population, voter turnout can be expected to increase by about three-tenths of 1 per cent, assuming no change in any of the other variables in the equation. The constant term at the base of the column of b coefficients represents the value of the dependent variable that would be predicted by the linear regression model if the values of all independent variables were set at zero.

The " $\beta$ " coefficients, like the  $b$  coefficients, represent the slopes between the dependent variable and each of the independent variables, but differ in that, for the  $\beta$  coefficients, the variance of all variables has been standardized. Thus the  $\beta$  of .274 for "For. Stk." indicates that an increase of one standard deviation in a district's foreign stock population can be expected, all else remaining equal, to result in an increase in turnout of a little more than one-fourth of one standard deviation.

Standardizing variance facilitates comparison of the relative importance of different independent variables for the same population, since results do not depend upon the unit of analysis employed. On the other hand, standardized indices of relationships such as  $\beta$  (and, incidentally, the correlation coefficient as well) can be misleading when the same variable is compared in different populations, since the amount of variance may differ in the two populations even though the causal relationship is the same. The  $b$  coefficient, since it is not standardized, does not suffer from this liability.<sup>17</sup>

Finally, Table 11 sets forth the multiple correlation and squared multiple correlation coefficients produced by multiple mode analysis of factors and individual characteristics. The multiple correlation coefficient shows the degree of association between the dependent variable and all independent variables taken together. When this figure is squared, it reflects the proportion of variance in the dependent variable explained by all of the independent variables.

Table 11 shows that, together, the six constituency factors account for 65 per cent of the variance in turnout, while all nineteen individual characteristics explain an additional 13 per cent of variance. It is obvious from these figures that the relationship between a district's social, economic, and demographic attributes, on the one hand, and its level of voter participation, on the other, is indeed quite close.

When one attempts to probe beneath this overall relationship to look for more specific determinants of political participation, one finds that, among constituency factors, Deprivation clearly dominates the results, with a  $\beta$  coefficient almost four times as large in absolute value as that of any other factor.<sup>18</sup> Among individual characteristics no single variable stands out as does the Deprivation factor, though technical illiteracy, which was shown in Chapter II to be closely related to the Deprivation factor, has easily the highest coefficient. Among the remaining characteristics foreign stock population, which is not very highly loaded on any single constituency factor, has the closest relationship to turnout.

Having examined the relationship between turnout and district types and attributes, there is one more aspect of constituency that remains to be examined. In Chapter III, it was suggested that political differences between the South and the rest of the country could plausibly be explained either in terms of current differences between the two sections in social, economic, and demographic attributes or, alternatively, in terms of cultural factors due, not to current characteristics, but to the disparate historical experiences of the South and the non-South. These two

hypotheses will appear in various forms in this and in the following chapter. In the present context they provide two different, though perhaps supplementary, means of attempting to account for inter-sectional differences in turnout.

The "cultural-historical" hypothesis would explain low turnout in the South as a function of historically rooted racial antipathies which have led to formal and informal restrictions on voting.<sup>19</sup> These restrictions have, in a pattern which has only now begun to crumble following passage of the 1965 Civil Rights Act, denied suffrage not only to most Blacks but to many poor whites as well. An alternative hypothesis, however, has been advanced by Froman. This author notes that the attributes of the South are precisely those that are negatively associated with political participation and suggests that much of the South's low turnout level can be explained simply as a function of such current attributes.<sup>20</sup> It is quite likely, of course, that both the "cultural-historical" and "current attributes" hypotheses are needed to fully explain the South's low voting participation, but the relative importance of the two proposed explanations has yet to be fully explored.

Table 12 compares turnout in Southern and non-Southern districts, and employs the same format as the earlier tables in which district types were compared. As expected, the table reveals sharp sectional differences in turnout. Outside the South voter turnout is proportionately almost two and one-half times as great as it is within the Old Confederacy. The squared correlation ratio at the bottom of the table shows that

TABLE 12

## TURNOUT LEVELS, BY SECTION

Turnout Level	SECTION		
	South	Non-South	All Districts
$\mu$	.24	.55	.47
$\theta$	.10	.10	.16
$\eta^2$			.65

approximately two-thirds of all variation in turnout is accounted for by the two-cell sectional classification. It must now be determined how much of this inter-sectional difference can be attributed to differences in constituency characteristics.

One way to approach this is to create a numerical measure of sectionalism by assigning scores of one to all Southern districts and of zero to all districts outside the South. The resulting index can then be entered into regression equations along with the other measures of constituency and the regression coefficients recomputed. Used in this way, the sectional variable becomes what is known in regression analysis as a "dummy" variable.<sup>21</sup> Table 13 sets forth the results of such analyses.

Using the figures found in Table 13 along with those of the previous two tables, it is possible to generate some additional information that will be useful in comparing sectional and attribute explanations of turnout. The squared multiple correlation coefficients in Table 13 express the proportion of variance in turnout explained by section and constituency attributes together, while those in Table 11 show the proportion of variance accounted for by constituency attributes alone. With these figures it is possible to calculate partial correlations between section and turnout, controlling for constituency attributes by using the following formula:  $r_{12 \cdot 3}^2 = R_{123}^2 - r_{13}^2 / 1 - r_{13}^2$  where  $R_{123}^2$  = the squared multiple correlation of turnout with constituency attributes and section;

$r_{13}^2$  = the squared multiple correlation of turnout with constituency

TABLE 13

## REGRESSION OF TURNOUT SCORES ON CONSTITUENCY

## ATTRIBUTES AND SECTION

## A. FACTORS

R : .88

R<sup>2</sup>: .77

Variable	b	$\beta$
Deprivation	-.059	-.345
Affluence	.025	.148
Home Ownership	.029	.173
Industrialization	.008	.047
SFC	.013	.076
Population Dynamism	-.013	-.079
South	-.208	-.545
(constant)	.522	

## B. INDIVIDUAL CHARACTERISTICS

\*R : .90

\*R<sup>2</sup>: .82

Variable	b	$\beta$
Illit.	-.793	-.286
For. Stk.	.222	.196
Own. Occ.	.258	.229
Unempl.	1.006	.110
Black	-.126	-.103
Mobil.	-.091	-.045
South	-.164	-.430
(constant)	.382	

\* includes effects of all nineteen individual characteristics.

attributes only, and

$r_{123}^2$  = the squared partial correlation between turnout and section controlling for constituency attributes.<sup>22</sup>

When constituency factors are controlled in this way, the results show that section explains 36 per cent of the variance in turnout. When all nineteen individual characteristics are controlled, section explains 18 per cent of the variance.

In a similar manner, it is possible to correlate attributes and turnout while controlling for section by substituting the squared correlation ratio from Table 12 for  $r_{13}^2$  in the above equation. When this is done, the resulting squared partial correlations between attributes and turnout are 35 and 43 for constituency factors and individual characteristics respectively.

The data presented in Table 13 and in the preceding three paragraphs provide a good deal of support for Froman's hypothesis. When the six constituency factors are controlled, the proportion of variance in turnout explained by dividing districts into Southern and non-Southern categories is reduced by almost one-half (from 67 to 36 per cent). When individual attributes are controlled, section alone accounts for only 18 per cent of variance.

Care should be taken, however, that this argument is not overstated. The  $\beta$  coefficients in Table 13 clearly show that section is more important in explaining turnout than any other constituency variable, whether factor or individual characteristic. Further, the partial correla-

tion between section and turnout, controlling for the six constituency factors, is higher than the combined partial for all six factors when section is controlled. Even the partial correlation between section and turnout, controlling for all nineteen individual constituency attributes, shows that sectional location is of some importance in explaining turnout even when the effects of other influences are held constant. Another way to look at this is to examine the b coefficients associated with sectional variables in Table 13. These show that a district located in the South can be expected to have a turnout of 20.8 per cent lower than a district in the non-South with identical scores on the six attribute factors, or 16.4 per cent lower than a non-South district with the six individual characteristics in the regression equation held constant.

Conversely, controls for section substantially reduce the explanatory power of district attributes. This can be seen both from the sharp reductions in variance explained by other constituency variables when section is partialled out, and from the reduction in the values of  $\beta$  coefficients for other variables when section is added to the regression equations. Thus it can be seen that much of the relationship between Deprivation and low turnout is a function of the fact that many poor districts are located in the South and, even apart from their poverty, are influenced by the South's traditions. At the same time it should be noted that even when section is controlled, Deprivation remains as the factor, and illiteracy as the individual characteristic, with the greatest effect on turnout. It should be noted in particular that extreme Deprivation

appears to have more to do with turnout than does a high level of wealth and status. This suggests that poverty forms a barrier to political participation but that once a certain threshold (the exact point of which is not measurable by means of the data at hand) is reached, subsequent increments in cultural enrichment bring about only comparatively small increases in participation. This suggestion must be advanced very tentatively, since none of the  $\beta$  coefficients in Table 13 indicate very strong relationships.

Perhaps the single most important conclusion to be drawn from this analysis so far is suggested by the fact that, when the effects of both section and of social, economic, and demographic variables are taken into account, it is possible to account for approximately four-fifths of the variance in turnout. Thus, neither the "characteristics" nor the "historical-cultural" approaches are, by themselves, adequate for understanding levels of participation by voters in the legislative process, but, rather, a full understanding requires that both be taken into account.

Before concluding this portion of the analysis, there is one other aspect of the sectional hypothesis that requires exploration. In addition to its direct effect upon political participation, it is also possible that section might influence participation more indirectly by altering the nature of the relationships between turnout and other variables. The situation in which the relationship between two variables depends upon the value of a third variable is known as interaction. This interaction hypothesis is tested in Table 14, in which regression analyses of relationships between attributes and turnout are carried out separately within each of the two sections.

The figures in the table indicate the different uses of standardized and unstandardized coefficients. In both the South and the non-South, the six constituency factors explain almost exactly the same proportion of variance in turnout. With one minor exception, however, the  $b$  coefficients associated with the factors are somewhat higher in the South than is the case outside that section. While these differences are far from striking, they show that a given difference in constituency attributes produces a greater difference in turnout level among Southern districts. There is no obvious explanation for this, but perhaps it indicates that in the South postwar economic and social changes have resulted in the breaking down of traditional patterns of political behavior resulting in new patterns closely tied to those changes. Outside the South, on the other hand, the effect of differences in attributes may be lessened by common exposure to the same mass media and other concomitants of a post-industrial society. This suggestion is advanced very cautiously, since the differences shown are relatively small and since there is evidence to be presented below indicating that interaction plays at most a minor role in the data at hand.

From the comparison in Table 14 of individual characteristics in the two sections, very little can be said to either support or refute Froman's hypothesis. Race, not surprisingly, appears to be more important within the South. Foreign stock population, on the other hand, appears to be of greater importance outside the South, probably because there are not enough non-natives in the South to be of significance in measuring aggregate political behavior. It should be noted that the fact that in the

TABLE 14

WITHIN-SECTION REGRESSION OF TURNOUT SCORES  
ON CONSTITUENCY ATTRIBUTES

## SOUTH

## 1. FACTORS

R : .62

R<sup>2</sup>: .38

Variable	b	β
Deprivation	-.070	-.459
Affluence	.036	.246
Home Ownership	.045	.184
Industrialization	.003	.030
SFC	.032	.358
Population Dynamism	-.036	-.325
(constant)	.332	

## 2. INDIVIDUAL CHARACTERISTICS

\*R : .75

\*R<sup>2</sup>: .56

Variable	b	β
Black	-.242	-.313
Age	.717	.251
Own. Occ.	.328	.218
High Inc.	2.556	.392
Wht. Col.	-.399	-.311
(constant)	.284	

## NON-SOUTH

## 1. FACTORS

R : .61

R<sup>2</sup>: .38

Variable	b	β
Deprivation	.057	.407
Affluence	.025	.276
Home Ownership	.028	.312
Industrialization	.011	.104
SFC	.006	.053
Population Dynamism	-.013	.138
(constant)	.522	

TABLE 14 -- Continued

## 2. INDIVIDUAL CHARACTERISTICS

\*R : .71

\*R<sup>2</sup>: .50

Variable	b	$\beta$
Illit.	-1.025	-.383
Own. Occ.	.304	.515
For. Stk.	.277	.386
Unempl.	1.047	.213
(constant)	.301	

\* includes effects of all nineteen individual characteristics.

South both high family income and white collar occupation enter the equation, but, in opposite directions, is largely artifactual. Results, not shown in the table, of the stepwise regression indicate that prior to entry of the white collar occupation variable, high income had a  $\beta$  coefficient of only .126. The anomalous figures in the table are due to the very high correlation between the two independent variables (a correlation within the South of .89). When indices are this closely related it is simply not feasible to attempt to distinguish between their effects.

The final task to be accomplished in this investigation of voter turnout will be to combine the results of the areal and attribute approaches analyzed in the preceding pages. In Chapter III it was noted that, because they represent frequently occurring clusters of district attributes, district types may provide access to important sources of interaction. The  $b$  coefficients in Table 13 provide a means of investigating this possibility. By taking these coefficients, along with the mean scores of each constituency type in each variable, one can compute the level of turnout predicted for each type by the regression equation and compare the results with the actual mean turnout levels set forth in Table 9.<sup>23</sup>

Doing so will supplement the earlier investigation of interaction between section and constituency characteristics, and will provide a test of the overall "goodness of fit" to the data of a linear, additive model of constituency variables, including section.

Table 15 presents a comparison of actual turnout levels in each district type with the levels predicted, first by the regression anal-

ysis based on constituency factors and section, then by the stepwise analysis of individual characteristics and section. In all cases, predicted results are virtually identical to actual participation levels. It can thus be concluded that whatever interactive (or curvilinear) effects are produced by constituency variables, they are clearly not revealed by the attribute clusters represented by the district types.

The final topics to be taken up in this chapter deal with the behavior of those constituents who actually did turn out to vote in the 1962 congressional elections. The two aspects of their behavior to be discussed are party preference and inter-party competition. Since these two subjects have frequently been confused in past research, they will be taken up together here.

For some years now, political scientists have been investigating the hypothesis that the degree of inter-party competition in a given area is dependent in part upon the area's social, economic, and demographic characteristics.<sup>24</sup> Unfortunately, such investigations have failed to yield consistent results and so, despite much effort, the issue is still to be satisfactorily resolved.

One major advance toward clearing up the confusion surrounding the problem was made in a recent article by Coulter and Gordon.<sup>25</sup> The authors point out several conceptual and methodological difficulties which they feel have produced the seemingly contradictory findings in the literature. Their most fundamental criticism is essentially that researchers have been asking the wrong question. In positing a linear relationship

TABLE 15

ACTUAL VS. PREDICTED TURNOUT,  
BY DISTRICT TYPE

	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived
Turnout Level					
Actual	.57	.51	.45	.51	.23
Predicted by factor equation	.57	.50	.45	.52	.23
Predicted by individual characteristic equation	.57	.51	.45	.51	.23

between "ecological" factors and competition, investigators have tended to overlook the obvious differences in the characteristics of one-party Democratic and one-party Republican areas. The authors ask,

Is it not more logical to hypothesize that as urbanization (and other ecological factors) increases so is party competition likely to increase, but only up to a point. And that past that point as the ecological factors continue to increase the electoral unit is likely to move into the one-party column again, i.e., from one-party Republican to Competitive to one-party Democratic? Past researchers surely must have been aware of this phenomenon which has occurred in counties in which large cities have developed (Cook County, Chicago: Wayne County, Detroit) but they were unable to examine this proposition because their basic hypothesis was incorrectly framed.<sup>26</sup>

The authors argue that constituency variables ought to be correlated with the per cent of the two-party vote obtained by one or the other party rather than with degree of inter-party competition and that such a simple re-formation of the research hypothesis could go a long way toward clearing up much of the confusion in the literature. The position taken here will be that Coulter and Gordon's argument has much to recommend it, but that their proposed solution is only partly satisfactory.

Coulter and Gordon are quite correct in pointing to the confusion that can arise between patterns of inter-party competition and patterns of party preference. By definition the former is a function of the latter. Not only is it always possible to uniquely determine any electoral unit's degree of inter-party competition in a given election by knowing its distribution of party preferences, but for a set of electoral units (such as a legislative body) party preference and inter-party competition will tend to be correlated whenever party preferences are unevenly divided between

the parties. The relationship between constituents' attributes and their party preferences has long been a subject of interest in its own right, and associations between the two have by now been well documented.<sup>27</sup> Thus it is possible that the whole question of the ecological basis of inter-party competition has been confounded by theoretically trivial correlations between inter-party competition and party preferences, correlations which fluctuate with the ebb and flow of party fortunes.

It would, however, be a mistake to conclude that correlations between constituency characteristics and inter-party competition are necessarily artifactual. The possibility of linkages between the two, apart from what might be caused by patterns of party preferences, ought not be prematurely excluded from consideration. For example, in an election in which, over all districts, the two parties were about evenly matched, one would not expect to find a substantial linear correlation between competition and party preference, but one might conceivably still find associations between the former variable and constituency characteristics. While Coulter and Gordon are correct in calling for a reformulation of the research hypothesis in order to avoid confusing party preference and inter-party competition, they are incorrect in inferring that this must be done by abandoning one variable in favor of the other. A better alternative is to consider both together.

Ironically, this conclusion was recognized by two of the earliest researchers in the field, Samuel Huntington and Heinz Eulau. Huntington used as his standard for measuring inter-party competition the average

vote garnered by the Democratic party in the districts he studied rather than a fifty-fifty division of the two-party vote.<sup>28</sup> Eulau dealt with the problem of what he called "party dominance" by selecting districts that had been predominantly Republican and those that had been predominantly Democratic and examining the relationships between urbanization and inter-party competition within each group.<sup>29</sup> Subsequent research, though in some ways much more methodologically sophisticated than these early efforts, has largely ignored the possible confounding effects of party dominance.

Following the lead of Huntington and Eulau, the present inquiry will examine constituency types and attributes with respect both to party preferences and to inter-party competition. The first portion of the analysis will focus on the relationship existing between constituency and party preference in the 1962 congressional elections. As mentioned earlier, the study of party preference, in addition to setting the stage for analysis of inter-party competition, is itself a matter of considerable importance. The procedures followed will be similar to those employed in studying turnout: district types will be compared, the impact of the various district dimensions and individual characteristics will be explored, and the possible effect of Southern regional political culture considered.

The second portion of the analysis will focus directly on inter-party competition. Initially, the overall degree of association between competition and constituency in the 1962 elections will be set forth. This is the basic procedure followed in most of the literature. Then, an attempt

will be made to determine whether or not these relationships are a function of party dominance. If the Coulter and Gordon hypothesis is correct, any relationships between inter-party competition and constituency ought to be explainable in terms of unequal electoral strengths of the two major parties. If, on the other hand, the "ecological base" hypothesis is correct, relationships will be found even when the effect of party dominance on inter-party competition is controlled.

Before presenting the results of the analysis, the possible impact of section must again be considered. As in the above discussion of section and voter turnout, both "cultural-historical" and "characteristics" explanations must be taken into account.

The loyalty of the South to the Democratic party clearly is in large measure due to sentiments rooted in the Civil War and Reconstruction periods. Even within the South traditional pockets of Republican strength can be traced back to loyalties inherited from those times.<sup>30</sup> This does not mean, however, that party preference in the South is not also influenced by current population characteristics, and the relative importance of these characteristics needs to be investigated.

V. O. Key and others have noted that the one-party system in the South has been maintained in part as a mechanism for preserving the political hegemony of whites in general, and of the Bourbons in particular.<sup>31</sup> Southern style racism and the manipulation of poor whites' racial antagonisms by wealthy whites are phenomena that cannot likely be explained entirely in terms of the South's present day characteristics. On the other

hand, Key's observations are not incompatible with the ecological-base hypothesis. The South is, by comparison with most of the rest of the country, "underdeveloped," that is, its characteristics of sparse population, agrarianism, low income and education, and so on, are precisely those cited in the literature as contributing to a lack of inter-party competition. Viewed in this light, the one-party system in the South might be seen as a specific manifestation of a more general phenomenon of control of electoral processes by elites in underdeveloped areas.

Tables 16 and 17 present comparative data on party preference for the five constituency types. Table 16 sets forth, for each type, the mean and standard deviation in the proportion of the two-party vote cast for Democratic candidates in the 1962 congressional elections, and the squared correlation ratio of the typology as a whole for this variable. Table 17 shows the percentage of seats won by each party in each district type. The latter table shows clearly the dominance of the Democratic party in Undeveloped-deprived districts. Democrats in this type garnered an average of over four-fifths of the two-party vote and won all but six of the type's eighty-three seats. Democratic dominance was almost as strong in Population Center districts, with an average of almost seven-tenths of the two-party vote, and all but three seats, going to the candidates of that party. These results are hardly surprising, and merely confirm the popular image of the Democratic party as the party of the "rural" South and of the center cities of large metropolitan areas. Only slight differences appear among the remaining three types, all of which on the

TABLE 16

DEMOCRATIC PROPORTION OF TWO-PARTY VOTE,  
BY DISTRICT TYPE

Democratic Proportion of Vote	DISTRICT TYPE					
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived	All Dis- tricts
$\mu$	.50	.50	.69	.53	.82	.58
$\theta$	.14	.16	.13	.17	.22	.21
$\eta^2$						.37

---

TABLE 17

PARTY AFFILIATION OF DISTRICT TYPES' REPRESENTATIVES,

BY COLUMN PERCENTAGES

(N's in Parentheses)

	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived	All Dis- tricts
Democrats	45( 61)	49(39)	93(39)	46(43)	93(77)	60(259)
Republican	55( 75)	51(41)	7( 3)	54(51)	7( 6)	40(176)
Total	100(136)	100(80)	100(42)	100(94)	100(83)	100(435)

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TABLE 18

CORRELATIONS OF DEMOCRATIC PROPORTION OF TWO-PARTY VOTE  
WITH CONSTITUENCY ATTRIBUTES

## A. FACTORS

Deprivation	.56
Affluence	-.33
Home Ownership	-.22
Industrialization	-.07
SFC	-.18
Dynamism	.05

## B. INDIVIDUAL CHARACTERISTICS

Pop. Gro.	-.23
Density	.11
Black	.61
For. Stk.	-.25
65+	-.15
-18	.15
Mobil.	.07
Priv. Ed.	-.26
Illit.	.70
Coll. Ed.	-.35
Low Inc.	.56
High Inc.	-.36
Ineq.	.46
Unempl.	.19
Agric.	.16
Manuf.	-.16
Wht. Col.	-.39
Own. Occ.	-.34
Crowd.	.57

average divided their votes about evenly between the two major parties, and all of which sent a few more Republicans than Democrats to Congress.

The squared correlation ratio in Table 16 indicates that, overall, the five-fold constituency classification distinguishes patterns of party preference in the 1962 elections moderately well, in that it accounts for a little more than one-third of the variance in the division of the two-party vote. Thus constituency type is more clearly related to party preference than to malapportionment, but not as closely as to level of turnout.

Table 18 sets forth the zero-order correlation coefficients between constituency attributes and the Democratic party's proportion of the two-party vote.<sup>32</sup> Not surprisingly, party preference is shown to be fairly closely associated with measures of socioeconomic status. The highest correlations are those involving the Deprivation factor and individual characteristics associated with that factor. Districts with strong Democratic preferences tend to be those high in various indicators of poverty and low status. Conversely, Affluence and characteristics associated with it (college education, white collar occupation, and high family income) are negatively related to Democratic party choice, though associations are lower than those obtained with Deprivation and related variables. Remaining correlations are generally quite low, with only owner occupancy of housing having a coefficient as high as  $\pm .3$ .

Table 19 presents regression equations in which constituency attributes are used as independent variables, and the Democratic party's proportion of the two-party vote as the dependent variable. The methodology employed is identical to that used earlier in the analysis of turnout.

TABLE 19

REGRESSION OF DEMOCRATIC PROPORTION OF  
TWO-PARTY VOTE ON CONSTITUENCY ATTRIBUTES

## A. FACTORS

 $R_1: .71$  $R^2: .50$ 

Variable	b	$\beta$
Deprivation	.116	.544
Affluence	-.067	.320
Home Ownership	-.047	-.224
Industrialization	-.008	-.038
STC	-.038	-.179
Population Dynamism	.013	.062
(constant)	.584	

## B. INDIVIDUAL CHARACTERISTICS

 $*R: .78$  $*R^2: .60$ 

Variable	b	$\beta$
Illit.	1.828	.524
Black	.449	.290
(constant)	.376	

\* includes effects of all nineteen individual characteristics.

The table shows that, together, the six constituency factors explain just one-half of the variance in party choice, while the nineteen individual characteristics explain three-fifths. These figures are not as high as the corresponding statistics found in relating constituency attributes to turnout, but are still more than high enough to suggest that variation in party choice is heavily dependent upon variation in those constituency variables included in the present study.

Turning to specific constituency variables, one sees, as in the analysis of zero-order correlations, the close association between party preference and socioeconomic status. Deprivation has the highest regression coefficients of any factor, and the only two individual characteristics to enter the equation, technical illiteracy and proportion of Black residents, are both most closely associated with this dimension.

In Tables 20 and 21, party preferences within the South and non-South are compared. The figures show that only 11 Southern districts sent Republican representatives to Congress in 1962 and that the average Southern district that year cast almost four-fifths of its votes for the Democratic candidate. Outside the South, the average district favored the Democratic candidate by less than 4 per cent and gave 165 of 327 seats to Republicans. Somewhat surprisingly, Table 20 shows that, as indicated by the standard deviation within the two sections, non-South districts were more cohesive in their distribution of party preferences than were Southern districts. Probably the most straightforward explanation for this lies in the fact that in a number of Southern districts, the Republican party did

not bother even to put up a candidate, thus creating a cluster of districts with a level of Republican voting far below even the low average Republican vote in other Southern districts. Finally, the squared correlation ratio in Table 20 shows that dichotomizing congressional districts into Southern and non-Southern categories accounts for about one-third of the total variance in the Democratic proportion of the two-party vote.

When party preference is regressed against both section and other constituency variables, the results set forth in Table 22 are obtained. Adding section to the analysis contributes only marginally to explained variance in party choice, yielding an increase of only 4 per cent over that shown in Table 19 when factors are used to measure constituency attributes, and only 1 per cent when individual characteristics are used. Employing the same formula as that set forth in the analysis of turnout, one can determine from the information in Tables 19, 20, and 22 that, when the six constituency factors are controlled, section explains only 9 per cent of the variance in party choice, and only 3 per cent when individual characteristics are partialled out. With section controlled, on the other hand, constituency factors explain 33 per cent of variance, while the individual characteristics explain 43 per cent.

The correlations, of course, show only the effect of Southern culture for partisan patterns in the nation as a whole. A better picture of the effect of this variable in the districts located in the South can be seen by looking at the *b* coefficients associated with the South in Table 22. One then sees that, with the six constituency factors held constant,

TABLE 20

DEMOCRATIC PROPORTION OF TWO-PARTY VOTE,  
BY SECTION

	SECTION		
	South	Non-South	All Districts
Democratic proportion of vote			
$\mu$	.79	.52	.58
$\theta$	.21	.16	.21
$\eta^2$			.32

---

TABLE 21

PARTY AFFILIATION OF REPRESENTATIVES FROM THE SOUTH AND  
THE NON-SOUTH, BY COLUMN PERCENTAGES

(N's in Parentheses)

	South	Non-South
Democrat	90( 95)	50(164)
Republican	10( 11)	50(165)
Total	100(106)	100(329)

TABLE 22

REGRESSION OF DEMOCRATIC PROPORTION OF TWO-PARTY  
VOTE ON CONSTITUENCY ATTRIBUTES AND SECTION

## A. FACTORS

R : .74

R<sup>2</sup>: .54

Variable	b	$\beta$
Deprivation	.068	.317
Affluence	-.062	-.293
Home Ownership	-.058	-.273
Industrialization	-.003	-.001
SFC	-.028	-.132
Population Dynamism	.005	-.022
South	.155	.322
(constant)	.547	

## B. INDIVIDUAL CHARACTERISTICS

\*R : .78

\*R<sup>2</sup>: .61

Variable	b	$\beta$
Illit.	1.622	.465
Black	.421	.272
South	.050	.104
(constant)	.385	

\* includes effects of all nineteen individual characteristics.

a district located in the South could be expected to give a Democratic candidate 15.5 per cent more of its two-party vote than would a district outside the South. In the equation employing individual characteristics, this difference is reduced to only 5 per cent.

From this information, one can conclude that, solely on the basis of its social, economic, and demographic attributes, the South would be expected to vote heavily Democratic, though not quite to the extent that it actually does, and that, by itself, sectional location is a much less powerful predictor variable than might be expected.

In one very important sense, this finding is undoubtedly quite misleading. The data emphatically do not warrant the conclusion that Southern cultural traditions are not relevant to Democratic party strength, but rather serve as a warning against mechanistic interpretations of aggregate relationships. For example, in both the deep South and in the industrial North, areas with heavy concentrations of Black population generally show strong loyalty to the Democratic party. Clearly, however, the social and political basis for this loyalty is quite different in the two areas. For an understanding of this difference, one must go beyond the kinds of data employed in the present analysis.

Addition of section to the regression equations does not greatly alter most of the relationships between constituency attributes and party preference found above in Table 19. The biggest change is the reduction in the coefficients associated with the Deprivation factor, though the meaning of this reduction is not very clear since the relationships of

technical illiteracy and Black population with the dependent variable do not seem to be greatly altered by introducing a control for section.

Table 23 shows relationships between constituency attributes and party preference within the Southern and non-Southern sections of the country. One rather sharp difference that emerges from this comparison is that coefficients associated with the six constituency factors are much higher in the South. A similar finding was noted earlier in the analysis of turnout, but here the differences are much more clear-cut, particularly for the factors of Deprivation and Affluence. One explanation for these differences has already been suggested. Outside the South, variation in party strength tends to be marginal, whereas within the South it is more likely to mean the difference between a contested election and one in which the Democratic party garners all votes cast. Thus a very small difference in constituency attributes might be associated with a numerically large jump in Republican party strength. Another possible explanation is similar to that discussed in connection with turnout and would suggest that growth of Republicanism in the traditionally "Solid South" is closely related to recently occurring economic development, and thus more nearly reflects current patterns in district attributes. Differences in party strength outside the South, on the other hand, can more readily be explained as a result of patterns formed during the New Deal era and tending to persist through subsequent changes in other variables.

More specific differences between the sections are not easily discerned. Outside the South, Home Ownership has the highest  $\beta$  co-

TABLE 23

WITHIN-SECTION REGRESSION OF DEMOCRATIC PROPORTION  
OF TWO-PARTY VOTE ON CONSTITUENCY ATTRIBUTES

## SOUTH

## 1. FACTORS

 $R_1$ : .65 $R^2$ : .42

Variable	b	$\beta$
Deprivation	.133	.399
Affluence	-.122	-.381
Home Ownership	-.086	-.163
Industrialization	-.042	-.175
SFC	-.034	-.178
Population Dynamism	.039	.163
(constant)	.601	

## 2. INDIVIDUAL CHARACTERISTICS

 $*R_1$ : .75 $*R^2$ : .57

Variable	b	$\beta$
Low Inc.	1.018	.425
Black	.461	.274
Illit.	.947	.277
Coll. Ed.	-3.237	-.382
Manuf.	-.523	-.233
Unempl.	-5.539	-.271
Ineq.	-1.969	-.274
Priv. Ed.	.657	.163
(constant)	1.662	

## NON-SOUTH

## 1. FACTORS

 $R_1$ : .60 $R^2$ : .36

Variable	b	$\beta$
Deprivation	.043	.190
Affluence	-.052	-.351
Home Ownership	-.058	-.402
Industrialization	.013	.076
SFC	-.014	-.082
Population Dynamism	.013	.085
(constant)	.534	

TABLE 23 -- Continued

## 2. INDIVIDUAL CHARACTERISTICS

\*R : .67

\*R<sup>2</sup>: .45

Variable	b	$\beta$
Illit.	1.633	.378
Black	.267	.188
Ineq.	-.686	-.149
Own. Occ.	-.191	-.200
High Inc.	-.581	-.128
(constant)	.776	

\* includes effects of all nineteen individual characteristics.

efficient approximately two and one-half times as high as the corresponding figure for Home Ownership in the South. As indicated by the b coefficients, however, this difference is due, not to any more pronounced causal relationship outside the South, but to differences in the variance in Home Ownership within the two sections (the standard deviation for Home Ownership being .40 outside the South, and 1.09 elsewhere). Comparison of coefficients for individual characteristics in the two sections again provides little basis for meaningful generalization.

The interaction between section and constituency attributes revealed here suggests an additional qualification to the comments made above about the relative importance of these two kinds of variables in explaining party preferences. As indicated earlier, the regression model employed here assumes that all relationships are additive in nature. Departures from additivity, therefore, suggest caution about interpretations based on the model.<sup>33</sup>

Finally, Table 24 presents a synthesis of analyses using the areal and attribute approaches by comparing actual levels of Democratic party preference with those levels predicted by the b coefficients for section and other constituency variables in Table 22. As in the analysis of turnout, results indicate that the regression models provide a close fit to the differences revealed by a comparison of district types.

Now that the relationships between constituency and party choice have been analyzed, the constituency-base theory of inter-party competition can be considered. Inter-party competition will be defined

TABLE 24

ACTUAL VS. PREDICTED DEMOCRATIC PROPORTION  
OF TWO-PARTY VOTE, BY DISTRICT TYPE

	DISTRICT TYPE				
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived
Democratic proportion of two- party vote					
Actual	.50	.50	.69	.53	.82
Predicted by factor equation	.49	.50	.69	.52	.83
Predicted by individual characteristic equation	.50	.52	.65	.52	.83

for present purposes as the proportion of the two-party vote garnered in each district by the losing candidate in the 1962 congressional elections. Initially, the analysis will follow the general outline of most previous research by ignoring the relationship between inter-party competition and party choice. Since it has been argued that such an approach can be highly misleading, results can be passed over rather quickly.

Table 25 presents data on inter-party competition for the five constituency types. The table shows that Undeveloped-deprived districts are easily the least competitive, with the losing candidate in this type receiving, on the average, only about one-sixth of the two-party vote. Population Center districts are much more competitive than Undeveloped-deprived districts, but considerably less so than are the three remaining types. Overall, inter-type differences incorporate about one-third of the total variance in inter-party competition.

Table 26 presents the zero-order correlations between constituency attributes and inter-party competition. As in the above analyses of turnout and party choice, Deprivation and individual characteristics related to this factor have the highest overall associations with the dependent variable. Similar results appear in Table 27, in which inter-party competition is regressed on constituency attributes. The table shows that, together, such attributes account for about half of the variance in inter-party competition.

Table 28 compares levels of competition in the South with those in the rest of the nation and, as expected, reveals that districts in

TABLE 25

LEVEL OF INTER-PARTY COMPETITION,  
BY DISTRICT TYPE

	DISTRICT TYPE					
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived	All Dis- tricts
Inter-party Competition						
$\mu$	.39	.38	.30	.38	.16	.33
$\theta$	.08	.10	.10	.12	.18	.15
$\eta^2$						.35

TABLE 26

CORRELATIONS OF INTER-PARTY COMPETITION  
WITH CONSTITUENCY ATTRIBUTES

## A. FACTOR

Deprivation	-.58
Affluence	.19
Home Ownership	.11
Industrialization	.11
SFC	.16
Dynamism	-.00

## B. INDIVIDUAL CHARACTERISTICS

Pop. Gro.	.22
Density	-.05
Black	-.55
For. Stk.	.28
65+	.11
-18	-.19
Mobil.	-.04
Priv. Ed.	.27
Illit.	-.66
Coll. Ed.	.22
Low Inc.	-.58
High Inc.	.25
Ineq.	-.49
Unempl.	-.08
Agric.	.22
Manuf.	.16
Wht. Col.	.32
Own. Occ.	.26
Crowd.	-.49

TABLE 27

REGRESSION OF INTER-PARTY COMPETITION ON  
CONSTITUENCY ATTRIBUTES

## A. FACTORS

R : .64

R<sup>2</sup>: .41

Variable	b	β
Deprivation	-.085	-.566
Affluence	.027	.180
Home Ownership	.017	.111
Industrialization	.011	.067
SFC	.024	.157
Population Dynamism	-.001	-.003
(constant)	.331	

## B. INDIVIDUAL CHARACTERISTICS

\*R : .74

\*R<sup>2</sup>: .54

Variable		
Illit.	-.980	-.398
Black	-.270	-.248
Low Inc.	-.290	-.176
Unempl.	.867	.107
(constant)	.440	

\* includes effects of all nineteen individual characteristics.

TABLE 28

LEVELS OF INTER-PARTY COMPETITION,  
BY SECTION

	SECTION		
	South	Non-South	All Districts
Inter-party Competition			
$\mu$	.20	.37	.33
$\theta$	.19	10	.15
$\eta^2$			.27

the South are much less competitive. However, when section is added to the regression analysis of inter-party competition, as in Table 29, it is shown to be a variable of little explanatory power.

To this point the analysis would seem to provide fairly substantial support for the ecological-base hypothesis, since it can be seen that more than one-half of the variance in levels of inter-party competition is associated with differences in constituency variables, and that, more specifically, vigorous political competition appears to be inhibited in areas that are economically and culturally disadvantaged. It must now be determined whether this association represents theoretically meaningful causal linkages or whether it is, instead, an artifact of party dominance.

In the previous section, a moderately strong relationship was found between constituencies' distribution of party preferences and their social, economic, and demographic attributes. It can also be demonstrated that there is a high correlation between party preference and inter-party competition. The correlation between the level of competition in a district and the percentage of the two-party vote in that district cast for the Democratic candidate is  $-.78$ . This correlation is hardly surprising in an election in which the Democratic party enjoyed a clear advantage nationwide, garnering, in the average district, 58 per cent of the two-party vote and winning 60 per cent of the 435 House seats.

In order to test Coulter and Gordon's hypothesis that these associations account for the relationship between constituency and inter-party competition, the party preference variable was added to the regres-

sion equations described in Table 29. In this way it is possible to control for the correlation between party preference and inter-party competition in examining the effect on the latter of "ecological" variables. The results are set forth in Table 30.

These results indicate a good deal of support for Coulter and Gordon's hypothesis. When party preference is controlled, most of the regression coefficients associated with constituency factors and individual characteristics are reduced, and the largest of these are reduced considerably. Further, when the squared multiple correlations between constituency and inter-party competition are recomputed with the effects of party preference controlled (using the same formula employed above in partialing out the effects of constituency attributes and action) the resulting squared partial correlation is .10 for the six factors (compared to .42 with party preference uncontrolled), and .23 (compared to .54) for the nineteen individual characteristics.

At the same time the analysis does not warrant complete rejection of the ecological-base hypothesis. The ability of the individual constituency characteristics to predict almost one-fourth of the variance in inter-party competition, while not dramatic, is certainly of some substantive significance. The six constituency factors do not do nearly as well, but even an explained variance of 10 per cent cannot be completely dismissed in a discipline poor in validated theory.

The above analysis was repeated for the South and non-South considered separately. In the South, party preference and inter-party

TABLE 29

REGRESSION OF INTER-PARTY COMPETITION ON  
 CONSTITUENCY ATTRIBUTES AND SECTION

## A. FACTORS

R : .65

R<sup>2</sup>: .42

Variable	b	$\beta$
Deprivation	-.064	-.422
Affluence	.024	.163
Home Ownership	.021	.141
Industrialization	.008	.050
SFC	.019	.127
Population Dynamism	.003	.022
South	-.070	-.205
(constant)	.348	

## B. INDIVIDUAL CHARACTERISTICS

\*R<sub>2</sub> : .74

\*R : .54

Variable	b	$\beta$
Illit.	-.975	-.396
Black	-.269	-.247
Low Inc.	-.288	-.174
Unempl.	.854	.105
South	-.002	-.005
(constant)	.440	

\* includes effects of all nineteen individual characteristics.

TABLE 30

REGRESSION OF INTER-PARTY COMPETITION ON  
CONSTITUENCY ATTRIBUTES, SECTION, AND PARTY PREFERENCE\*\*

## A. FACTORS

R : .80

R<sup>2</sup>: .65

Variable	b	β
Deprivation	-.030	-.201
Affluence	-.006	-.041
Home Ownership	-.007	-.049
Industrialization	.007	.043
SFC	.005	.035
Population Dynamism	.006	.037
Section	.007	.019
Party Preference**	-.492	-.696
(constant)	.617	

## B. INDIVIDUAL CHARACTERISTICS

\*R : .84

\*R<sup>2</sup>: .70

Variables		
Illit.	-.301	-.122
Black	-.093	-.085
Low Inc.	-.289	-.175
Unempl.	.997	.122
South	.023	.068
Party Preference**	-.428	-.607
(constant)	.599	

\* includes effects of all nineteen individual characteristics.

\*\* Democratic proportion of two-party vote.

competition were almost perfectly correlated ( $r = -.96$ ). Thus, in the South, competitiveness and Republicanism cannot be empirically separated and it is not possible to "control" for the latter. Analysis is, however, presented for the non-South. Table 31 shows the relationship in this section between constituency and competitiveness with no control for party strength. In Table 32 this control is added to the equation. When partial correlations are computed, constituency factors explain 8 per cent of total variance in inter-party competition. The corresponding figure for the individual characteristics is 26 per cent.

The greatest difference between this analysis and the analysis of the nation as a whole is that, in the non-South, the two parties are much more evenly balanced, resulting in a much lower correlation between competition and party preference ( $r = -.48$ ). The result is that, in the non-South, the overall association between constituency and competition is much lower than in the nation as a whole, but, with party preference controlled in each case, the results are quite similar.

Had party preference not been controlled, an analysis of the non-South might have led to quite different interpretations than an analysis of all 435 districts. This helps to confirm the suggestion that one reason for the seemingly contradictory results of past research is that some analyses have involved elections in which the parties were fairly evenly matched, while others have not. The above analysis, therefore, demonstrates, not that the ecological-base hypothesis is entirely erroneous, but that if misleading results are to be avoided it must be investigated much more carefully than has usually been done in the past.

TABLE 31

REGRESSION OF INTER-PARTY COMPETITION ON  
CONSTITUENCY ATTRIBUTES -- NON-SOUTH ONLY

## A. FACTORS

R: .43

R<sup>2</sup>: .19

Variable	b	$\beta$
Deprivation	-.041	-.302
Affluence	.013	.148
Home Ownership	.020	.233
Industrialization	-.066	-.057
SFC	.005	.048
Population Dynamism	-.005	-.055
(constant)	.359	

## B. INDIVIDUAL CHARACTERISTICS

\*R: .60

\*R<sup>2</sup>: .36

Variable	b	$\beta$
Illit.	-1.515	-.576
Black	-.135	-.157
Crowd.	.637	.291
Mobil.	-.196	-.173
(constant)	.513	

\* includes effects of all nineteen individual characteristics.

TABLE 32

REGRESSION OF INTER-PARTY COMPETITION ON  
 CONSTITUENCY ATTRIBUTES AND PARTY PREFERENCE\*\* --

NON-SOUTH ONLY

A. FACTORS

R : .54

R<sup>2</sup> : .29

Variable	b	$\beta$
Deprivation	-.031	-.227
Affluence	.001	.010
Home Ownership	.007	.076
Industrialization	-.003	-.027
SFC	.002	.016
Population Dynamism	-.002	-.021
Party Preference**	-.239	-.392
(constant)	.187	

B. INDIVIDUAL CHARACTERISTICS

\*R : .66

\*R<sup>2</sup> : .43

Variable	b	$\beta$
Illit. -	-.115	-.436
Black	-.078	-.090
Crowd.	.593	.271
Mobil.	-.166	-.147
Party Preference**	-.172	-.284
(constant)	.565	

\* includes effects of all nineteen individual characteristics.

\*\* Democratic proportion of two-party vote.

Finally, the analysis again comes full circle with use of the  $b$  coefficients in Table 31 to predict levels of competition in each of the five areal types. Comparison of these predictions with actual scores shown in Table 33 demonstrates that, as with turnout and party preference, the constituency typology carries little information about the dependent variable not provided by the linear and additive regression models.

In this chapter an attempt has been made to apply indices of constituency environment developed in Chapters II and III to an analysis of the politics of the electoral arena in which members are recruited to Congress. This analysis has indicated that, while some aspects of the electoral process, such as turnout and party preference, are very heavily dependent upon the nature of the constituency environment, other aspects, such as malapportionment, have surprisingly little association with constituency, or, like inter-party competition, have associations that are in part explainable as statistical artifacts. Despite these complexities, the above analysis of constituency and legislative inputs has been relatively straightforward in that the behavior examined is that of the constituents themselves, the persons whose attributes constitute the measures employed as independent variables. In the following chapter, the analysis will be taken one step further, and an effort will be made to examine the behavior, not of the constituents themselves, but of their elected representatives.

TABLE 33

ACTUAL VS. PREDICTED INTER-PARTY COMPETITION,  
BY DISTRICT TYPE

	DISTRICT TYPE				
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived
Actual	.39	.38	.30	.38	.16
Predicted by factor equation	.39	.37	.30	.36	.17
Predicted by individual characteristics equation	.39	.39	.29	.36	.16

## NOTES FOR CHAPTER IV

1  
376 U. S. 1 (1962).

2  
David Easton, The Political System: An Inquiry into the State of Political Science (New York: Knopf, 1953), p. 129.

3  
Gordon E. Baker, Rural Versus Urban Political Power (Garden City, N. Y.: Doubleday & Company, 1955); Derge, "Metropolitan and Outstate Alignments"; Davis, Legislative Malapportionment and Roll Call Voting.

4  
Gordon E. Baker, The Reapportionment Revolution (New York: Random House, 1966); Hacker, Congressional Districting, pp. 80-87; Congressional Quarterly Weekly Report XX (February 2, 1962), pp. 153-169; Paul Theodore David and Ralph Eisenberg, Devaluation of the Urban and Suburban Vote: A Statistical Investigation of Long-term Trends in State Legislative Representation (Charlottesville: Bureau of Public Administration, University of Virginia, 1961, 1962).

5  
One exception is Hacker, Congressional Districting, pp. 77-78, who does look at the relationship between malapportionment and standard of living (the latter measured by the proportion of sound housing).

6  
See Baker, The Reapportionment Revolution.

7  
Thomas R. Dye, Politics, Economic and the Public: Policy Outcomes in the American States (Chicago: Rand McNally & Company, 1966); Allan G. Pulsipher and James L. Weatherby, Jr., "Malapportionment, Party Competition, and the Functional Distribution of Governmental Expenditures," American Political Science Review, LXII (December, 1968), 1207-1219.

8

To correct for inequalities resulting from apportionment of districts by state, some authors compute malapportionment in terms of the average population of the state in which the district is located. See Congressional Quarterly Weekly Report XX (February 2, 1962), pp. 153-169; Hacker, Congressional Districting, pp. 71-72. In addition Hacker eliminates from his calculations the nine at-large districts in the Eighty-seventh Congress. See ibid., pp. 72-73.

9

It is interesting to compare these figures with similar calculations made for the Eighty-eighth Congress by Congressional Quarterly (Congressional Quarterly Weekly Report XXII (August 21, 1964), p. 1786). In their report, Congressional Quarterly found that an "ideal" apportionment would have produced net gains of six and ten seats for urban and suburban types, respectively, and net losses of twelve and four seats respectively for rural and mixed types.

10

Cf. Hacker, Congressional Districting, pp. 71-72.

11

At least two studies attempted to assess the effect of malapportionment on policy outcomes by artificially weighting roll call votes so that each representative's vote would reflect the size of his constituency. Both studies found that such weighting of votes would have had little effect of the fate of the bills in question. See, ibid., pp. 87-91; Davis, Malapportionment and Roll Call Voting, pp. 16-18, 31-42. In comparative state politics, a number of studies have indicated that there is little causal relationship between malapportionment and public policy, but see Pulsipher and Weatherby, "Malapportionment, Party Competition, and Government Expenditures."

12

This argument is noted by Hacker, who reports that districts scoring high in proportion of sound housing tend to score low in representation in Congress. See Hacker, Congressional Districting, pp. 77-78, 106-107.

13

Correlations between malapportionment and constituency attributes were also computed separately in the South and the non-South. Correlations are generally much higher in the South to the detriment of the "New South," the rapidly growing, relatively affluent, and relatively densely populated areas within that section.

14

For summaries of available research findings, see Lester W. Milbrath, Political Participation: How and Why Do People Get Involved

in Politics (Chicago: Rand McNally & Company, 1965); Hugh A. Bone and Austin Ranney, Politics and Voters (New York: McGraw-Hill, 1963).

15 The making of individual inferences on the basis of aggregate data is known as the "ecological fallacy."

16 Turnout was computed as a proportion of the voting age population (twenty-one years of age in all states except Alaska, Georgia, Hawaii, and Kentucky). Data on turnout were missing for the first and second districts in Arkansas, where state law does not require reporting of vote totals in uncontested elections. In this and in the remainder of the analysis, except where noted, pairwise deletion was used in computation of correlations and regressions where missing data were involved.

17 Hubert M. Blalock, "Causal Inferences, Closed Populations, and Measures of Association," American Political Science Review, LXI (March, 1967), 130-136.

18 Note that because of the orthogonal nature of the factors, the  $\beta$  coefficients associated with them are virtually identical to the zero-order correlation coefficients shown in the previous table.

19 Key, Southern Politics, part 5.

20 Froman, Congressmen and their Constituents, chap. ii.

21 Daniel B. Suits, "Use of Dummy Variables in Regression Equations," Journal of the American Statistical Association, LII (December, 1957), 548-551.

22 Hubert M. Blalock, Social Statistics (New York: McGraw-Hill, 1960), p. 347.

23 A similar approach to that followed here is taken by Ira Sharkansky. See his Regionalism in American Politics (Indianapolis: Bobbs-Merrill, 1970), chap. vi.

24 Samuel P. Huntington, "A Revised Theory of American Party Politics," American Political Science Review, LIV (September, 1950), 669-677; Heinz Eulau, "The Ecological Basis of Party Systems:

The Case of Ohio," Midwest Journal of Political Science, I (August, 1957), 125-135; Robert T. Golembiewski, "A Taxonomic Approach to State Political Party Strength," Western Political Quarterly, XI (September, 1958), 494-513; David Gold and J. R. Schmidhauser, "Urbanization and Competition: The Case of Iowa," Midwest Journal of Political Science, IV (February, 1960), 62-75; Thomas W. Casstevens and Charles Press, "The Context of Democratic Competition in American State Politics," American Journal of Sociology, LXVIII (March, 1963), 536-543; Richard E. Dawson and James A. Robinson, "Inter-party Competition, Economic Variables, and Welfare Policies in the American States," Journal of Politics, XXV (May, 1963), 265-289; Phillips Cutright, "Urbanization and Competitive Party Politics," Journal of Politics, XXV (August, 1963), 552-564; Kenneth Janda, Data Processing: Applications to Political Research (Evanston, Ill.: Northwestern University Press, 1965), pp. 175-183; Richard E. Dawson, "Social Development, Party Competition, and Policy," in William N. Chambers and Walter D. Burnham, eds., The American Party Systems: Stages of Political Development (New York: Oxford University Press, 1967), pp. 203-237; Charles M. Bonjean and Robert Lineberry, "The Urbanization-Party Competition Hypothesis: A Comparison of All United States Counties," Journal of Politics, XXXII (May, 1970), 305-321.

25 Philip Coulter and Glen Gordon, "Urbanization and Party Competition: Critique and Redirection of Theoretical Research," Western Political Quarterly, XXI (June, 1968), 274-287.

26 Ibid., p. 286.

27 See, for example, Angus Campbell et al., The American Voter (New York: John C. Wiley & Sons, Inc., 1960), section iv, passim; Robert R. Alford, Party and Society; The Anglo-American Democracies (Chicago: Rand McNally & Company, 1963); William Wayne Shannon, Party, Constituency and Congressional Voting: A Study of Legislative Behavior in the United States House of Representatives (Baton Rouge: Louisiana State University Press, 1968), chap. vi; Nicholas A. Masters and David S. Wright, "Trends and Variations in the Two-Party Vote: The Case of Michigan," American Political Science Review, LII (December, 1958), 1078-1090.

28 Huntington, "A Revised Theory," pp. 269-270.

29 Eulau, "The Ecological Basis of Party Systems," pp. 134-135.

30 V. O. Key, Southern Politics, chap. xiii.

31 Ibid., pp. 655-656.

32 Similar findings are presented in a slightly different fashion by Vanderslik, who computes, for the representatives of each party, the mean scores and standard deviations of their districts on each of twenty-one constituency variables. See Vanderslik, "Constituency and Roll Call Voting," p. 154.

33 Note that according to the b coefficient in Table 19, a Southern district would be expected to score 15.5 per cent higher in Democratic voting with the six constituency factors controlled, but that the difference between the constant terms in the separate sectional equations implying constituency factors (Table 20) is only about one-half as large. In the analysis of turnout, on the other hand, very little discrepancy can be found between the comparable statistics.

## CHAPTER V

### LEGISLATIVE OUTPUTS: CONSTITUENCY AND ROLL CALL BEHAVIOR

In the last chapter, an attempt was made to apply the measures set forth in Chapters II and III to an examination of the relationship between constituency environment and certain aspects of the input side of the legislative process. In the present chapter, the focus will shift to legislative outputs. There are, of course, any number of vantage points from which legislative outputs might be studied. The analysis presented here will deal with the decisions made by representatives through their roll call behavior. This will be done for two related reasons: data on roll call voting are readily available, and analysis of such data has constituted a principal focus of inquiry in past research.

The presentation of the contents of this chapter will be made in three stages. First, the indices of roll call behavior to be utilized as dependent variables in the remainder of the analysis will be described. Second, these indices will be related to the various constituency variables, including section, developed earlier. Finally, the roles of party affiliation and inter-party competition as possible intervening variables between constituency and roll call voting will be investigated.

The roll calls analyzed were taken from the first session of the Eighty-eighth Congress which convened in January 9, 1963, and adjourned the following December 30. From the 119 roll calls taken during the session, five indices were developed and these must now be discussed.<sup>1</sup>

Two of the indices were derived from a factor analysis of roll call variables. Factor analysis was advocated as a technique for managing roll call data as early as 1932.<sup>2</sup> For some time thereafter most applications appeared in the psychological literature,<sup>3</sup> but by the 1960s factor analysis had gained widespread acceptance among political scientists as a technique for analyzing roll calls.<sup>4</sup>

In the present study, all first session roll calls on which the losing side constituted at least 10 per cent of those present and voting were considered. There were eighty-eight such roll calls. Votes were coded as affirmative, absent or abstention, and negative, and were inter-correlated.<sup>5</sup> The resulting matrix was factored: two factors were extracted and rotated to an orthogonal varimax solution.<sup>6</sup>

The results that this procedure produced are very similar to those yielded by a factor analysis of the first session of the Eighty-seventh Congress conducted by MacRae, and it is in light of his work that the present analysis will be interpreted.<sup>7</sup> MacRae's goal was to produce an index that would be a measure of "pure partisanship," that is, one that would measure the influence of party allegiance on the voting of representatives, and that would not be contaminated by the influence of the representatives' ideological predispositions. MacRae noted that the

vote electing the Speaker of the House which is taken at the beginning of each Congress could be considered a measure of pure partisanship, since traditionally this vote is conducted entirely along party lines without consideration of ideology, ideological disputes over the office having been resolved within party caucuses. He reasoned, therefore, that if the first axis extracted from a factor analysis of roll calls were rotated so that it fell directly over the point in the factor space defined by the Speakership vote, the loadings of each roll call on the axis would be determined by the degree to which the two parties divided on that roll call and thus the factor might be considered to be a pure index of party loyalty, or partisanship. He further suggested that, conversely, the axis orthogonal to this first dimension might be hypothesized to be an index of pure ideology, free from partisan influences.

In the factor analysis of the first session of the Eighty-eighth Congress carried out for the present study, the rotation method was quite different from MacRae's. Factors were rotated in such a way as to maximize simple structure (that is, a structure with loadings for each factor as high as possible for some variables, and as low as possible for the rest), without regard to the location of the factor axes with respect to the Speakership vote. The results, however, are almost identical to MacRae's. Table 34 sets forth the loadings of each of the eighty-eight roll calls on the two factors.<sup>8</sup> It can be seen from the table that the two factors respectively account for 38 and 16 per cent of the total variance in all eighty-eight roll calls. The table shows that the vote for Speaker produces a

TABLE 34

## ROTATED FACTOR LOADING MATRIX:

## ROLL CALL VARIABLES

CQ #	I Partisanship	II Ideology	$h^2$
1	-.97	.00	.93
2	-.96	.07	.92
3	-.68	.50	.71
4	-.72	.03	.52
8	-.04	-.29	.08
9	.78	-.07	.61
12	-.75	.32	.67
13	-.35	.33	.23
14	.70	-.46	.70
15	-.53	.50	.53
16	.88	-.13	.79
17	-.87	.11	.76
18	.22	-.28	.13
19	-.17	.05	.03
21	.83	-.37	.83
22	.18	-.29	.12
23	.28	-.41	.25
24	-.75	.21	.61
25	-.78	.26	.67
26	-.45	.48	.43
27	.89	-.23	.84
28	-.88	.30	.87
30	-.08	.47	.22
31	.14	-.53	.31
32	.66	-.54	.73
33	-.31	-.51	.36
34	-.43	-.00	.18
35	-.67	.24	.51
36	-.68	.47	.68
37	-.53	.21	.32
38	-.09	.65	.32
39	-.30	.21	.14
40	-.35	.62	.51
42	.01	.55	.30
43	-.21	.26	.11

TABLE 34 -- Continued

CQ #	I Partisanship	II Ideology	$h^2$
44	.58	-.28	.41
45	-.27	.21	.12
46	.17	-.19	.06
50	-.59	.45	.54
52	-.37	.23	.19
53	-.18	.17	.06
54	.84	.11	.72
56	-.36	.36	.26
57	.82	-.19	.70
58	-.90	.19	.85
59	-.38	.63	.54
60	-.12	.77	.61
61	.61	-.59	.72
62	-.40	.72	.68
63	.85	-.25	.78
64	-.64	.38	.56
67	-.42	.25	.24
68	.90	-.24	.87
69	-.64	.41	.58
72	.26	.65	.49
74	.74	-.24	.61
75	-.23	.15	.08
76	-.43	.20	.22
77	-.72	.35	.64
80	.01	.37	.14
82	-.47	.48	.46
84	.26	-.52	.34
85	-.14	.73	.56
86	.31	-.12	.11
87	-.77	.27	.67
88	.86	-.29	.82
89	-.81	.37	.80
90	-.72	.15	.55
95	-.34	.67	.56
96	-.05	-.51	.26
98	.67	.01	.45
99	-.62	-.03	.38
100	-.41	.72	.64
101	.19	-.13	.05
103	.87	-.04	.76

TABLE 34 -- Continued

CQ #	I Partisanship	II Ideology	$h^2$
104	-.52	.33	.38
106	-.89	-.01	.79
107	-.33	.18	.14
108	.67	-.48	.67
109	-.24	.43	.24
111	.69	-.48	.70
112	-.29	.68	.54
113	.27	-.24	.13
116	-.67	.22	.50
117	.78	-.44	.80
118	-.88	.13	.79
119	-.80	.39	.79
Eigen- values	30.2	12.8	
Cumulative Per Cent of Total Variance	38	54	
Cumulative Per Cent of Common Variance	70	100	

loading on the first factor of  $-.97$  and of  $.00$  on the second. Thus, while the two factors together account for 93 per cent of the variance on this roll call, the first factor alone accounts for virtually all of this.

In the present analysis, MacRae's labels of "Partisanship" and "Ideology" will be adopted to describe the two factors to be discussed here. However, a few caveats, noted by MacRae, need to be emphasized. In the first place, what the first factor, in both this study and in MacRae's, actually measures directly is not partisanship or party loyalty, but simply differences between the voting patterns of the two parties. These differences might well be due to the pull of loyalties and pressures emanating from the representative's party affiliation, but on roll calls other than the Speakership vote they might also be due to various other factors that differentiate the parties, including their different constituency bases. This question will be taken up again later on in the chapter.

Secondly, designation of the remaining factor as "Ideology" is subject to serious question. As MacRae notes, an axis orthogonal to the Partisanship dimension can be considered a measure of pure ideology only if one assumes that there are no ideological differences between the parties, an assumption that, to say the least, is highly questionable. Further, though there is perhaps some tendency, in both MacRae's analysis and the present one, for the first factor to relate to party matters -- such as procedural questions or questions of executive power -- to a greater extent than the second, both factors appear to involve subjects which at face value have a high degree of ideological content.

The remaining three indices are based on measures that have been employed for a number of years by Congressional Quarterly. These are "Presidential Support (Domestic)," "Presidential Support (Foreign)," and support for a "Larger Federal Role." The first index reflects the degree to which a Congressman's voting behavior agrees with the position taken by the President in matters of domestic policy. The second is similar to it, but involves votes taken in the area of foreign policy. The third index reflects a Congressman's support for, or opposition to, measures which would at face value involve expansion of the role of the federal government in American politics.<sup>9</sup>

Certain modifications were made in adopting these indices for present use. The most important deals with the fact that, in order to take non-voting into account, Congressional Quarterly computes separate indices of the proportion of a Congressman's vote cast in support for the presidential position or for federal expansion, and of the proportion of votes cast in opposition to these positions. For the present analysis, it was felt that, in each area, a single index was needed. To this end, each vote cast in support of the President's position or for a larger federal role was scored as plus one, each absence or abstention as zero, and each vote in opposition as minus one. Scores were then summed and divided by the number of roll calls in the index, thus creating a composite score with a theoretical range from plus one to minus one.<sup>10</sup>

It should be noted at the outset that the five roll call indices that will be used here are by no means independent measures. The roll

calls used in the factor analysis and those employed in constructing the modified Congressional Quarterly scores were, of course, drawn from the same population of votes. Further, Presidents Kennedy and Johnson took positions on all of the seven roll calls Congressional Quarterly used in constructing its Larger Federal Role score, and in all cases supported federal expansion, thus making that index a subset of the Presidential Support (Domestic) score. The exact empirical relationships among the five measures are set forth in the correlation matrix shown in Table 35. The matrix makes clear that the indices, except for the two factor scores, are rather closely related. This is especially true of the three Congressional Quarterly indices. The high intercorrelations shown would lead one to suspect that analyses of the determinants of the different scores will produce similar results and, as will be seen below, such is, in fact, the case.

With the description completed of the roll call indices to be analyzed, the second task to be accomplished in this chapter is to explore the relationships between these indices and constituency types, factors, and individual characteristics. Following the same procedure used in the previous chapter, this task will be begun by comparing scores among the five types of constituency environment. This comparison is presented in Table 36.

Before proceeding to the substantive results of the table, one methodological feature is worth noting. Since Stewart Rice proposed his well-known indices of likeness and cohesion,<sup>11</sup> there has been consider-

TABLE 35

## CORRELATION COEFFICIENTS AMONG FIVE ROLL CALL INDICES

	Partison- ship	Ideo- logy	Larger Federal Role	Pres. Support (Domestic)
Partisanship				
Ideology	-.01			
Larger Federal Role	-.64	.61		
Pres. Support (Domestic)	-.85	.51	.89	
Pres. Support (Foreign)	-.79	.57	.82	.94

TABLE 36

## ROLL CALL VOTING INDICES, BY DISTRICT TYPE

	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived	All Dis- tricts
Partisanship						
$\mu$	.30	.26	-.63	.26	-.73	-.00
$\theta$	.98	1.02	.49	1.02	.56	.99
$\eta^2$						.20
Ideology						
$\mu$	.49	.09	.88	-.21	-1.08	.00
$\theta$	.63	.84	.38	.78	.97	.98
$\eta^2$						.40
Larger Federal Role						
$\mu$	.47	.33	.82	.22	.37	.40
$\theta$	.53	.57	.22	.51	.49	.53
$\eta^2$						.10
Pres. Support (Domestic)						
$\mu$	.29	.21	.75	.13	.32	.29
$\theta$	.52	.55	.22	.52	.42	.51
$\eta^2$						.10
Pres. Support (Foreign)						
$\mu$	.12	.03	.71	-.11	.12	.11
$\theta$	.65	.67	.20	.64	.50	.63
$\eta^2$						.11

able debate among roll call analysts as to how best to go about measuring differences in voting between groups of legislators and conversely, voting cohesion within groups.<sup>12</sup> It should be pointed out, therefore, that the standard deviation statistic is, in effect, an index of cohesion and that the squared correlation ratio is an index of unlikeness. Provided that one is willing to accept the assumption that interval level indices can legitimately be developed from roll call data,<sup>13</sup> the measures used here should be attractive since they are extremely simple and easy to interpret. While this may seem to be a very obvious point, the fact is that these statistics have been little used by roll call analysts.<sup>14</sup>

The most obvious conclusion suggested by the table is that, in general, different types of constituency environment do not produce radically different patterns of voting behavior on the part of their representatives. For the Congressional Quarterly indices the squared correlation ratios (which, as noted earlier, measure between-group heterogeneity and, hence, group distinctiveness) are lower than for any of the variables studied in the last chapter. The ratio for Partisanship is but slightly higher. Only on the Ideology factor are types very clearly distinguished. These generally low coefficients suggest that while the behavior of the electorate in a district is closely linked to the measures of constituency used in this study, there is considerable slippage in the link between type of constituency environment and the behavior of district representatives.

Despite the general lack of voting cohesion of constituency type representatives, some notable differences do emerge from Table 36. For the three Congressional Quarterly indices, the major difference is clearly between representatives of Population Center districts, on the one hand, and those of all the remaining groups on the other. Population Center districts stand out not only by the much greater support they give to presidential positions and to an expanded federal role, but also by the extremely high level of cohesion, evidenced by the type's very low standard deviation, among representatives from this kind of district.

For the two factor score indices, a somewhat different picture emerges. On the Partisanship scale, both Population Center districts and Undeveloped-deprived districts exhibit low (or pro-Democratic) scores and relatively high cohesion. The other three district groups have higher scores, and are less cohesive. For the Ideology dimension, on the other hand, the "coalition" between Population Center and Undeveloped-deprived districts breaks down completely, and the two groups are at opposite ends of the spectrum. Population Center districts -- at the "liberal" end of the spectrum, again exhibit high cohesion, but Undeveloped-deprived districts are least cohesive of all. Of the remaining district types, Manufacturing Centers are the most liberal, and Undeveloped districts the most conservative.

Table 37 sets forth the zero-order correlations between roll call scores and measures of constituency attributes. The correlations are generally very modest in strength, confirming the conclusions reached in the

TABLE 37

CORRELATIONS OF ROLL CALL INDICES  
WITH CONSTITUENCY ATTRIBUTES

	Parti- san- ship	Ideo- logy	Larger Fed- eral Role	Pres. Sup- port (Domestic)	Pres. Sup- port (Foreign)
<b>A. FACTORS</b>					
Deprivation	-.36	-.49	-.01	-.06	.04
Affluence	.29	.14	-.07	-.17	-.11
Home Ownership	.30	-.33	-.34	-.39	-.41
Industrialization	-.01	.29	.23	.16	.17
SFC	.11	.09	-.03	-.06	-.03
Dynamism	-.12	-.11	-.04	.06	.03
<b>B. INDIVIDUAL CHARACTERISTICS</b>					
Pop. Gro.	.17	.04	-.07	-.10	-.10
Density	-.16	.31	.24	.26	.28
Black	-.42	-.31	.09	.18	.17
For. Stk.	.09	.60	.28	.20	.24
65+	.14	.12	-.04	-.07	-.04
-18	.00	-.39	-.21	-.18	-.21
Mobil.	-.10	-.16	-.07	-.01	-.00
Priv. Ed.	.12	.53	.24	.15	.19
Illit.	-.52	-.42	.12	.23	.18
Coll. Ed.	.31	.18	-.08	-.17	-.11
Low Inc.	-.33	-.58	-.10	-.01	-.05
High Inc.	.29	.30	.01	-.10	-.03
Ineq.	.26	-.54	-.13	-.05	-.07
Unempl.	-.24	.18	-.08	-.17	-.11
Agric.	.02	-.48	-.31	-.25	-.27
Manuf.	.11	.26	.13	.04	.06
Wht. Col.	.23	-.37	.07	-.01	.04
Own. Occ.	.35	-.15	-.27	-.35	-.35
Crowd.	-.43	-.43	.01	.14	.09

comparison of district types. Strongest associations are found for the Ideology dimension. It appears that, in general, Deprivation and the characteristics associated with it are related to conservative roll call voting behavior. Liberal voting behavior, on the other hand, is associated with ethnic and religious, but not racial, heterogeneity and, to a lesser extent, with Industrialization.

Correlations with Partisanship are somewhat lower than for Ideology. Pro-Democratic scores on this dimension are associated with illiteracy, overcrowded housing conditions, and racial heterogeneity. Not surprisingly, Republican Partisanship is found in high status districts and in districts with a high proportion of owner occupied housing.

Correlations for the three Congressional Quarterly scores are almost all quite low and few generalizations can be made. The Home Ownership dimension tends to be associated with opposition to presidential policies and to a larger federal role. Districts high in agriculture show a similar pattern, but the correlations for manufacturing are extremely low. Districts high in ethnic heterogeneity have some tendency toward above average scores on these indices.

Having looked at the overall associations between constituency and roll call voting, it is necessary now to examine more closely the causal relationships involved. Table 38 presents the results of regression equations using, as independent variables, first the six constituency factors and then the nineteen individual constituency characteristics.<sup>15</sup>

TABLE 38

## REGRESSION OF ROLL CALL INDICES ON CONSTITUENCY ATTRIBUTES

	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
<b>A. FACTORS</b>										
R <sup>2</sup>	.57		.67		.41		.47		.45	
R <sup>2</sup>	.33		.45		.17		.22		.20	
Variable	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
Deprivation	-.359	-.350	-.473	-.470	.001	.003	.032	.061	.028	.043
Affluence	.293	.289	.134	.135	-.038	-.071	-.091	.175	-.070	-.109
Home Ownership	.308	.303	-.328	-.328	-.181	-.337	-.204	-.390	-.259	-.402
Industrialization	-.033	-.030	.254	.240	.122	.213	.083	.149	.106	.155
SFC	.144	.112	.080	.080	-.020	-.037	-.032	-.061	-.026	-.040
Population Dynamism	-.134	-.131	-.105	-.105	-.017	-.032	.034	.065	.027	.042
(constant)	-.000		.000		.404		.291		.110	
<b>B. INDIVIDUAL CHARACTERISTICS</b>										
*R	.67		.74		.52		.56		.33	
*R <sup>2</sup>	.45		.54		.27		.32		.28	
Variable										
Illit.	-8.097	-.483	-----	-----	2.173	.244	1.851	.215	1.178	.111
Own. Occ.	1.146	.168	-----	-----	-----	-----	-.325	-.092	-.929	-.215
Coll. Ed.	16.783	.530	-----	-----	-----	-----	-4.700	-.288	-4.846	-.241
Wht. Col	-4.890	-.410	-----	-----	-----	-----	-----	-----	-----	-----
Mobil.	-2.321	-.189	-1.539	-.128	-----	-----	-----	-----	-----	-----

TABLE 38.-- Continued

	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
For. Stk.	-----	-----	1.846	.273	.897	.246	.697	.197	-----	-----
Ineq.	-----	-----	-.687	-.030	-----	-----	-----	-----	-----	-----
Unempl.	-----	-----	14.895	.274	5.145	.175	2.250	.079	-----	-----
Low Inc.	-----	-----	-4.934	-.446	-----	-----	-----	-----	-----	-----
Agric.	-----	-----	-----	-----	-1.709	-.201	-2.625	-.413	-3.393	-.433
Manuf.	-----	-----	-----	-----	-----	-----	-1.002	-.208	-.957	-.161
(constant)	1.870		.554		-.101		.888		1.149	

\* includes effects of all nineteen individual characteristics.

The table shows again the fact that linkages between constituency and roll call behavior are rather weak. Only in the case of the Ideology dimension is as much as one-half of the variance explainable in terms of district attributes. Associations are again lowest for the Congressional Quarterly indices. Little can be said about the effects of specific factors or individual characteristics.<sup>16</sup> Neither owner occupancy of housing nor density appears to have a great influence on voting patterns, so that the coefficients associated with the Home Ownership factor are probably misleading. Technical illiteracy and low family income, both associated with the Deprivation factor, do appear to be of some significance in the analyses of Partisanship and Ideology respectively. The negative signs of these relationships appear somewhat paradoxical in that they show Deprivation to be conducive both to pro-Democratic and to conservative voting behavior. A clearer understanding of these patterns must await the examination later in the chapter of the impact of party affiliation on associations between constituency and roll call voting.

As in the previous chapter, the relative importance of section as a constituency variable must be examined. Southern sectionalism will be analyzed with respect to all five roll call indices. For Presidential Support on foreign policy, the effect of Midwestern geographic location will also be investigated.

Most students of Southern politics have concluded that the South is in general more "conservative" than one would predict solely on

the basis of the characteristics of its population, and that this conservatism is due to the ability of a social and economic elite to distort political behavior through manipulation of the racial issue. Thus Southern representatives are not only chosen for office by a truncated electorate (a matter discussed in Chapter IV) but once elected are made more susceptible to pressure from the political right because of the unpopularity of "liberal" interest groups, such as civil rights and labor organizations.<sup>17</sup>

While advancing this viewpoint, Key points out that only on specifically racial matters do Southern Senators and Congressmen vote with a high degree of solidarity in opposition to non-Southerners and it is reasonable to hypothesize that social, economic, and demographic variables are useful in explaining variance in the voting of Southern representatives.<sup>18</sup> It is, therefore, again necessary to test both attribute and historical-cultural hypotheses in explaining Southern political behavior.

Thus far, for reasons set forth in Chapter III, discussion of section has focused entirely on comparisons between districts in the former states of the Confederacy, on the one hand, and non-Southern districts on the other. In the analysis of Presidential Support in foreign policy, another sectional distinction demands attention. For many years, students of American politics have hypothesized a cleavage in foreign policy outlook between the interior and coastal sections of the country. According to the proponents of this hypothesis, the Midwestern portion of the country has

long been a bastion of isolationism, whereas the coastal areas have supported a more internationalist foreign policy. The exact reasons for this putative Midwestern isolationism are not always made clear, but it is sometimes suggested that inland geographic location in itself plays an important role in developing opposition to involvement in international affairs.<sup>19</sup> There is relatively little solid documentary evidence to support this argument, and most of the careful research that has been done has cast doubt upon the notion that the Midwest is, in fact, a "region of isolationism"<sup>20</sup> or has explained such interior-coastal differences as exist in terms of influences other than geographic location.<sup>21</sup> The question has, however, continued to concern analysts and for this reason is included in the present study.

The index of Presidential Support (Foreign) provides a good test of the Midwestern isolationism hypothesis. The roll call votes included in this index deal with matters such as foreign aid and trade, or participation of the United States in international organizations. In every case the position taken by the President was in favor of greater American involvement with other countries. Agreement with the presidential position can therefore be taken as a measure of a Congressman's internationalism and disagreement as a measure of distrust of foreign entanglements, or what here will be designated as "isolationism."

Table 39 sets forth scores by section of the five roll call indices. For four of these indices, section is broken down, as in the last chapter, into Southern and non-Southern categories. For Presidential Support

(Foreign) scores, districts are classified as Southern, Midwestern, and, for want of a better term, Coastal. This last category is made up of districts in the Northeastern, Border, and Western sections defined in Chapter III.

The table shows that only on the factor indices are sections distinguished to even a moderate degree, with the South exhibiting roll call behavior at once more pro-Democratic and more conservative than the non-South. The South demonstrates almost exactly the same degree of support for domestic Presidential policy as does the rest of the country, and despite its reputation as a bastion of states' rights sentiment, the South provides only slightly less support than does the non-South for measures expanding the role of the federal government. Few sectional differences appear in Presidential Support (Foreign). As hypothesized, the Midwest does seem to be more isolationist than the coastal sections, but the difference is a small one. Southern isolationism is even less pronounced, apparently contradicting findings of other researchers who have traced a movement of Southern representatives from a strongly internationalist stance in the New Deal era to an isolationist position after World War II.

22

War II.

The standard deviations shown in the table indicate that sections generally display very little cohesion in their roll call behavior, with the exceptions of the South on Partisanship and the non-South on Ideology. Overall the squared correlation ratios indicate that the sectional classifications employed have substantial explanatory power only with respect to the Ideology dimension.

TABLE 39

## ROLL CALL VOTING INDICES, BY SECTION

	South	Non-South	Midwest	Coastal	All Dists.
Partisanship					
$\mu$	-.65	.21	---	---	-.00
$\theta$	.65	1.00	---	---	.99
$\eta^2$					.14
Ideology					
$\mu$	-1.10	.36	---	---	.00
$\theta$	.90	.69	---	---	.98
$\eta^2$					.41
Larger Federal Role					
$\mu$	.30	.44	---	---	.40
$\theta$	.50	.53	---	---	.53
$\eta^2$					.01
Pres. Support (Domestic)					
$\mu$	.29	.29	---	---	.29
$\theta$	.41	.54	---	---	.51
$\eta^2$					.00
Pres. Support (Foreign)					
$\mu$	.07	---	-.14	.26	.11
$\theta$	.52	---	.67	.61	.63
$\eta^2$					.07

In Table 40 dummy sectional variables are added to the regression equations for each of the five roll call indices. As in the previous chapter, the regression coefficients associated with the sectional variables provide a means of assessing the effect of geographic location within the sections themselves by providing an estimate of the effect on the dependent variable of sectional location with other independent variables in the equation held constant. Multiple and partial correlation coefficients provide an estimate of the overall impact of section on the dependent variable for the country as a whole. The  $\beta$  coefficients in Table 41 indicate that, with constituency factors held constant, a district in the South would score .446 standard deviations lower in liberal ideology than would a comparable district outside the South, and .299 standard deviations lower if the five individual characteristics which entered the Ideology equation earlier were held constant. Other  $\beta$  coefficients associated with sectional variables are lower, indicating only slight tendencies for representatives of districts in different sections to vote in ways other than what would be predicted on the basis of the attributes of their constituencies.

Section has even less explanatory power in terms of its effect on voting patterns in the Congress as a whole. In Table 41, partial correlations between roll call voting and section (controlling for constituency attributes) and between roll call voting and constituency attributes (controlling for section) are set forth, having been computed using the same formula described in Chapter IV. The table clearly shows that only on the

TABLE 40  
REGRESSION OF ROLL CALL INDICES ON CONSTITUENCY ATTRIBUTES AND SECTION

Variable	ROLL CALL INDEX									
	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
R <sup>2</sup>	.60	.73	.42	.47	.49					
R <sup>2</sup>	.36	.53	.17	.22	.24					
Deprivation	-.166	-.162	-.156	-.155	.037	.068	.031	.058	.024	.036
Affluence	.270	.267	.098	.098	-.042	-.079	-.091	-.174	-.086	-.135
Home Ownership	.349	.343	-.260	-.261	-.174	-.322	-.204	-.391	-.229	-.355
Industrialization	-.056	-.052	.215	.202	.118	.205	.083	.149	.099	.144
SFC	.075	.073	.015	.015	-.027	-.050	-.032	-.060	-.027	-.042
Population Dynamism	-.100	-.098	-.050	-.050	-.011	-.021	.039	.065	.015	.024
South	-.618	-.267	-1.014	-.446	-.114	-.093	.005	.004	-.117	-.080
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	-.282	-.198
(constant)	.150		.247		.431		.290		.213	

TABLE 40 -- Continued

Variable	Partisanship		Ideology		Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
*R <sup>2</sup>	.67		.77		.53		.57		.55	
*R <sup>2</sup>	.45		.59		.29		.32		.30	
Illit.	-6.254	-.373	-----	-----	3.015	.339	2.171	.252	2.054	.193
Own. Occ.	1.373	.201	-----	-----	-----	-----	-.312	-.089	-.735	-.170
Coll. Ed.	17.493	.552	-----	-----	-----	-----	-4.665	-.286	-4.790	-.239
Wht. Col.	-5.024	-.422	-----	-----	-----	-----	-----	-----	-----	-----
Mobil.	-1.967	-.160	-.937	-.078	-----	-----	-----	-----	-----	-----
For. Stk.	-----	-----	1.645	.244	.704	.193	.633	.179	-----	-----
Ineq.	-----	-----	.809	.035	-----	-----	-----	-----	-----	-----
Unempl.	-----	-----	11.229	.206	3.941	.134	1.842	.065	-----	-----
Low Inc.	-----	-----	-3.450	-.312	-----	-----	-----	-----	-----	-----
Agric.	-----	-----	-----	-----	-1.812	-.276	-2.686	-.423	-3.039	-.388
Manuf.	-----	-----	-----	-----	-----	-----	-1.038	-.216	-.872	-.147
South	-.326	-.141	-.679	-.299	-.179	-.146	-.006	-.054	-.287	-.196
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	-.223	-.156
(constant)	1.472		-.085		-.024		.913		1.327	

\* includes effects of all nineteen individual characteristics.

TABLE 41

SQUARED PARTIAL CORRELATIONS OF ROLL CALL INDICES  
WITH CONSTITUENCY ATTRIBUTES AND SECTION

	Parti- san- ship	ROLL CALL INDEX			
		Ideo- logy	Larger Federal Role	Pres. Support (Domestic)	Pres. Support (Foreign)
A. FACTORS					
Constituency Attributes (section controlled)	.26	.20	.16	.22	.18
Section (constituency attributes controlled)	.04	.15	.00	.00	.04
B. INDIVIDUAL CHARACTERISTICS					
Constituency Attributes (section controlled)	.36	.29	.27	.32	.25
Section (constituency attributes controlled)	.00	.09	.02	.01	.03

Ideology index does section have even moderate explanatory power, while, in general, controlling for section only marginally affects the relationships between attributes and voting.

Separate analyses of the effects of constituency attributes on roll call behavior were carried out within-section. Such analyses added little information to that already set forth and so are not presented here.

To this point, the analysis of constituency influence in congressional voting has failed to take into account the nature of the linkages between the two. These linkages are extremely complex, and many, such as attitudinal variables, cannot be measured with the kind of aggregate data employed in the present study.<sup>23</sup> Nevertheless, the information that is available can provide clues about certain variables that may be hypothesized to intervene between constituency attributes and roll call voting. The remainder of this chapter will be devoted to examination of two such variables: the party affiliation of representatives and the margin of their elections to Congress.

Most researchers who have analyzed legislative politics at either the national or state level have concluded that a representative's party affiliation is the most powerful determinant of his voting behavior. More specifically, countless investigations have determined that, whether compared to sectional areal groupings, urban-related areal classifications, or specific attributes, party can be shown to be considerably more important than constituency in explaining roll call voting patterns.<sup>24</sup>

This view has been challenged by Froman,<sup>25</sup> who argues that inter-party voting differences are due, not so much to the fact of party affiliation as such, but to the differences in constituency environment between districts that elect Republicans and those that elect Democrats. He contends that, were these constituency differences held constant, many of the inter-party differences that he and others have observed would disappear. Though the evidence which Froman advances to defend his hypothesis is rather weak,<sup>26</sup> support for his argument can be found in the fact that researchers who have emphasized the primacy of party over constituency in influencing roll call behavior have tended to bias their research against constituency. Some have done this by employing, as measures of constituency, traditional areal classification schemes which, as indicated in Chapter III, are at best dubious indicators of constituency environment. Others have compared party to only a few constituency attributes, thus failing to provide an accurate measure of the total impact of constituency on voting. Even Vanderslik, who employs twenty-one constituency variables, measures only the impact of each individually, and does not attempt to assess their combined effect.<sup>27</sup>

Introduction of the party affiliation variable to the present analysis of roll calls begins in Table 42, which provides an overall comparison of voting behavior by Republicans and Democrats on each roll call index.<sup>28</sup> This table simply recapitulates what has been said earlier. The association between party affiliation and Partisanship is virtually a tautology, since party affiliation is perfectly correlated with the Speaker-

TABLE 42

ROLL CALL VOTING INDICES,  
BY PARTY AFFILIATION OF REPRESENTATIVES

	Democrats	Republicans	All District
Partisanship			
$\mu$	-.18	1.17	-.00
$\theta$	.25	.17	.99
$\eta^2$			.95
Ideology			
$\mu$	.01	-.00	.00
$\theta$	1.11	.75	.98
$\eta^2$			.00
Larger Federal Role			
$\mu$	.66	.04	.29
$\theta$	.42	.45	.51
$\eta^2$			.34
Pres. Support: (Domestic)			
$\mu$	.64	-.21	.40
$\theta$	.33	.23	.53
$\eta^2$			.67
Pres. Support (Foreign)			
$\mu$	.51	-.47	.11
$\theta$	.44	.35	.63
$\eta^2$			.59

ship vote (except for absences),<sup>29</sup> and since this vote is, in turn, almost perfectly correlated with the factor itself. What is significant about this is that the first dimension to emerge from the factor analysis should be so closely related to party affiliation and that it should account for so much of the total variance in roll call behavior.

The lack of association between Ideology and party affiliation is also not at all surprising, given the nature of this factor. Finally, it should be noted that the squared correlation ratios between party affiliation and each of the Congressional Quarterly indices are almost identical to the squares of the correlation coefficients shown earlier in Table 36 between these indices and the Partisanship dimension.

What these figures do show is that the differences between the roll call behavior of Republicans and Democrats are substantial. Table 43 tests Froman's hypothesis that the inter-party differences described here are in fact reflections of inter-party differences in constituency attributes. Districts represented by Democrats were given a score of one, and those represented by Republicans were scored zero. This dummy numerical variable was then added to the regression analysis of constituency attributes and sectional location set forth earlier.

The regression coefficients associated with party affiliation clearly indicate the very strong effect of this variable upon roll call behavior, even when constituency variables are held constant. These figures show that a Democratic Congressman will score about nine-tenths of one standard deviation higher in both Domestic and Foreign Presidential Support than



TABLE 43 -- Continued

Variable	Partisanship		Ideology		ROLL CALL INDEX Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
		.98		.79		.73		.90		.87
		.96		.62		.54		.80		.75
Illit.	-.830	-.049	-----	-----	.682	.077	.179	.021	.031	.003
Own. Occ.	-.038	-.006	-----	-----	-----	-----	.216	.062	-.020	-.005
Coll. Ed.	1.312	.041	-----	-----	-----	-----	.223	.014	1.171	.058
Whit. Col.	-.590	-.050	-----	-----	-----	-----	-----	-----	-----	-----
Mobil.	-.041	-.003	-1.403	-.116	-----	-----	-----	-----	-----	-----
For. Stk.	-----	-----	1.109	.164	.467	.128	.405	.115	-----	-----
Ineq.	-----	-----	2.127	.094	-----	-----	-----	-----	-----	-----
Unempl.	-----	-----	8.387	.154	1.149	.039	1.604	.056	-----	-----
Low Inc.	-----	-----	-4.646	-.420	-----	-----	-----	-----	-----	-----
Agric.	-----	-----	-----	-----	-1.213	-.185	-.864	-.136	-1.040	-.133
Manuf.	-----	-----	-----	-----	-----	-----	-.124	-.026	.049	.008
South	-.039	-.017	-.896	-.394	-.321	-.261	-.274	-.231	-.469	-.320
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	-.073	-.052
Party	-1.910	-.945	.480	.242	.677	.632	.937	.902	1.121	.876
(constant)	1.397		-.139		-.038		-.428		-.432	

\* includes effect of all nineteen individual characteristics.

would a Republican representative from an identical constituency. For the Larger Federal Role score, the relationship is not quite as strong, but is still very marked.

This conclusion about the importance of party affiliation is reinforced in Table 44, which sets forth squared partial correlations between roll call voting and party (controlling for all constituency variables including section) and between voting and constituency (controlling for party). These figures show that, contrary to Froman's hypothesis, associations between party and roll call behavior not only do not diminish, but actually increase slightly when constituency is held constant.

In the case of the Partisanship dimension, the above findings do not really provide a meaningful test of Froman's hypothesis since, as already indicated, this roll call index, for all practical purposes, is party affiliation. Much more significant is the importance of party affiliation for scores on the three Congressional Quarterly indices. Only for the Ideology dimension is party not a major determinant, and it should be remembered that in this case party affiliation has in effect already been partialled out by the very nature of the dimension. The data then rather clearly point to rejection of Froman's hypothesis.

Just as it is possible to statistically hold constituency constant in order to test the proposition that relationships between party and roll call behavior are spurious, so also can party affiliation be held constant in order to examine the remaining relationship between roll call

TABLE 44

SQUARED PARTIAL CORRELATIONS OF ROLL CALL INDICES  
WITH CONSTITUENCY VARIABLES (INCLUDING SECTION) AND PARTY

	Partisan- ship	ROLL CALL INDEX			
		Ideo- logy	Larger Federal Role	Pres. Support (Domestic)	Pres. Support (Foreign)
A. FACTORS					
Constituency Variables (party controlled)	.03	.57	.25	.35	.36
Party (constituency controlled)	.92	.09	.40	.72	.66
B. INDIVIDUAL CHARACTERISTICS					
Constituency Variables (party controlled)	.12	.62	.30	.40	.39
Party (constituency variables controlled)	.92	.09	.36	.71	.64

voting and constituency. Here the concern is not with "spuriousness," but rather with determining whether and to what extent the relationship between constituency and legislative voting is mediated through party. Controlling for party affiliation is not very meaningful in the case of the Partisanship dimension, for reasons already indicated, and, similarly, party affiliation has in effect already been controlled in the Ideology factor. More interesting results can be found in the partials shown in Table 44 between constituency and the three Congressional Quarterly indices. These show that, when party is controlled, the moderate overall associations found earlier between constituency and voting tend to increase somewhat.

The above findings seem to indicate that to some extent the effects of party and constituency on roll call voting tend to cancel one another out. On the one hand, they show that the party differences given in Table 42 are actually accentuated slightly when the effects of constituency variables are deleted from the analysis. This supports the frequently advanced hypothesis that the presence of constituency influences mitigates the influence of party,<sup>30</sup> though it should be noted that the effect produced by controlling constituency is a very small one. Conversely, the findings reported here indicate that, rather than serving as a conduit for constituency influences, the presence of the effects of party affiliation depress somewhat the relationship between constituency and roll call behavior in comparison to the relationship found when party affiliation is partialled out of the analysis.

A few more specific conclusions are suggested by the regression coefficients in Table 43. The coefficients associated with Midwestern geographic location show that even the weak relationship reported earlier in Table 41 between that variable and isolationism can for the most part be explained in terms of the section's Republican tendencies.<sup>31</sup> On the other hand, the relationships found between Southern location and roll call voting are not diminished by a control for party affiliation and, in fact, increase slightly.<sup>32</sup>

Finally, Table 45 presents regression analyses of roll call voting on constituency variables within each party. The table indicates that, among districts represented by Democrats, Southern geographic location is a variable of some importance.<sup>33</sup> No single variable stands out clearly among Republican districts and, in general, most coefficients for both parties are rather modest in strength.

The second intervening variable to be considered is inter-party competition. This variable will be defined in the same way as was done in the last chapter, that is, as the proportion of the two-party vote received by the losing major party candidate in the 1962 congressional election.<sup>34</sup>

Viewed as an independent variable with respect to roll call behavior, electoral competition has been the subject of much discussion, which has unfortunately produced few conclusive results. A careful review of the literature reveals at least three distinct hypotheses that have appeared.<sup>35</sup>

TABLE 45

WITHIN-PARTY REGRESSION OF ROLL CALL INDICES ON  
 CONSTITUENCY ATTRIBUTES AND SECTION

Variable	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
<b>A. DEMOCRATS</b>										
1. Factors										
$R^2$	.16		.82		.60		.67		.66	
$R$	.03		.63		.36		.44		.43	
Deprivation	.004	.015	-.193	-.186	-.030	-.076	-.048	-.155	-.067	-.162
Affluence	.008	.025	.131	.087	.020	.035	.028	.062	.062	.105
Home Ownership	-.006	-.028	-.131	-.129	-.006	.016	-.014	-.045	-.032	-.080
Industrialization	-.007	-.027	.161	.163	.074	.161	.044	.121	.053	.116
SFC	.025	.106	.013	.013	-.016	-.039	-.012	-.039	-.003	-.008
Population Dynamism	-.004	-.015	.005	.005	-.011	-.026	.010	.030	.001	.003
South	-.052	-.099	-1.325	-.579	-.409	-.426	-.338	-.492	-.406	-.449
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	.031	.026
(constant)	.785		.546		.822		.778		.682	
2. Individual Characteristics										
$*R^2$	.42		.85		.64		.71		.70	
$*R$	.17		.72		.41		.50		.49	
65+	2.702	.258	-----	-----	-----	-----	-----	-----	-----	-----
Pop. Gro.	.167	.243	-----	-----	-----	-----	-----	-----	-----	-----
Black	.271	.165	-.561	-.078	-.267	-.098	-.310	-.143	-.264	-.092

TABLE 45 -- Continued

	ROLL CALL INDEX									
	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	f	b	$\beta$	b	$\beta$	b	$\beta$
Density	.000	.075	-----	-----	-----	-----	-----	-----	-----	-----
Low Inc.	-----	-----	-3.092	-.274	-----	-----	-.805	-.237	-1.187	-.266
Unempl.	-----	-----	11.227	.187	2.901	.129	3.167	.176	4.920	.208
Priv. Ed.	-----	-----	1.423	.161	.523	.158	.271	.102	.442	.127
Ineq.	-----	-----	-----	-----	-1.144	-.132	-----	-----	-----	-----
South	-.048	-.092	-.984	-.430	-.266	-.309	-.215	-.312	-.252	-.278
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	.001	.001
(constant)	-1.117		.122		.981		.679			.498
* includes effects of all nineteen individual characteristics.										
B. REPUBLICANS										
1. Factors										
R	.38		.61		.47				.50	.57
R <sup>2</sup>	.14		.37		.22				.25	.33
Variable	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
Deprivation	-.050	-.178	-.156	-.129	-.002	-.003	-.031	-.083	-.029	-.052
Affluence	.018	.125	.149	.233	.058	.154	.034	.176	.067	.226
Home Ownership	.047	.171	-.307	-.255	-.159	-.222	-.091	-.243	-.095	-.170
Industrialization	.010	.054	.244	.301	.120	.249	.067	.267	.072	.192
SFC	-.005	-.026	.019	.020	-.001	-.002	.007	.026	.018	.043
Population Dynamism	.017	.099	-.207	-.272	-.117	-.260	-.066	-.282	-.089	-.252

TABLE 45 -- Continued

Variable	ROLL CALL INDEX											
	Partisanship			Ideology			Federal Role			Pres. Support		
	b	$\beta$		b	$\beta$		b	$\beta$		b	$\beta$	
South	-.157	-.220		-.564	-.182		-.068	-.037		-.022	-.028	
Midwest	-----	-----		-----	-----		-----	-----		-----	-----	
(constant)	1.134		.005	.064						-.208		-.399
2. Individual Characteristics												
*R <sup>2</sup>	.56			.71			.62			.67		
*R <sup>2</sup>	.31			.51			.38			.44		
Illit.	-2.603	-.434		-----	-----		-----	-----		-----	-----	-----
-18	1.078	.216		-----	-----		-----	-----		-----	-----	-----
Black	.823	.211		-----	-----		-----	-----		-----	-----	-----
Coll. Ed.	-1.727	-.373	13.074	.650		8.535	.714		4.049	.650		7.150
High Inc.	1.441	.352	-9.755	-.547		-5.546	-.524		-2.909	-.527		-3.829
For. Stk.	-----	-----	1.707	.261		1.383	.356		.680	.336		.527
Manuf.	-----	-----	.150	.020		-----	-----		-----	-----		.696
Mobil.	-----	-----	-3.737	-.412		-2.136	-.397		-1.442	-.513		-1.694
Agric.	-----	-----	-2.476	-.268		-2.322	-.423		-.809	-.282		-----
Density	-----	-----	.000	.150		-----	-----		-----	-----		-----
Low Inc.	-----	-----	-----	-----		2.583	.332		-----	-----		-----
Own. Occ.	-----	-----	-----	-----		-----	-----		-.376	-.145		-.705
Priv. Ed.	-----	-----	-----	-----		-----	-----		-.349	-.150		-----
South	-.076	-.106	-.621	-.200		-.142	-.077		-.037	-.039		-.167
Midwest	-----	-----	-----	-----		-----	-----		-----	-----		-.111
(constant)	2.036		1.054			.292			.549			.198

\* includes effects of all nineteen individual characteristics.

Hypothesis One: Representatives from marginal districts tend to be more liberal in their voting behavior than representatives from safe districts. Duane Lockard, in a comparison of state legislative bodies in New England, succinctly sums up the reasoning behind this hypothesis:

In the two-party states the anxiety over the next election pushes political leaders into serving the interests of the have-less element of society, thereby putting the party into the countervailing power operation. Conversely, in the one-party states it is easier for a few powerful interests to manage the government of the state without party interference since the parties are not representative of the particular elements that might pose opposition to the dominant interest groups. The parties do not represent the have-less element for the simple reason that politically there is no necessity to do so.<sup>36</sup>

Hypothesis Two: Representatives from marginal districts tend to be more extreme in their voting behavior than representatives from safe districts. In an article that appeared in 1950, Samuel Huntington hypothesized that party differences in voting behavior are greater in competitive districts than in safe ones.<sup>37</sup> A diametrically opposite position has been taken by Lockard who states that, "the pressures of close competition tend to pull the parties to a median ground where party differences are minimized."<sup>38</sup> Opposition to Huntington's hypothesis is also implicit in Anthony Downs' theory of party equilibrium. Downs, attempting to develop deductively a model of party behavior, posits the notion that in a two-party system, competition between the parties tends to draw opposing candidates toward similar "middle of the road" positions on issues.<sup>39</sup>

Hypothesis Three: Representatives from marginal districts tend to be more sensitive to constituency pressures than representatives

from safe districts. For a concise statement of this argument, one can again turn to Lockard who notes that, "the common assumption is that the political leaders in a two-party system are more responsible to the preferences of the citizenship, whether of high or low status in life, not so much out of principle as out of fear of retribution at the polls."<sup>40</sup> This hypothesis differs from the first hypothesis in that it does not posit the specific direction in which competitiveness will influence roll call voting, but simply suggests that it will tend to make such voting more responsive to constituency wishes. As with the second hypothesis, one can find in the literature writers who take a position quite different from that stated in Hypothesis Three. For example, in his classic study of the Eighty-first Congress, David Truman suggests that party leaders can exercise greater influence over Congressmen and Senators from marginal seats, since such legislators, with their reelections in doubt, are more dependent upon the party for rewards such as patronage, committee assignments, and appropriations of federal funds for their states and districts.<sup>41</sup>

A first approximation to a test of Hypothesis One can be made simply by examining, for the Congress as a whole, the zero-order correlation between marginality and support for the liberal or "have-not" position on each of the roll call indices. An examination of the contents of these indices shows that, in general, the position taken by the Democratic party, when it opposed the Republicans, was the position that at face value appeared to be the position favoring what can be referred to as the

"have-nots" -- minority groups, the poor, and so on. Similarly, positive scores on the Ideology dimension, support for a Larger Federal Role, and agreement with the domestic positions taken by Presidents Kennedy and Johnson would generally be conceded to represent support for "have-not" constituents. For Presidential Support (Foreign), no such inferences can easily be made in either direction, but for the sake of completeness, this index too will be included in the analysis which follows.

Table 46, in which the zero-order correlations are presented, produces no clear cut results. The hypothesis is supported for the Ideology dimension, but contradicted for the Partisanship dimension, in which competition is associated with pro-Republican voting behavior. Correlations for the remaining three indices are negligible.

TABLE 46

CORRELATIONS BETWEEN ROLL CALL INDICES  
AND INTER-PARTY COMPETITION

	Competition
Partisanship	.38
Ideology	.40
Larger Federal Role	-.02
Pres. Support (Domestic)	-.11
Pres. Support (Foreign)	-.09

As demonstrated by the analysis of inter-party competition in Chapter IV, however, marginality is related both to party affiliation and

to constituency variables. To adequately test the hypothesis that competition as such contributes to liberal voting behavior, it is necessary to control for the effects on voting of party and constituency. To do this, the competition variable was added to the analyses described earlier in which roll call voting was regressed on party and constituency. The new equations which resulted from this are shown in Table 47. An examination of the regression coefficients associated with competition in this table shows that all relationships are in the hypothesized direction, with the single exception of the analysis of Partisanship in which factors are used as measures of constituency attributes. These coefficients are, however, uniformly very low and, as indicated by a comparison of the multiple correlations in this table with those in Table 40, addition of competition to the regression analyses adds virtually nothing to the explained variance in roll call behavior.

Hypothesis Two states that electoral competition has a tendency to increase differences between the two parties. This leads to expectations that are in part somewhat different from those produced by Hypothesis One. As would the first hypothesis, Hypothesis Two suggests that, within the Democratic party, Congressmen who won their elections by narrow margins would tend, all else being equal, to vote more liberally than their colleagues in safe seats. For Republicans, on the other hand, exactly the opposite is the case and the hypothesis would lead to the prediction that marginally elected Republicans should be the most conservative within their parties. Similarly, Hypothesis Two suggests that

TABLE 47

## REGRESSION OF ROLL CALL INDICES ON CONSTITUENCY ATTRIBUTES,

## SECTION, PARTY, INTER-PARTY COMPETITION

Variable	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
A. FACTORS										
R <sup>2</sup>	.98		.76		.71		.89		.86	
R <sup>2</sup>	.95		.58		.51		.78		.74	
Deprivation	.001	.001	-.146	-.145	-.012	-.022	-.037	-.070	-.049	-.075
Affluence	.007	.007	.148	.149	.056	.104	.036	.069	.074	.115
Home Ownership	.005	.004	-.185	-.185	-.042	-.079	-.036	-.069	-.049	-.076
Industrialization	-.001	-.001	.192	.181	.094	.163	.053	.095	.068	.099
SFC	.009	.009	.017	.017	.006	-.012	-.003	-.007	.006	.009
Population Dynamism	.005	.005	-.082	-.082	-.054	-.100	-.020	-.039	-.039	-.061
South	-.007	-.033	-1.100	-.484	-.310	-.253	.250	-.210	-.361	-.247
Midwest	----	----	----	----	----	----	----	----	-.096	-.067
Party	-.193	-.957	.528	.266	.772	.721	.977	.941	1.149	.898
Competition	.045	.007	.860	.129	.258	.072	.238	.068	.251	.059
(constant)	1.150		-.329		-.063		-.305		-.541	

TABLE 47 -- Continued

Variable	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
*R	.98		.79		.74		.90		.87	
*R <sup>2</sup>	.96		.62		.54		.80		.75	
Illit.	-.855	-.051	-----	-----	1.157	.130	.508	.059	.390	.037
Own. Occ.	-.037	-.005	-----	-----	-----	-----	.180	.051	.053	-.012
Coll. Ed.	1.306	.041	-----	-----	-----	-----	.291	.018	1.256	.063
Whit. Col.	-.588	-.049	-----	-----	-----	-----	-----	-----	-----	-----
Mobil.	-.042	-.003	-1.324	-.110	-----	-----	-----	-----	-----	-----
For. Stk.	-----	-----	1.241	.184	.464	.127	.386	.109	-----	-----
Ineq.	-----	-----	1.947	.086	-----	-----	-----	-----	-----	-----
Unempl.	-----	-----	8.237	.151	.998	.034	1.518	.053	-----	-----
Low Inc.	-----	-----	-4.066	-.368	-----	-----	-----	-----	-----	-----
Agric.	-----	-----	-----	-----	-1.199	-.183	-.822	-.129	-.981	-.125
Manuf.	-----	-----	-----	-----	-----	-----	-.102	-.021	.074	.012
South	-.040	-.017	-.846	-.372	-.308	-.251	-.263	-.221	-.451	-.308
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	-.073	-.051
Party	-1.910	-.945	.501	.252	.684	.638	.942	.907	1.126	.881
Competition	-.021	-.003	.573	.086	.345	.096	.267	.077	.298	.070
(constant)	1.405		-.425		-.193		-.534		-.567	

\* includes effects of all nineteen individual characteristics.

competition should tend to produce greater internationalism within the Democratic party, but foster isolationism in Republicans. On the Ideology dimension, no clear predictions are suggested by the hypothesis, since on this index there are virtually no inter-party differences. The most that can be said here is that, if competition increases party differences, it should affect Democrats in a direction opposite to its effect on Republicans.

Conversely, of course, the Lockard-Downs hypothesis produces an opposite set of expectations. This hypothesis would lead one to predict that marginal Democratic districts should be more conservative and isolationist than safe Democratic seats and that, within the Republican party, competition should be associated with liberalism and internationalism.

Table 48 displays, within each party, the zero-order correlations between competition and each of the roll call indices. The table tends to offer some support for Huntington's position, largely due to moderately high associations, within the Democratic party, between competition and liberal and internationalist voting behavior. Within the Republican party, competition has only a very slight association with conservatism and isolationism. The net effect of these correlations, however, is to suggest that competition is indeed related to an increase in inter-party polarization. Only on the Partisanship dimension does competition have correlations within both parties that are small and in the same direction.

TABLE 48

WITHIN-PARTY CORRELATIONS BETWEEN ROLL CALL INDICES  
AND INTER-PARTY COMPETITION

	Competition	
	Democrats	Republicans
Partisanship	.12	.03
Ideology	.53	-.07
Larger Federal Role	.36	-.01
Pres. Support (Domestic)	.43	-.03
Pres. Support (Foreign)	.42	-.15

It is again necessary, however, to control for the effect of constituency variables before concluding that Huntington's hypothesis is upheld. This has been done in Table 49 by adding competition to the within-party regressions of roll call behavior on constituency. The table shows again that regression coefficients associated with competition are all extremely small and that, when the squared multiple correlation coefficients in the table are compared with those in Table 45, competition contributes little or nothing to explained roll call variance. There is, therefore, almost no support in the data for either Huntington's hypothesis or for the alternative hypothesis suggested by Lockard and by Downs.

Hypothesis Three states that constituency influence is greater in competitive districts than in non-competitive ones. An alternative hypothesis suggests that party forces are more influential in marginal districts. To test both of these propositions, districts were divided into two

TABLE 49

WITHIN-PARTY REGRESSION OF ROLL CALL INDICES ON CONSTITUENCY ATTRIBUTES,  
SECTION, AND INTER-PARTY COMPETITION

Variable	Partisanship		Ideology		ROLL CALL INDEX Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
A. DEMOCRATS										
1. Factors										
R <sup>2</sup>	.18		.83		.60		.67		.66	
R <sup>2</sup>	.03		.68		.36		.45		.44	
Deprivation	.013	.054	-.147	-.142	-.022	-.056	-.040	-.128	-.054	-.130
Affluence	.000	.001	.091	.061	.013	.022	.021	.046	.051	.085
Home Ownership	-.010	-.043	-.148	-.146	-.009	-.025	-.017	-.056	-.037	-.093
Industrialization	-.009	-.034	.151	.124	.072	.158	.042	.116	.051	.106
SFC	.023	.006	.002	.001	-.018	-.045	-.014	-.046	-.007	-.017
Population Dynamism	-.006	-.020	-.001	-.001	-.012	-.028	.009	.026	-.031	-.002
South	-.035	-.067	-1.243	-.543	-.395	-.459	-.323	-.470	-.383	-.424
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	.026	.022
Competition	.161	.109	.788	.120	.141	.057	.149	.076	.228	.088
(constant)	-.843		.264		.772		.724		.602	
2. Individual Characteristics										
*R <sup>2</sup>	.42		.85		.64		.71		.70	
*R <sup>2</sup>	.18		.72		.41		.51		.49	
65+	2.665	.254	-----	-----	-----	-----	-----	-----	-----	-----
Pop. Gro.	.153	.223	-----	-----	-----	-----	-----	-----	-----	-----



TABLE 49 -- Continued

2. Individual Characteristics	ROLL CALL INDEX											
	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)			
Variable	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
Illit.	-2.697	.450	-.71	.62	-.62	.67	-.69	.69	-.69	.69	-.69	.69
-18	1.109	.222	.51	.39	-.39	.44	-.48	.48	-.48	.48	-.48	.48
Black	.858	.220	-.71	.62	-.62	.67	-.69	.69	-.69	.69	-.69	.69
Coll. Ed.	-1.815	-.393	13.737	.650	8.973	.751	4.048	.650	7.020	.751	4.048	.650
High Inc.	1.472	.359	-9.755	-.547	-5.608	-.530	-2.909	-.527	-3.846	-.465	-2.909	-.527
For. Stk.	-.71	.62	1.708	.261	1.400	.361	.680	.336	.555	.183	.680	.336
Manuf.	-.71	.62	.150	.020	-.71	.62	-.71	.62	-.71	.62	-.71	.62
Mobil.	-.71	.62	-3.737	-.412	-2.172	-.392	-1.442	-.513	-1.685	-.400	-1.442	-.513
Agric.	-.71	.62	-2.476	-.268	-2.483	-.452	-.809	-.282	-.71	.62	-.71	.62
Density	-.71	.62	.000	.150	-.71	.62	-.71	.62	-.71	.62	-.71	.62
Low Inc.	-.71	.62	-.71	.62	3.014	.388	-.71	.62	-.71	.62	-.71	.62
Own. Occ.	-.71	.62	-.71	.62	-.71	.62	-.376	-.145	-.678	-.174	-.376	-.145
Priv. Ed.	-.71	.62	-.71	.62	-.71	.62	-.349	-.150	-.71	.62	-.71	.62
South	-.067	-.094	-.620	-.200	-.196	-.106	-.037	-.039	-.148	-.102	-.037	-.039
Midwest	-.71	.62	-.71	.62	-.71	.62	-.71	.62	-.71	.62	-.71	.62
Competition	-.138	-.051	-.004	-.000	.670	.095	-.001	-.000	-.429	-.078	-.001	-.000
(constant)	2.120		1.055		-.051		.550		.349		.550	

\* includes effects of all nineteen individual characteristics.

categories: competitive (those in which the winning candidate received 60 per cent or less of the two-party vote), and safe (those in which the victor garnered more than 60 per cent of the two-party total).<sup>42</sup> Within each of these groups, roll call behavior was regressed on both constituency and party. Results are given in Table 50. It can be seen from the table that b coefficients for party affiliation are very similar for both safe and competitive seats, thus failing to confirm Truman's hypothesis of greater party influence in marginal districts. As to constituency variables, the one clear difference that does emerge in the table is for the variable measuring Southern geographic location. It can be seen that b coefficients for this variable are higher in competitive than in safe seats. This is in spite of the fact that non-competitive districts in the South tend to be in the most traditional areas of that region, that is, in those places where one would expect Southern political culture to be strongest. It appears, therefore, that competition has some tendency to sensitize Congressmen to influences associated with Southern sectionalism.

In sum, electoral competition seems in general to have very little to do with a Congressman's roll call behavior. Once again, this is not very surprising in the case of the Partisanship dimension since virtually all of the variance in this index has already been accounted for by party affiliation. Essentially the same results, however, are found in the four remaining roll call indices and so it seems fairly safe to conclude that competition is not an important variable for understanding the voting behavior of Congressmen.

TABLE 50

SAFE SEATS VS. COMPETITIVE SEATS -- REGRESSION OF ROLL CALL INDICES ON  
 CONSTITUENCY ATTRIBUTES, SECTION, AND PARTY

ROLL CALL INDEX

Variable	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
A. Safe Seats										
1. Factors										
R	.97		.77		.67		.85		.83	
R <sup>2</sup>	.94		.60		.44		.73		.68	
Deprivation	-.007	-.008	-.256	-.250	-.064	-.128	-.071	-.150	-.083	-.144
Affluence	-.001	-.001	.171	.174	.076	.159	.046	.102	.084	.153
Home Ownership	-.004	-.005	-.186	-.198	-.038	-.084	-.032	-.073	-.053	-.100
Industrialization	-.018	-.016	.236	.198	.107	.185	.072	.131	.106	.159
SFC	.016	.016	.057	.055	-.007	-.014	.008	.017	.009	.156
Population Dynamism	.013	.013	-.094	-.085	-.047	-.088	-.025	-.049	-.055	-.088
South	-.101	-.048	-.962	-.429	-.210	-.192	-.186	-.178	-.278	-.220
Midwest	----	----	----	----	----	----	----	----	-.134	-.095
Party	-1.947	-.943	.454	.205	.754	.699	.960	.937	1.077	.866
(constant)	1.182		-.032		.014		-.233		-.423	
2. Individual Characteristics										
*R	.97		.80		.70		.87		.84	
*R <sup>2</sup>	.95		.64		.49		.76		.70	
Variable										
Illit.	-1.036	-.071	----	----	.348	.045	.419	.057	.259	.029
Agric.	.182	.015	----	----	-1.406	-.221	-.929	-.154	-1.186	-.162

TABLE 50 -- Continued

	ROLL CALL INDEX									
	Partisanship		Ideology		Larger Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
Coll. Ed.	.823	.029	-----	-----	-----	-----	-1.175	-.082	.575	.033
Manuf.	.132	.014	-----	-----	-----	-----	-----	-----	.157	.027
-18	2.170	.100	-----	-----	-----	-----	-----	-----	-----	-----
Mobil.	.235	.018	-----	-----	-----	-----	-----	-----	-----	-----
65+	3.065	.075	-----	-----	-----	-----	-----	-----	-----	-----
Density	.000	.071	-----	-----	-----	-----	-----	-----	-----	-----
For. Stk.	-----	-----	1.356	.202	.375	.114	-----	-----	.464	.123
Low Inc.	-----	-----	-4.218	-.402	-----	-----	-----	-----	-----	-----
Unempl.	-----	-----	7.343	.128	1.608	.057	1.808	.068	-----	-----
Pop. Gro.	-----	-----	-.339	-.101	-----	-----	-----	-----	-----	-----
Own. Occ.	-----	-----	-----	-----	-----	-----	.089	.030	.074	.020
Wht. Col.	-----	-----	-----	-----	-----	-----	.915	.168	-----	-----
South	-.052	-.025	-.703	-.314	-.218	-.199	-.270	-.259	-.334	-.264
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	-.123	-.088
Party	-1.879	-.909	.311	.141	.630	.584	.896	.874	1.014	.815
(constant)	2.085	-----	.003	-----	-.002	-----	-.578	-----	-.533	-----

B. Competitive Seats

1. Factors		R		R <sup>2</sup>		Variable				
		.99	.73	.78	.93	.90				
		.97	.54	.61	.86	.81				
Deprivation	.006	.005	-.076	-.700	.038	.054	-.005	-.008	-.024	-.028
Affluence	.021	.017	.126	.124	.028	.043	.018	.028	.054	.066

TABLE 50 -- Continued

ROLL CALL INDEX

	Partisanship		Ideology		Federal Role		Pres. Support (Domestic)		Pres. Support (Foreign)	
	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$	b	$\beta$
Home Ownership	.056	.037	-.211	-.162	-.099	-.119	-.080	-.096	-.064	-.061
Industrialization	.004	.004	.186	.213	.104	.185	.050	.090	.054	.077
SFC	.002	.001	-.037	-.040	-.019	-.032	-.027	-.046	.004	.006
Population Dynamism	-.008	-.008	-.055	-.065	-.055	-.101	-.014	-.026	-.005	-.008
South	-.035	-.012	-1.472	-.588	-.551	-.341	-.406	-.254	-.511	-.255
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	-.061	-.042
Party	-1.910	-.971	.513	.303	.744	.682	.958	.855	1.172	.864
(constant)	1.130		.080		.103		.162			.436

2. Individual Characteristics

\*R<sup>2</sup> .99

\*R<sup>2</sup> .97

Variable

Illit.	-.653	-.024	-1.286	-.055	-----	-----	.162	.011	-----	-----
Density	-.000	-.010	-----	-----	-----	-----	.000	.006	.000	.001
Mobil.	-.199	-.018	-----	-----	-----	-----	-.068	-.011	-.024	-.003
Coll. Ed.	.213	.006	-----	-----	-----	-----	-----	-----	-----	-----
Ineq.	.320	.011	-----	-----	-.505	-.033	-.219	-.014	-----	-----
For. Stk.	-----	-----	1.751	.260	1.182	.273	-----	-----	-----	-----
Unempl.	-----	-----	5.639	.116	-.720	-.023	1.517	.049	1.752	.045
Agric.	-----	-----	-2.635	-.224	-2.056	-.302	-.765	-.113	-1.937	-.111
Priv. Ed.	-----	-----	-.189	-.023	-.243	-.046	.146	.028	.276	.042
Low Inc.	-----	-----	-----	-----	2.345	.265	-----	-----	-----	-----
South	.015	.005	-1.176	-.470	-.481	-.298	-.374	-.234	-.476	-.237
Midwest	-----	-----	-----	-----	-----	-----	-----	-----	-.052	-.036
Party	-1.917	-.974	.493	.291	.718	.658	.955	.882	1.153	.850
(constant)	1.157		-.298		-.018		-.126			-.488

\* includes effects of all nineteen individual characteristics.

Finally the mean roll call index scores predicted for each constituency type by all the independent variables in the regression equations in Table 47 are compared with the types' actual mean scores. Results are set forth in Table 51. Most of the predicted scores come extremely close to actual results. There are a few discrepancies, and in absolute terms they are larger than those found in the previous chapter. It should be kept in mind, however, that the standard deviations of the roll call indices are much larger than for the electoral variables studied in Chapter IV. There is thus little evidence suggesting the presence of major interaction effects.

The single most important conclusion to emerge from the analysis that has been presented in this chapter is that party affiliation seems to exercise an almost dominant influence on the voting of Congressmen, whether this voting is defined in terms of patterns intrinsic to the roll call behavior itself (as in the factor analysis conducted at the beginning of the chapter) or of an extrinsic criterion such as agreement with positions taken by the President of the apparent effect of legislation on federal expansion. In the former case, the first factor to emerge from the analysis, which accounted for about two-fifths of all variance in the roll calls analyzed, was defined almost completely by party affiliation. So nearly was this factor a "party" factor that other variables such as constituency could be analyzed only in terms of their relationship to party. Party also emerged as a major determinant of both domestic and foreign Presidential Support and, to a somewhat lesser degree, of support for a Larger Federal Role.

TABLE 51

## ACTUAL VS. PREDICTED SCORES ON ROLL CALL INDICES

## BY DISTRICT TYPE

Roll Call Index	DISTRICT TYPE				
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived
A. Partisanship					
Actual	.30	.26	-.63	.26	-.73
Predicted by factor equation	.30	.24	-.64	.28	-.71
Predicted by individual equation	.30	.24	-.65	.28	-.72
B. Ideology					
Actual	.49	.09	.38	-.21	-1.08
Predicted by factor equation	.46	.10	.88	-.21	-1.06
Predicted by individual equation	.48	.05	.83	-.14	-1.10
C. Larger Federal Role					
Actual	.47	.33	.82	.22	.37
Predicted by factor equation	.47	.35	.85	.21	.35
Predicted by individual equation	.45	.37	.91	.20	.35

TABLE 51 -- Continued

	DISTRICT TYPE				
	Manu- factur- ing	Pros- perous- Growth	Popu- lation Center	Unde- veloped	Unde- veloped- deprived
D. Pres. Support (Domestic)					
Actual	.29	.21	.75	.13	.32
Predicted					
by factor equation	.29	.22	.76	.24	.36
Predicted					
by individual equation	.28	.24	.76	.03	.25
E. Pres. Support (Foreign)					
Actual	.12	.03	.71	-.11	.12
Predicted					
by factor equation	.12	.05	.70	-.12	.20
Predicted					
by individual equation	.10	.09	.69	-.12	.12

These relationships could not be explained in terms of the different constituency bases of the parties, and, in fact, the relationship was strengthened slightly when constituency was controlled.

Partisan influence goes a long way toward explaining differences and similarities described earlier in the voting behavior of representatives of each of the constituency types. In particular it explains why Undeveloped-deprived districts, which are very atypical of the country as a whole in their social, economic, and demographic characteristics, should display voting behavior on the three Congressional Quarterly indices almost identical to that shown for Congress as a whole. The explanation seems to be that with party controlled (as, in effect, it is in the Ideology dimension) the type produces Congressmen with extremely conservative inclinations (as evidenced by a mean Ideology score of  $-1.08$ ). These Congressmen are, however, Democrats (with a mean Partisanship score of  $-.73$ , most "Democratic" of any type). Party affiliation then apparently influences these representatives in a "liberal" direction, cancelling out the effect of other "conservative" influences, including constituency variables, and producing the type's centrist behavior in the three Congressional Quarterly indices. A similar explanation can help account for the "middle of the road" position on these indices of the South, where most Undeveloped-deprived districts are located.

Congressmen from Population Center districts, on the other hand, are both very liberal on the Ideology dimension and very pro-Democratic on Partisanship. In this case, the effects of party and other variables

reinforce one another, producing the type which is easily the most liberal in the Congressional Quarterly measures.

The above interpretations suggest rather pessimistic conclusions for those who look to the growth of the two-party system in the South to liberalize politics in that section, and suggest rather that the growth of Southern Republicanism will have just the opposite effect. This conclusion is reinforced by the finding that competition seems to increase the salience to Congressmen of influences associated with Southern sectionalism, a variable shown to be related to conservative roll call behavior. It should be clear, of course, that these conclusions apply only to politics at the federal level, where the influence of the national Democratic party is much more directly felt.

It must finally be pointed out that all of the findings presented here are subject to the qualification that use of different indices of roll call behavior might produce quite different results. There is some reason to believe that the indices used here overestimate, perhaps seriously, the impact of party on voting. Given that the first axis to emerge from a roll call factor analysis is an almost pure measure of party difference, it follows that not only will the second factor be largely uncorrelated with party affiliation but that the variance, amounting to almost one-half of the total, not extracted by either factor will also have only minimal associations with party. Similarly, use of the position of the President on roll calls as a criterion for developing indices of voting behavior also tends

to emphasize the influence of party, since a stance on an issue by the President, who is also leader of his party, should increase the salience of party for Congressmen.

## NOTES FOR CHAPTER V

<sup>1</sup> Since the unit of analysis in the present study is the congressional district rather than the individual representative, indices are combined measures in cases where one Congressman died or resigned and was replaced through a special election. Pairs were counted as votes, but announced positions were not. The indices were based on only 434 cases, since Speaker John McCormick did not cast any roll call ballot.

<sup>2</sup> Louis L. Thurstone, "Isolation of Blocs in a Legislative Body by the Voting Records of Its Members," Journal of Social Psychology, III (November, 1932), 425-433.

<sup>3</sup> C. W. Harris, "A Factor Analysis of Selected Senate Roll-Calls, 85th Congress," Educational and Psychological Measurement, VIII (Winter, 1948), 582-591; Hilding B. Carlson and Willard Harrell, "Voting Groups Among Leading Congressmen Obtained by Means of the Inverted Factor Technique," Journal of Social Psychology, XVI (August, 1942), 51-61.

<sup>4</sup> Hayward R. Alker, Jr., "Dimensions of Conflict in the General Assembly," American Political Science Review, LVIII (September, 1964), 653-654; Hayward R. Alker, Jr. and Bruce M. Russett, World Politics in the General Assembly (New Haven: Yale University Press, 1965), pp. 224-252; Anderson et al., Legislative Roll-Call Analysis, chap. vii; Stephen J. Cimbala, "Foreign Policy as an Issue Area: A Roll-Call Analysis," American Political Science Review, LXIII (March, 1969), 148-156; Grumm, "A Factor Analysis of Legislative Behavior"; Marwell, "Party, Region and the Dimensions of Conflict"; Carl D. McMurray, "A Factor Method for Roll-Call Vote Studies," American Behavioral Scientist, VI (April, 1963), 26-27; Russett, International Regions and the International System, chap. iv.

<sup>5</sup> The Pearson product-moment correlation coefficient was used. When raw data are in the form of ranks, as in the case here, the product-moment coefficient reduces to Spearman's rho.

6 This was done after attempts to extract more than two meaningful dimensions proved inconclusive.

7 Duncan MacRae, Jr., Issues and Parties in Legislative Voting, chap. viii.

8 The numbers assigned to the roll calls are taken from the Congressional Quarterly Almanac, 1963, pp. 594-655.

9 Ibid., pp. 712-729.

10 Other more minor differences also should be mentioned. Pairs are not counted as votes by Congressional Quarterly, but were counted in the present analysis. In this study scores were computed for the congressional seat, not the individual Congressman and where one representative left Congress and was replaced during the first session, scores were based on their combined record. Finally, in distinguishing Domestic and Foreign Presidential Support, this writer included in the latter category all 15 votes listed as foreign policy notes in ibid., p. 6 on which the President took a stance. For reasons not readily apparent, Congressional Quarterly included only 14 votes in its index.

11 Rice, "The Identification of Blocs,"

12 For example, see John G. Grumm, "The Means of Measuring Conflict and Cohesion in the Legislature," Southwestern Social Science Quarterly, XLIV (December, 1963), 377-388.

13 On a related issue, see Sanford Labovitz, "The Assignment of Numbers to Rank Order Categories," American Sociological Review, XXXV (June, 1970), 515-524.

14 For an exception to this generalization, see Paul Dempsey, "Liberalism - Conservatism and Party Loyalty in the United States Senate," Journal of Social Psychology, LVI (April, 1962), 164, 167. See also Alker and Russett, World Politics in the General Assembly, p. 255.

15 In this and in the remaining regression analysis presented in this chapter all individual characteristics entering equations for any roll call index are listed in the left-hand column. A variable not entering a given equation is represented by dashes in the appropriate columns.

- 16 The high positive and negative coefficients associated, respectively, with college education and white collar occupation in the Partisanship equation is an artifact of the high correlation between these two independent variables rather than an indicator of strong relationships with the dependent variable.
- 17 Key, Southern Politics, chaps. xvi-xvii; Boynton, "Southern Conservatism."
- 18 Key, Southern Politics, chaps. xvi, xvii, and especially pp. 378-380, where Key suggests that the process of urbanization has tended to dilute the effects of Southern sectionalism.
- 19 Turner, Party and Constituency, p. 158.
- 20 Smuckler, "The Region of Isolationism."
- 21 Rieselbach, The Roots of Isolationism; Rieselbach, "The Basis of Isolationist Behavior."
- 22 Charles O. Lerche, Jr., "Southern Congressmen and the 'New Isolaticism'," Political Science Quarterly, LXXV (September, 1960), 321-337; Malcolm E. Jewell, "Evaluating the Decline of Southern Internationalism Through Senatorial Roll-Call Votes," Journal of Politics, XXI (November, 1959), 624-646.
- 23 For one study which does employ attitudinal data in roll call analysis, see Warren E. Miller and Donald E. Stokes, "Constituency Influence in Congress," American Political Science Review, LVII (1963), 45-56.
- 24 For example, see Turner, Party and Constituency; Havens, "Metropolitan Areas and Congress "; Flinn, "Party Responsibility in the States "; Marwell, "Party, Region, and the Dimensions of Conflict"; Vanderslik, "Constituencies and Roll Call Voting"; Shannon, Party, Constituency, and Congressional Voting.
- 25 Froman, Congressmen and Their Constituents, chap. vii.

26 Froman bases his conclusions on findings of between-party differences on four constituency variables and within-party zero-order correlations between these constituency variables and roll call behavior. The correlations he reports are rather low and, even if much higher, would not establish that the differences between the roll call behavior of the parties were due to their differences in constituency.

27 Vanderslik, "Constituencies and Roll Call Voting." This is not intended as a criticism of Vanderslik who had no other alternative given his decision to assume only ordinal level measurement in his dependent variables.

28 Data were treated as missing in one case in which a Democratic Congressman left office and was replaced by a Republican during the first session.

29 Even if there were no absences the correlations between party affiliation and the Speakership vote would be affected by the fact that the product-moment correlation coefficient between dichotomous variables can attain unity only if marginal totals for both are equal.

30 See for example, Duncan MacRae, Jr., "The Relation Between Roll Call Votes and Constituencies in the Massachusetts House of Representatives," American Political Science Review, XLVI (December, 1952), 1046-1055; Pertti Pesonen, "Close and Safe State Elections in Massachusetts," Midwest Journal of Political Science, VII (February, 1963), 54-70.

31 Rieselbach, "The Basis of Isolationist Behavior."

32 It might be noted that the increases were also found, but were much smaller, when section was entered into a multiple mode analysis involving all nineteen constituency characteristics.

33 This finding should be qualified by noting that in the multiple mode analysis involving all individual constituency characteristics no clear and consistent inter-party differences appeared in the  $b$  coefficients associated with Southern section. The  $\beta$  coefficients remained much larger within the Democratic party, reflecting the fact that there were simply not enough Southern Republicans to have much overall impact on voting behavior within that party.

34

In five cases Congressmen left office during the first session and were replaced before the session's end through a special election. In such cases data on competition were treated as missing for the purposes of roll call analysis.

35

For a similar review of the literature, see Shannon, Party, Constituency, and Congressional Voting, chap. viii.

36

Duane Lockard, New England State Politics (Princeton, N. J.: Princeton University Press, 1959), p. 337. See also V. O. Key, Southern Politics, pp. 381-382, 507-508.

37

Huntington, "A Revisited Theory of American Party Politics."

38

Lockard, New England State Politics, p. 327.

39

Anthony Downs, An Economic Theory of Democracy (New York: Harper, 1957), chap. viii.

40

Lockard, New England State Politics, pp. 326-327.

41

Truman, The Congressional Party, p. 217.

42

Employing this criterion, all but one district could be classified as either "competitive" or "safe." The lone exception occurred when Clyde Doyle (D., California), who had won election with more than 60 per cent of the two-party vote, died and was replaced in a special election in which neither major candidate received as much as 60 per cent of the two-party vote.

## CHAPTER VI

### SUMMARY, CONCLUSIONS, AND SUGGESTIONS

#### FOR FUTURE RESEARCH

In previous chapters it has been argued that most analysts have approached the measurement of legislative constituency in an ad hoc manner, and, that not having given adequate attention to the relationship between their measures and the concept of district environment, have employed indices which are only very imprecisely related to the concept, or which at best measure only a few of its aspects. This study, along with some other recent endeavors cited in the early chapters, has attempted to clarify the concept of constituency, and to operationalize it comprehensively in a way that is systematically related both to the concept and to available empirical data.

The study began by reviewing previous research on constituency, and found that, despite notable exceptions, the great majority of investigations of constituency attributes have proceeded by selection of only a handful of measures. It was argued that there is no theoretical basis to justify this procedure and that adequate specification of constituency environment requires incorporation in research of a comprehensive list of social, economic, and demographic district characteristics. It was also

argued that urban-related and sectional areal typologies are often used as shorthand attempts to measure district environment in a comprehensive, holistic manner, but that it is by no means clear that such typologies in fact group districts into maximally homogeneous categories, and that areal classification can better be done by inductive classification of districts using rigorous methods and specific criteria for homogeneity.

Paradoxically, the initial effect of doing this is to apparently increase uncertainty regarding the role of constituency in the legislative process. This results from the fact that to confront the complexity of constituency environment is to make more difficult too facile generalizations about it. Obviously, then, the goal of the researcher becomes that of trying to again reduce the level of perceived uncertainty through use of techniques capable of ordering large quantities of data and revealing the patterns that exist within them. This, following examination of the conceptual problems involved in measuring constituency, has been the principal task of the present study. The effect has met with some successes and some failures.

The analysis began with selection of twenty-five constituency attributes for each of the 435 districts of the United States House of Representatives in the Eighty-eighth Congress. Six of these attributes were discovered to be conceptually and empirically redundant with other included characteristics and were eliminated from further study. The remaining nineteen attributes were subjected to a factor analysis which yielded six dimensions accounting for approximately four-fifths of the variance in the

variables analyzed. Thus was demonstrated the feasibility of developing a set of measures of constituency attributes that combined a high degree of both comprehensiveness and parsimony.

Employing these same nineteen attributes, districts were grouped into homogeneous clusters, thus offering an alternative to deductive urban-related and sectional district groupings. The method employed was a modification of the Ward error sum of squares hierarchical clustering algorithm, which groups objects in such a way as to attempt to minimize within-group variance. The procedure succeeded in incorporating all 435 districts into five types. In this typology, about half of the variance in the original nineteen variables was within-type.

District types, attribute dimensions, and individual constituency characteristics were then all employed in an examination of some of the substantive questions concerning constituency and legislative politics which have long been foci of controversy among legislative analysts. Generally low associations were found between constituency types and attributes and malapportionment, indicating that in the Eighty-eighth Congress inequality in representation involved some degree of discrimination against certain segments of society, but to a much smaller degree than might have been expected. It was found that, had each of the five district types been represented in proportion to their populations, a total of only seventeen seats would have changed hands among types.

Very close relationships were found between constituency environment and level of voter turnout. Among district types the greatest

difference in turnout was found to be between Undeveloped-deprived districts whose turnout was extremely low, and the remaining four types. Turnout was highest in Manufacturing districts. In all, about 80 per cent of the variation among districts in voter turnout in the 1962 congressional elections was found to be explainable in terms of constituency variables. Sectional location and socioeconomic status, especially extreme cultural deprivation, were found to be of particular importance in explaining voter participation.

Constituency environment was also found to be closely associated with district patterns of party preference. Undeveloped-deprived districts and Population Center districts were both found to be very heavily Democratic in their voting, while the remaining types divided their voting about evenly between the two major parties. Altogether, about three-fifths of the variance in the Democratic proportion of the two-party vote was found to be associated with the constituency variables included in the study.

Moderately high relationships were found also between constituency and inter-party competition, thus seeming to support a long-controversial hypothesis which has held that level of party competition varies systematically with economic development and other aspects of the political environment. Closer examination, however, revealed that much of this relationship could be explained as a function of the earlier discussed association between constituency and party preference, on the one hand, and the association between competition and Republican party pre-

ference, on the other. It was speculated that much of the inconsistency in the findings of previous research might be explained as a failure to properly distinguish between party preference and party competition.

An analysis of constituency influence on congressional roll call behavior found only moderate associations.

Party affiliation, by contrast, was discovered to be a variable of extremely high power in roll call analysis, even when constituency variables were held constant. This confirms the findings of past research, most of which has emphasized the importance of party affiliation in roll call behavior. Unlike previous studies, however, the analysis here revealed that party continues to be a dominant influence even when the combined effect of a comprehensive set of constituency variables is controlled. Thus with the present study the primacy of party must be regarded as more firmly established than ever. Electoral competition, by contrast, was shown to be a variable of little importance in explaining roll call behavior, particularly when party and constituency variables were controlled.

While the main thrust of the present study has been that the most promising strategy, in both areal and attribute approaches, for the measurement of constituency is to begin with a set of specific district characteristics, it was nevertheless conceded that other possibilities deserve consideration. The suggestion was made that sectional typologies might provide means of measuring information not available in current aggregate data by tapping zones of political culture related to historical traditions in a given part of the country. In particular, it was

hypothesized that, because of its unique historical experiences, the South (that is, districts in the former states of the Confederacy) might be expected to evidence political behavior different from what would be predicted solely on the basis of its contemporary attributes. This hypothesis was amply confirmed in the analysis of voter turnout, in which Southern districts were shown to have much lower levels of voter turnout than would be predicted from the section's characteristics. In the case of other dependent variables, clear results were not forthcoming, but on the evidence presented here it seems that the fact of Southern sectional location must certainly be included in any truly comprehensive list of constituency measurements.

Such does not seem to be the case for another sectional variable, Midwestern location. In the analysis of roll call behavior in the area of foreign policy, this variable provided little information not contained in other, less amorphous, measures.

In discussing the conceptual underpinning of areal classification schemes, the suggestion was also made that such schemes might be thought of as representations of certain combinations of district characteristics which together produce political behavior different from the additive effects of each specific variable in the combination. Since they constituted frequently occurring combinations of district attributes, the inductively derived constituency types seemed to be a good place to begin to look for such functional emergents. It was hypothesized that the behavior shown in the five inductively derived district types might not be the same

as that predicted from an additive regression model employing, along with other variables, the attributes from which the district types were derived. The model, however, provided very accurate prediction of the actual mean scores of each type on each dependent variable. This accuracy also indicated that the assumption of linearity in the regression model probably had not been seriously violated.

While apparently succeeding fairly well in specifying constituency environment, and while helping to suggest answers to a number of thorny substantive questions, it is clear that the measures of constituency developed for this analysis leave something to be desired. As noted in Chapter II incorporation of large numbers of variables in research designs can create as many problems as it solves unless means can be found to manage these variables parsimoniously. While construction of constituency dimensions and constituency types provides a solution to this problem, it does so at the expense of some loss of detail of information. This can be seen not only in the unexplained variance of the factor analysis and in the within-group variance in the district clusters, but also in the weaker explanatory power of factors and types in terms of dependent variables, when compared to the combined power of the individual characteristics. In some cases this loss in explanatory power might completely alter the inferences the researcher might make about his data. This is undoubtedly inevitable, particularly as variable lists expand far beyond the nineteen included here, but this does not make the loss less regrettable.

The biggest failing in the analysis here has been in the general inability of the analysis to produce clear inferences about specific aspects of constituency environment. Though fairly clear evidence emerged concerning the overall impact of constituency on the various dependent variables studied, the relative importance of specific attributes was for the most part not brought into sharp focus by either analysis of constituency factors or of individual characteristics. Often the results of the two types of analysis were not very consistent. This may be due to inadequacies in the measures themselves or in the way they were employed, or it may be that clear patterns were not revealed because they do not exist.

The remainder of this concluding chapter will be devoted to discussion of some future research objectives suggested by the present study.

One such objective is extension of the approaches used here to other substantive problems of legislative inquiry. In the first place, legislative constituency has in the past been related not only to electoral and roll call data, but to many other aspects of the legislative process and additional research is needed in virtually all of these areas. What, for example, is the relationship between constituency types (systematically derived) or constituency attributes (measured comprehensively and parsimoniously) and the characteristics of the individual representative, his committee assignments, or his attainment of positions of leadership within the legislature.<sup>1</sup>

Secondly, there is a need for greater effort at controlling the effect of constituency in analyzing relationships between other variables

in the legislative system. This has been done in the present study with respect to the effects of party and competition on roll call voting, but many other applications of similar controls are easily envisioned. For example, David Truman has hypothesized that congressional committees and state delegations produce cohesion among their members in roll call behavior, and in an analysis of the Eighty-first Congress presented evidence which he contended supported his hypothesis.<sup>2</sup> As Truman himself notes, however, there is also a tendency for at least some committees to draw their membership from certain kinds of constituency, so that in the House the Agriculture Committee is dominated by Congressmen from agrarian districts, the Interior Committee by Western Congressmen, and the District of Columbia Committee by Southerners. Similarly, state delegations also tend to be somewhat homogeneous with respect to constituency characteristics. To fairly test Truman's hypothesis, it is necessary to control adequately for constituency homogeneity in measuring homogeneity (or cohesion) of committees or state delegations in roll call behavior.

A third area in which future research might profitably be pursued involves the relationship between inductively derived typologies and case studies of legislative districts.<sup>3</sup> For many kinds of research, such as interviewing of elites, it may be impossible to include more than a few districts in a study. The researcher may therefore wish to select districts that are, in their social, economic, and demographic attributes, modal-typical with respect to the legislature as a whole, so that they will constitute a true cross-section of the entire set of districts in the legislative

body he wishes to study. One way to do this systematically would be to first cluster all districts inductively, and then to select for more intensive investigations one or more districts close to the centroids of each cluster. This would in part meet the common objection made against the case study approach that the cases chosen may not be representative of the larger population from which they are drawn and hence do not provide a sound basis for generalization.

Before the present analysis can be extended to other substantive areas, such as those just discussed, it will be necessary to deal with some unresolved methodological problems with respect both to attribute and areal approaches to constituency measurement. The first such problem is that factor analysis, though shown in Chapter II to be a mathematically powerful data reduction tool, was also shown in subsequent chapters to be a rather dangerous technique when derived factors were employed as independent variables in the analysis of legislative politics. Primarily this seems to be a function of the fact that factors are defined not only by the high loading variables by which they are interpreted but also by other variables with only low or moderate loadings. The cumulative effect of these variables can produce very misleading statistical associations between the constituency factor and the dependent variables that they are used to analyze.

One possible way around this problem which has been advocated by some factor analysts<sup>4</sup> is to compute factor scores on the basis of only those variables with substantial loadings on the factor in question.

This has the advantage of eliminating the variance contributed to the factor by less important variables, thus giving the researcher a clearer picture of the meaning of his factor. An alternative approach to incomplete factor scores would be to conduct a "second order" factor analysis which would include only those variables clearly associated with a single dimension in the first order analysis.<sup>5</sup>

Another tactic that deserves greater exploration in analysis of constituency data is oblique factor analysis. This technique differs from that used here in that rotated factors are permitted to be correlated. This seems more realistic than the assumption of orthogonality. For example, while Affluence and Deprivation emerged as separate dimensions in the analysis conducted in Chapter II, both common sense and an examination of the correlation matrix indicate a moderate association between those variables loading high on the one factor and those loading high on the other. Oblique rotation would undoubtedly have reflected these associations.

Room for improvement also exists in the approach to inductive areal classification employed in this study. The methods that have been used in numerical taxonomy are almost as varied as the data to which the methods have been applied. The modified version of the Ward cluster procedure applied here offers one fairly rigorous and intuitively reasonable approach to the problem, but it is only an heuristic devise, not a method which guarantees optimal results. Its major shortcoming is that the hierarchical grouping procedure used does not permit members of a group,

once joined, to be separated at a subsequent step, even where doing so would improve homogeneity. A procedure was used to meet this problem in part by refining, through reassignment of members, the groups produced by the clustering process. Even this is not fully satisfactory, however, since it is done only after a commitment has been made to retention of a given number of groups. Further, reassigning group members will not necessarily produce optimal results even for a given number of groups, particularly if the initial groups are not nearly optimal in the first place.

A full comparison of the approach employed here with others that have been suggested would require a separate study. The very brief comments that follow are not intended to be in any way exhaustive or definitive and are meant only to provide an introductory basis for further research.

One approach to inductive classification that has been applied in several studies is Q--mode factor analysis.<sup>6</sup> The most common approach to factor analysis, and the one employed in the present study, is known as R--mode analysis, and is used to uncover the underlying dimensions of variables. Q--mode, on the other hand, is used to examine patterns of relationships among cases, and the factors which result represent dimensions of cases. To the extent that simple structure is achieved, each case will have a high loading on one dimension, and low loadings on the rest. Types are, therefore, sometimes defined as sets of cases with similar loading patterns.

One objection to this approach is that, to this writer's knowledge, Q--mode analysis would not be technically or economically feasible for large sets of cases such as found in the United States House of Representatives. Even if this practical difficulty could be removed, the appropriateness of the technique for inductive typology construction would be very questionable. As Fruchter pointed out some years ago, factor analysis does not lead directly to groupings of objects, but rather provides configurations of objects.<sup>7</sup> One can infer groupings from these configurations, of course, but unless objects fall naturally into well-defined clusters (resulting in a very high degree of simple structure) such inference may be rather subjective.<sup>8</sup>

Another technique that has been proposed for developing area-classifications is multidimensional scaling.<sup>9</sup> This technique attempts to spacially arrange cases in the smallest possible number of dimensions with the least possible loss in information. It has the advantage of requiring only ordinal level data, but its shortcomings are much the same as those of Q--mode factor analysis in that it does not presently appear to be feasible for large numbers of cases, and it produces a configuration, rather than a direct grouping, of cases.

In a recent study of American cities, Jones and Jones apply an interesting technique employing R--mode principal components analysis of census data. Component scores (rather than loadings) are rotated to a solution which maximizes the bi-modality of the scores' distributions. The authors then select for further analysis two components with statisti-

significant degrees of bi-modality. On the basis of these components groups, consisting of cities with scores of  $\pm 1$  or more on both components, are derived.<sup>10</sup>

Several objections can be made to the Jones and Jones approach. In the first place, if the goal of inductive typology construction is overall maximization of homogeneity in a given set of group attributes, it is by no means clear why a typology should consist of  $2^n$  groups (where  $n$  is the number of dimensions which display a high degree of bi-modality) or why these groups should consist of objects with extreme scores on all such dimensions. Further, this method would become extremely cumbersome if attempts were made to group objects on a large number of components. For example, an analysis of five dimensions would result in  $2^5$  or thirty-two groups. Finally, in their study of 364 American cities, Jones and Jones succeeded by their method in assigning to groups only about one-sixth of the cases they studied.

The final technique to be considered has been developed by a group of British sociologists interested in defining sub-areas within the London metropolitan area. Beginning with a principal components analysis of census enumeration districts, the British scholars divide these districts into two groups -- those above, and those below the mean of the first component. These groups are then refined by reassigning districts in a manner very similar to that used in the present study. The larger of the resulting groups is then partitioned by again dichotomizing on the first component. This process is repeated until thirty groups are

obtained, and a grouping level is then selected for further analysis.<sup>11</sup> The method, then, begins and ends in a way very similar to the method employed in the present study, but uses an ascending, rather than a descending, hierarchical principle. Its chief advantages seem to be that it incorporates refinement of groupings at each grouping level, rather than at one level only, and that it is apparently feasible for extremely large populations (since the London study involved 4,570 enumeration districts). Its chief shortcoming is the very crude way in which groups are initially partitioned.

The above brief and very incomplete survey should be sufficient to demonstrate that there are many available grouping techniques from which to choose, but no very sound basis for making such a choice. It would seem that future research should proceed along two lines: analytically, in order to compare mathematically and conceptually the relative merits of existing methods and in order to develop new ones, and experimentally, in order to compare different methods using the same (real or simulated) data. In the meantime, there is some comfort in the fact that some work that has already been done in the latter direction suggests that alternative methods tend to produce rather similar results.<sup>12</sup>

While choice of a specific grouping method might turn out to be unimportant, the choice of a grouping criterion is critical. To say, as was said earlier here, that grouping should aim to maximize homogeneity on a specified set of variables is, in a sense, begging the question, since nothing has been said about how these variables should be weighted.

Most past research which has begun with factor analysis or principal components analysis has given equal weight to each dimension in grouping objects. In a few studies, including the present one, dimensions have, in one way or another, been weighted to reflect their explanatory power in terms of the original data matrix. The choice seems ultimately to hinge upon the philosophy of the researcher with regard to use of factor or principal components techniques. In the present study, such techniques were employed as tools in data reduction, that is, as parsimonious representations of the original data. Apart from this, no particular theoretical importance was attached to the dimensions themselves. This being the case, it seemed advisable to develop a district typology that would remain as close as possible to the original data. A researcher employing a more sophisticated theoretical framework, however, might be primarily interested in a set of factors. In this case, the individual variables chosen for analysis are important, not in themselves, but as measures of these underlying factors. Where this viewpoint is taken, the weighting scheme adopted for typology construction should be based on factors and not on the variables from which they have been derived.

A third criterion that might be appropriate for certain kinds of research has been proposed by Cattell et al., who suggest weighting variables by what they call "pattern effect." By this they mean that variables used to create a typology can be weighted according to their ability to explain some other "criterion" variable which is not intrinsic to the classification itself.

For example, a researcher might wish to investigate the effect of party organization on voter party preference at the congressional district level and, following the suggestion advanced above, might wish to employ an inductively derived typology of constituencies in order to select a cross-section of case study districts for this purpose. Since the variable he would be interested in explaining would be party preference, this variable could be used as the criterion for determining the weights of constituency measures. This could be done by regressing party preference on constituency components and then weighting the components, not by the square roots of their eigenvalues, but by their  $\beta$  coefficients prior to clustering. In a sense such an approach, since it would take into account both political behavior and the characteristics of the political system's environment, would represent a synthesis of the kind of cluster analysis carried out in Chapter III (based solely on constituency attributes) and the clustering of districts on the basis of political variables represented by the tradition of cluster-bloc analysis begun by Rice.<sup>14</sup>

An objection that might be raised against this procedure is that, since it requires explanation of the dependent variable before a constituency typology is derived, the argument advanced here seems to involve circular reasoning. This is true, however, only if the purpose of the district typology is to explain the dependent variable. As was argued in the opening chapter, the areal approach is most suited to descriptive purposes, whereas the attribute approach is preferable for explanation. So long as the task of a district typology is merely descriptive, the criticism just set forth need not be troublesome.

A final comment refers not to the methodological issues involved in the measurement of the constituency environment of legislative politics, or to specific substantive issues, but rather to the conceptual problem confronted in the third chapter. Perhaps the most important single conclusion suggested by the present study is that the time is approaching when communication between theorists and methodologists, often called for but rarely achieved, can be significantly increased. In Chapter III it was noted that many researchers, in legislative analysis and elsewhere, have been employing deductive areal classification schemes in their work while, at the same time, other scholars have been developing inductive areal typologies. The task of bringing these two traditions together, however, has been at best only half completed. The relationship between deductive and inductive approaches to sectional typology construction has already been explored in some detail.<sup>15</sup>

Very little has been done, however, in the case of urban-related classifications. Though traditional typologies have been subjected to telling criticisms by social scientists, few have suggested alternatives demonstrably preferable to the classifications they attack. In this study it was argued that carefully constructed inductive classifications could meet the objections to traditional typologies while fulfilling the same function. If this argument is valid it should apply not only to legislative districts, but to all branches of political and social science in which urban-related classification schemes have been employed.

## NOTES FOR CHAPTER VI

1

For examples of previous research on these questions see Snowiss, "Congressional Recruitment and Representation "; Nicholas A. Masters, "House Committee Assignments," American Political Science Review, LV (June, 1961), 345-357; Wolfinger and Heifetz, "Power in Congress."

2

Truman, The Congressional Party, chap. vii.

3

Wendell Bell, "The Utility of the Shevky Typology for the Design of Urban Sub-Area Field Studies," Journal of Social Psychology, XLVII (February, 1958), 71-83.

4

Marwell, "Party, Region, and the Dimensions of Conflict "; Alker and Russett, World Politics in the General Assembly, p. 55n.

5

Sharkansky and Hofferbert, "Dimensions of State Politics," p. 869n.

6

For example, Banks and Gregg, "Grouping Political Systems "; Russett, International Regions and the International System.

7

Benjamin Fruchter, Introduction to Factor Analysis (New York: Van Nostrand, 1954), p. 12.

8

Russett, one of those who have advocated Q--mode factor analysis, notes that in grouping objects on the basis of this method, one must consider all loadings for a case before classifying it. See Bruce M. Russett, "Communications," American Political Science Review, LXI (March, 1967), p. 146. To do this systematically, however, would require a further clustering process, such as the one employed in the present study.

9

The possibility of applying this technique to grouping population aggregates has been raised (and rejected) by Russett, International Regions and the International System, p.56. For a description of the technique, see J. B. Kruskal, "Multidimensional Scaling, by Optimizing Goodness of Fit to a Nonmetric Hypothesis," Psychometrica, XXIX (March, 1964), 1-27.

10

Jones and Jones, "Toward a Typology of American Cities." For a more detailed discussion of this technique and a comparison with other methods, including the Ward's hierarchical clustering algorithm, see, Kenneth J. Jones, "Problems of Grouping Individuals and the Method of Modality," Behavioral Science, XIII (1968), 496-511.

11

Norman, "Third Survey of London Life and Labor."

12

Clements, "Use of Cluster Analysis with Anthropological Data," and Driver and Schessler, "Factor Analysis of Ethnographic Data." See also Russett, International Regions and the International Systems, chap. iii.

13

Raymond B. Cattell et al., "The Taxonometric Recognition of Types and Functional Emergents," in Raymond B. Cattell, ed., Handbook of Multivariate Experimental Psychology (Chicago: Rand McNally & Company, 1966), pp. 288-329.

14

Rice, "The Identification of Blocs in Small Political Bodies."

15

Berry, "A Synthesis of Formal and Functional Regions"; Russett, International Regions and the International System, chap. i.

## APPENDIX

### Assignment of Districts to Constituency Types

#### Key

- I Manufacturing Districts
- II Prosperous-growth Districts
- III Population-Center Districts
- IV Undeveloped Districts
- V Undeveloped-deprived Districts

District	Type	District	Type	District	Type
Alabama					
1	V	8	I	35	II
2	V	9	II	36	II
3	V	10	II	37	II
4	V	11	II	38	IV
5	V	12	IV	Colorado	
6	V	13	II	1	II
7	V	14	II	2	II
8	V	15	IV	3	IV
Alaska					
At large	II	16	IV	4	IV
Arizona					
1	II	17	II	Connecticut	
2	II	18	IV	At large	I
3	V	19	II	1	I
Arkansas					
1	V	20	II	2	I
2	V	21	V	3	I
3	IV	22	II	4	I
4	V	23	I	5	I
California					
1	II	24	II	Delaware	
2	IV	25	II	At large	II
3	II	26	III	Florida	
4	IV	27	II	1	II
5	III	28	II	2	II
6	III	29	I	3	II
7	III	30	III	4	II
		31	I	5	IV
		32	I	6	II
		33	II	7	IV
		34	II	8	V

District	Type	District	Type	District	Type
9	V	Indiana		2	I
10	IV	1	I	Maryland	
11	II	2	IV	At large	II
12	IV	3	I	1	IV
Georgia		4	I	2	II
1	V	5	I	3	I
2	V	6	IV	4	III
3	V	7	IV	5	II
4	V	8	IV	6	II
5	II	9	IV	7	I
6	V	10	IV	Massachusetts	
7	V	11	II	1	I
8	V	Iowa		2	I
9	V	1	IV	3	I
10	V	2	IV	4	I
Hawaii		3	IV	5	I
At large	II	4	IV	6	I
Idaho		5	II	7	I
1	IV	6	IV	8	III
2	IV	7	IV	9	III
Illinois		Kansas		10	I
1	III	1	IV	11	I
2	III	2	IV	12	I
3	I	3	II	Michigan	
4	II	4	II	At large	I
5	I	5	IV	1	III
6	III	Kentucky		2	I
7	III	1	IV	3	I
8	III	2	V	4	I
9	III	3	I	5	I
10	I	4	IV	6	I
11	I	5	V	7	I
12	II	6	IV	8	I
13	II	7	V	9	I
14	II	Louisiana		10	I
15	I	1	V	11	IV
16	I	2	V	12	I
17	IV	3	V	13	III
18	I	4	V	14	I
19	I	5	V	15	III
20	IV	6	V	16	I
21	IV	7	V	17	I
22	IV	8	V	18	II
23	IV	Maine		Minnesota	
24	I	1	I	1	IV

District	Type	District	Type	District	Type
2	IV	12	I	37	I
3	II	13	III	38	I
4	I	14	III	39	I
5	I	15	I	40	I
6	IV	New Mexico		41	IV
7	IV	At large	II	North Carolina	
8	IV	At large	II	1	V
Mississippi		New York		2	V
1	V	1	II	3	V
2	V	2	II	4	V
3	V	3	II	5	V
4	V	4	II	6	II
5	V	5	II	7	V
Missouri		6	I	8	V
1	I	7	I	9	V
2	II	8	III	10	V
3	III	9	III	11	V
4	IV	10	III	North Dakota	
5	I	11	III	1	IV
6	IV	12	III	2	IV
7	IV	13	III	Ohio	
8	IV	14	III	At large	I
9	IV	15	III	1	I
10	V	16	I	2	I
Montana		17	III	3	I
1	IV	18	III	4	I
2	IV	19	III	5	IV
Nevada		20	III	6	IV
At large	II	21	III	7	IV
New Hampshire		22	III	8	I
1	I	23	III	9	I
2	I	24	III	10	IV
New Jersey		25	II	11	I
1	I	26	II	12	II
2	I	27	I	13	I
3	I	28	I	14	I
4	I	29	I	15	IV
5	II	30	I	16	I
6	I	31	IV	17	I
7	I	32	I	18	I
8	I	33	I	19	I
9	I	34	I	20	I
10	I	35	I	21	III
11	III	36	I	22	I

District	Type	District	Type	District	Type
23	II	South Carolina		Utah	
Oklahoma		1	V	1	IV
1	II	2	V	2	II
2	IV	3	V	Vermont	
3	IV	4	V	At large	IV
4	IV	5	V	Virginia	
5	II	6	V	1	V
6	IV	South Dakota		2	V
Oregon		1	IV	3	II
1	IV	2	IV	4	V
2	IV	Tennessee		5	V
3	I	1	V	6	IV
4	I	2	V	7	IV
Pennsylvania		3	V	8	V
1	I	4	V	9	V
2	III	5	II	10	II
3	III	6	V	Washington	
4	I	7	V	1	II
5	I	8	V	2	I
6	I	9	V	3	I
7	I	Texas		4	IV
8	I	At large	V	5	IV
9	I	1	V	6	I
10	I	2	V	7	II
11	I	3	V	West Virginia	
12	IV	4	IV	1	IV
13	II	5	II	2	IV
14	III	6	IV	3	V
15	I	7	V	4	IV
16	I	8	V	5	V
17	I	9	V	Wisconsin	
18	I	10	IV	1	I
19	I	11	IV	2	II
20	I	12	II	3	IV
21	I	13	IV	4	I
22	I	14	V	5	I
23	I	15	V	6	I
24	I	16	II	7	IV
25	I	17	IV	8	I
26	I	18	IV	9	IV
27	I	19	V	10	IV
Rhode Island		20	II	Wyoming	
1	I	21	IV	At large	IV
2	I	22	II		

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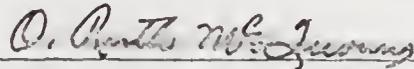
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## BIOGRAPHICAL SKETCH

John Lawrence Korey was born November 20, 1944, in Brooklyn, New York. He attended parochial schools in Brooklyn and Garden City, New York, and in June, 1962 was graduated from Chaminade High School, Mineola, New York. In June, 1966 he received the degree of Bachelor of Arts with a major in Government from Georgetown University. In September, 1966 he enrolled in the Graduate School of the University of Florida. He studied under a National Science Foundation Traineeship until August, 1970, and then worked as a graduate assistant in the Department of Political Science until March, 1971. From September, 1966 until the present time he has pursued his work toward the degree of Doctor of Philosophy.

John Lawrence Korey is married to the former Mary Margot Haggerty and is the father of one daughter. He is a member of Pi Sigma Alpha and the American Political Science Association.

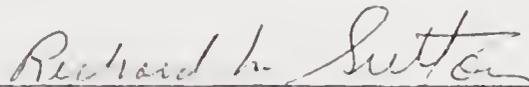
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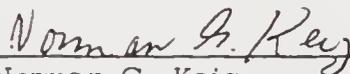
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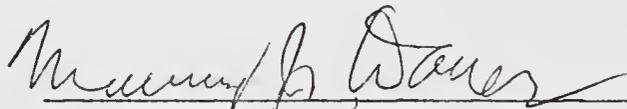
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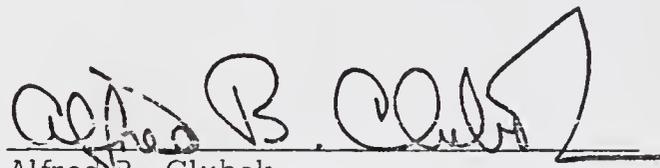
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Manning J. Dauer  
Professor of Political Science

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

  
Alfred B. Clubok  
Associate Professor of Political Science

This dissertation was submitted to the Department of Political Science in the College of Arts and Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December, 1971

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Dean, Graduate School

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