THE DIFFUSION OF INNOVATIONS AMONG THE AMERICAN STATES*

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We are now in the midst of a notable revival of interest in the politics of the American states. During the last decade many studies have been conducted of the social, political and economic determinants of state policy outcomes.[1] Several of these writers have argued that the relative wealth of a state, its degree of industrialization, and other measures of social and economic development are more important in explaining its level of expenditures than such political factors as the form of legislative apportionment, the amount of party competition, or the degree of voter participation.[2] It has been claimed that such factors as the level of personal income or the size of the urban population are responsible *both* for the degree of participation and party competition in a state, *and* the nature of the system's policy outputs. By making this argument these writers have called into question the concepts of representation and theories of party and group conflict which, in one form or another, are the foundations for much of American political science.[3]

There is a growing awareness, however, that levels of expenditure alone are not an adequate measure of public policy outcomes. Sharkansky has shown, for example, that levels of expenditure and levels of actual service are seldom correlated; presumably, some states are able to reach given service levels with much less expenditure than others.[4] Besides establishing the appropriate level of expenditure for a program, policy makers must also decide about the program's relative scope, provisions for appeal from administrative orders, eligibility requirements, the composition of regulatory boards and commissions, and many other matters which have little to do with money. Before we can evaluate the relative importance of structural and political factors as determinants of policy, therefore, we need to investigate decisions outside the budgetary process. In order to advance that object this study will focus on one of the most fundamental policy decisions of all: whether to initiate a program in the first place.

States have traditionally been judged according to the relative speed with which they have

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[1] Beginning with Richard E. Dawson and James A. Robinson, "Inter-Party Competition, Economic Variables, and Welfare Policies in the American States," *Journal of Politics* (May, 1963), 265–289, there have been numerous articles and books on the subject. The most recent summary is: John H. Fenton and Donald W. Chamberlayne, "The Literature Dealing with the Relationships Between Political Processes, Socio-economic Conditions and Public Policies in the American States: A Bibliographical Essay," *Polity* (Spring, 1969), 388–394.

[2] For examples see: Herbert Jacob, "The Consequences of Malapportionment: A Note of Caution," *Social Forces* (1964), 260–266; the chapters by Robert Salisbury, Robert Friedman, Thomas Dye, and Dawson and Robinson in: Herbert Jacob and Kenneth Vines (eds.), *Politics in the American States: A Comparative Analysis* (Boston, 1965); Richard I. Hofferbert, "The Relation Between Public Policy and Some Structural and Environmental Variables in the American States," this REVIEW (March, 1966), 73–82; and Thomas Dye, *Politics, Economics and the Public: Policy Outcomes in the American States* (Chicago, 1966).

[3] For an evaluation of the significance of this literature and its implications for political science see: Robert Salisbury, "The Analysis of Public Policy: A Search for Theories and Roles," in Austin Ranney (ed.), *Political Science and Public Policy* (Chicago, 1968), pp. 151–178.

[4] Ira Sharkansky, "Government Expenditures and Public Services in the American States," this REVIEW (1967), 1066–1077. Sharkansky also identifies important political variables in his: "Economic and Political Correlates of State Government Expenditures: General Tendencies and Deviant Cases," *Midwest Journal of Political Science* (1967), 173–192.

accepted new ideas. Wisconsin, because of its leadership during the Progressive period and its early adoption of the direct primary, the legislative reference bureau, and workmen's compensation, gained a reputation as a pioneering state which it has never lost. Reputations of this kind are usually based only on random impressions and they may be inaccurate or misleading, but if it is true that some states change more readily than others a study of the way states adopt new ideas might lead to some important insights into the whole process of political change and development.

This essay is primarily an exercise in theory building. My aim is to develop propositions which might be used as guides to the study of the diffusion of innovations and which might also apply to budgeting and other forms of decision making.[5] Limitations in the data I have collected do not allow empirical testing of all the explanations I propose; the currently untestable propositions are presented in the hope that they may help in preparing the ground for future research. The study begins with an effort to devise a measure of the relative speed with which states adopt new programs. Once a measure of this phenomenon is created efforts are made to discover its principal demographic and political correlates. The article concludes with an effort to devise an explanation for the adoption of innovations based on insights gathered from studies of decision making, reference group theory, and the diffusion of innovations. The major questions being investigated are: (1) why do some states act as pioneers by adopting new programs more readily than others, and once innovations have been adopted by a few pioneers, (2) how do these new forms of service or regulation spread among the American states?

I. DEFINITIONS AND DISTINCTIONS

Several terms have already been used here which have ambiguous meanings and it is important to make clear just how they are to be defined. The most important, and potentially misleading, is the term "innovation." An innovation will be defined simply as a program or policy which is new to the states adopting it, no matter how old the program may be or how many other states may have adopted it. Even though bureaucratic innovations or new departures by regulatory commissions or courts may be mentioned in the course of the discussion, the data used to measure the relative speed of adoption of innovations consists exclusively of legislative actions, simply because the data was readily available only in that form.

We are studying the relative speed and the spatial patterns of *adoption* of new programs, not their invention or creation. Invention, or bringing into being workable, relevant solutions to pressing problems, is an important activity and has been the subject of fascinating research.[6] We will concentrate on the way in which organizations select from proposed solutions the one which seems most suited to their needs, and how the organizations come to hear about these new ideas in the first place.[7] We are not trying to specify the circumstances under which new ideas or programs will be conceived or developed; we are studying instead the conditions under which state decision makers are most likely to adopt a new program.

The object of this analysis is the process of diffusion of ideas for new services or programs. Sometimes new legislation is virtually copied from other states. The California fair trade law, adopted in 1931, "was followed either verbatim or with minor variations by twenty states; in fact, ten states copied two serious typographical errors in the original California law."[8] No as-

[5] There is a well established body of research on the diffusion of innovations from which I have drawn many insights. For general reviews of this literature see: Everett M. Rogers, *Diffusion of Innovations* (New York, 1962), Elihu Katz, Martin L. Levin, and Herbert Hamilton, "Traditions of Research in the Diffusion of Innovations," *American Sociological Review* (1963), 237–252. For early attempts to study the American states from this perspective see: Ada J. Davis, "The Evolution of the Institution of Mothers' Pensions in the United States," *American Journal of Sociology* (1930), 573–582; Edgar C. McVoy, "Patterns of Diffusion in the United States," *American Sociological Review* (1940), 219–227; and E. H. Sutherland, "The Diffusion of Sexual Psychopath Laws," *American Journal of Sociology* (1950–51), 144–156. Also see: Torsten Hagerstrand, *Innovation Diffusion as a Spatial Process* (Chicago, 1967); and Robert Mason and Albert N. Halter, "The Application of a System of Simultaneous Equations to an Innovation Diffusion Model," *Social Forces* (1968), 182–193.

[6] For examples see: Gary A. Steiner (ed.), *The Creative Organization* (Chicago, 1965); and Tom Burns and G. M. Stalker, *The Management of Innovation* (London, 1961).

[7] There is much confusion over this distinction in the literature on diffusion. For an excellent discussion of the problem see: Lawrence B. Mohr, "Determinants of Innovation in Organizations," this REVIEW (1969), 111–126.

[8] Once the mistake was discovered, the Arkansas statute, which reproduced a model prepared by the National Association of Retail Druggists, was

sumption is being made, however, that the programs enacted in each state are always exactly alike or that new legislation is written in exactly the same way by every legislature. It is unlikely that the highway department established in Wisconsin in 1907 had the same organizational format as the one adopted by Wyoming in 1917, or that the council on the performing arts created in New York in 1960 bears an exact resemblance to the one created by Kentucky in 1966. In each case, however, a commitment was made to offer a new service, establish a new principle of regulation, or create an agency which had never existed before. Our concern is the origin and spread of the idea to provide public subsidies for the arts, not the detailed characteristics of institutions created in each state to implement the policy.

No ideological bias was employed in selecting issues for study. The patterns of diffusion for each issue have been treated equally, and no effort was made to develop any method of determining the relative importance or desirability of the programs.[9] Programs are sometimes enacted only to provide symbolic rewards to groups within the population and once created are left with inadequate funds or otherwise disabled.[10] Oklahoma's legislature, for example, emulated other states by creating a state civil rights commission, but once the commission was established, only $2,500 was appropriated for its operation.[11] For the purposes of this study, however, all adoptions are equal. My goal is to provide an explanation of the relative speed of adoption and the patterns of diffusion of innovations; I am not interested in the effectiveness of Oklahoma's civil rights commission, but in where the legislature got the idea to create such a commission and why it acted when it did.

II. THE INNOVATION SCORE

My first aim is to explain why some states adopt innovations more readily than others. I assume that the pioneering states gain their reputations because of the speed with which they accept new programs. The study must begin, therefore, with an attempt to devise an innovation score that will represent the relative speed with which states adopt innovations.

The innovation score is based on the analysis of eighty-eight different programs (see the Appendix for a list) which were enacted by at least twenty state legislatures prior to 1965, and for which there was reliable information on the dates of adoption. In order to make the collection of programs as comprehensive and representative as possible, I adopted a list of basic issue areas similar to the one employed by the Council of State Governments in its bi-annual reports included in the *Book of the States*. I tried to study six to eight different pieces of legislation in each of these areas: welfare, health, education, conservation, planning, administrative organization, highways, civil rights, corrections and police, labor, taxes, and professional regulation. In the course of my analysis I studied issues ranging from the establishment of highway departments and the enactment of civil rights bills to the creation of state councils on the performing arts and the passage of sexual psychopath laws. Most of the programs were adopted during the twentith century, but sixteen of them diffused primarily during the latter half of the nineteenth century.

Once the eighty-eight lists of dates of adoption were collected they were used to create an innovation score for each state. The first step was to count the total number of years which elapsed between the first and last recorded legislative enactment of a program. Each state then received a number for each list which corresponded to the percentage of time which elapsed between the first adoption and its own acceptance of the program. For example, if the total time elapsing between the first and last adoption of a program was twenty years, and Massachusetts enacted the program ten years after the first adoption, then Massachusetts received a score of .500 on that particular issue. The first state to adopt the program received a score of .000 and the last state received a 1.000. In cases in which all the states have not yet adopted a program, the states without the program were placed last and given a score of 1.000.[12] The in-

copied either verbatim or with minor changes by seventeen states. Ewald T. Grether, *Price Control Under Fair Trade Legislation* (New York, 1937), pp. 19–20.

[9] In later work I will report the results of comparisons of the diffusion patterns of issues from different subject matter areas. Preliminary efforts at such comparisons, however, have not revealed significant variations. There does not seem to be much difference in the diffusion patterns of issues of different types.

[10] For a discussion of this phenomenon see: Murray Edelman, *The Symbolic Uses of Politics* (Urbana, 1964), chapters 2 and 9.

[11] Duane Lockard, *Toward Equal Opportunity* (New York, 1968), p. 23.

[12] The beginning point for the existence of each state was the date upon which it was officially organized as a territory. Using this system, Oklahoma is the last state to come into being, having been organized in 1890. If a program began its diffusion before a state came into existence, that

novation score for each state is simply 1.000 minus the average of the sum of the state's scores on all issues. The larger the innovation score, therefore, the faster the state has been, on the average, in responding to new ideas or policies. The issues may be divided into groups according to subject matter areas or time periods, and separate scores can be created for these smaller groupings of issues by following the same procedure. The results of this scoring procedure, using all eighty-eight issues, are presented in Table 1.

A note of caution should be sounded before the results of this exercise are analyzed. We are endeavoring to measure a highly complex process in which an enormous number of idiosyncratic influences are at work; an official with an unusually keen interest in a particular program, a chance reading of an article or book by a governor's aide, or any number of other circumstances peculiar to any one issue might lead to the rapid adoption of a piece of legislation by a state which is usually reluctant to accept new programs. Mississippi, which has the lowest average score and ranks last among the states in relative speed of adoption, was nonetheless the first state to adopt a general sales tax.

If this reservation is kept in mind, the data in Table I provide a crude outline of the standard or typical pattern of diffusion of new programs or policies among the American states. The states at the top of the list tend to adopt new programs much more rapidly than those at the bottom of the list. Having provided a preliminary measurement of this phenomenon, we must now try to explain it. Why should New York, California and Michigan adopt innovations more rapidly than Mississippi, Wyoming and South Dakota?

III. THE CORRELATES OF INNOVATION

Demographic Factors: After studying the acceptance of technological innovations by both individuals and organizations, several writers have concluded that the decision maker's relative wealth, or the degree to which "free floating" resources are available, are important determinants of the willingness to adopt new techniques or policies.[14] If "slack" resources are available, either in the form of money or a highly skilled, professional staff, the decision maker can afford the luxury of experiment and can more easily risk the possibility of failure.[15] Other studies, especially in the areas of agriculture and medicine, have also shown organizational size to be a strong correlate of innovation.[16] Given these results from prior studies in other fields we might expect to find

issue was not included in figuring the innovation score for the state.

[13] Alaska and Hawaii were omitted from the analysis because data for their years of adoption were often missing.

[14] Everett M. Rogers, *Diffusion of Innovations* (New York, 1962), pp. 40, 285–292. Also see: S. N. Eisenstadt, *The Political Systems of Empires* (New York, 1963), p. 27, 33–112.

[15] For a discussion of "slack" resources and innovation see: Richard M. Cyert and James G. March, *A Behavioral Theory of the Firm* (Englewood Cliffs, N.J., 1963), pp. 278–279.

[16] Rogers, *op. cit.*, Mohr, *op. cit.;* and also: Edwin Mansfield, "The Speed of Response of Firms to New Techniques," *Quarterly Journal of Economics* (1963), 293–304; Jerald Hage and Michael Aiken, "Program Change and Organizational Prop-

TABLE 1. COMPOSITE INNOVATION SCORES FOR THE AMERICAN STATES[13]

New York	.656	New Hampshire	.482	Idaho	.394
Massachusetts	.629	Indiana	.464	Tennessee	.389
California	.604	Louisiana	.459	West Virginia	.386
New Jersey	.585	Maine	.455	Arizona	.384
Michigan	.578	Virginia	.451	Georgia	.381
Connecticut	.568	Utah	.447	Montana	.378
Pennsylvania	.560	North Dakota	.444	Missouri	.377
Oregon	.544	North Carolina	.430	Delaware	.376
Colorado	.538	Kansas	.426	New Mexico	.375
Wisconsin	.532	Nebraska	.425	Oklahoma	.368
Ohio	.528	Kentucky	.419	South Dakota	.363
Minnesota	.525	Vermont	.414	Texas	.362
Illinois	.521	Iowa	.413	South Carolina	.347
Washington	.510	Alabama	.406	Wyoming	.346
Rhode Island	.503	Florida	.397	Nevada	.323
Maryland	.482	Arkansas	.394	Mississippi	.298

that the larger, wealthier states, those with the most developed industrial economies and the largest cities, would have the highest innovation scores. It would seem likely that the great cosmopolitan centers in the country, the places where most of the society's creative resources are concentrated, would be the most adaptive and sympathetic to change, and thus the first to adopt new programs.

In order to test these assumptions several measures of social and economic development were correlated with the innovation score. As we can see in Table 2, there is evidence that the larger, wealthier, more industrialized states adopt new programs somewhat more rapidly than their smaller, less well-developed neighbors. Fairly strong relationships exist between the innovation score and the value added by manufacturing, the average per acre value of farms, the size of the urban population, and the average per capita income. These relationships remain virtually unchanged in all time periods. In fact, the only relationship which changes substantially over time is that between innovation and the percentage of illiterates in the population which declines steadily across the three time periods. This declining relationship and the low correlation between innovation and the median school year completed is caused primarily by the states in the Rocky Mountain region which have the highest rankings on median school years completed and yet are among the slowest to adopt new programs.[17] The median of educational attainment in the states with the highest innovation scores is pulled down by the presence of a large, poorly educated, lower class, living primarily in the inner cities. The highly industrialized states with large urban concentrations are characterized by great inequality of social status and attainment. It would seem, however, that the elements necessary to foster innovation are present in these states even though they do not have highest average level of educational achievement.

Political Factors: Although students of policy

TABLE 2. CORRELATIONS BETWEEN INNOVATION SCORES AND FIVE SOCIAL AND ECONOMIC VARIABLES, BY TIME PERIODS

Social-Economic Variables	Innovation Scores*			Composite Score
	1870–1899	1900–1929	1930–1966	
Per Cent Population Urban:	.62**	.69	.62	.63
Total Population:	.52	.40	.50	.59
Average Income, Per Capita:	—***	.62	.50	.55
Value Added Per Capita by Manufacturing	.46	.55	.57	.66
Average Value, Per Acre, of Farms:	.70	.52	.52	.54
Per Cent Population Illiterate:	−.58	−.44	−.12	−.23
Median School Years Completed:	—***	—***	.24	.26

* In order to insure that the innovation score and the social and economic variables came from comparable periods, separate innovation scores were calculated for three time periods: 1870–1899, 1900–1929, and 1930-1966. In constructing this table each innovation was placed in the time period during which the first ten states adopted it. Thus, if a program was adopted by only four states during the 1890's, and completed its diffusion during the 1900's, the program is placed in the second time period: 1900-1929, even though its first adoptions took place during the nineteenth century. Social and economic data are taken from the years 1900, 1930, and 1960. The composite score is correlated with social and economic data from 1960.

** The table entries are Pearson product-moment correlations.

*** Measures of these phenomena corresponding with these time periods do not exist.

erties: A Comparative Analysis," *American Journal of Sociology* (1967), 516–517; and Richard J. Hall, S. Eugene Haas, and Norman J. Johnson, "Organizational Size, Complexity and Formalization," *American Sociological Review* (1967), 903–912.

[17] Regional affects of this kind appear frequently in analyses of data from the American states. In many studies, especially those which involve measures of political participation or party competition, strong relationships appear which are actually only a result of the distinctive nature of the southern states. In order to insure that the correlations in this analysis were not merely a result of the social and political peculiarities of the South, the eleven states of the confederacy were removed from all distributions. Since the Southern states do not cluster at one extreme of the innovation scale, no great changes occurred in correlation coefficients based upon data from the thirty-nine states outside the South. Within the eleven Southern states, however, almost all the relationships were substantially reduced in size. Because only eleven states are involved, this fact is difficult to interpret, but will be treated more fully in later work. For an example of this problem discussed in another context see: Raymond Wolfinger and John Osgood Field, "Political Ethos and the Structure of City Government," this REVIEW (1966), 306–326. For a more extensive discussion of the methodological implications see the discussion of "interaction effects" in Hugh Donald Forbes and Edward R. Tufte, "A Note of Caution in Causal Modelling," this REVIEW (1968), pp. 1261–1262; and the communication from Dennis D. Riley and Jack L. Walker, this REVIEW (September, 1969), pp. 880–899.

making have begun to doubt the importance of the political system as an independent determinant of the behavior of decision makers, it seems likely that both the degree of party competition and a state's system of legislative apportionment would affect its readiness to accept change. It would seem that parties which often faced closely contested elections would try to out-do each other by embracing the newest, most progressive programs and this would naturally encourage the rapid adoption of innovations. Lowi argues that new departures in policy are more likely at the beginning of a new administration, especially when a former minority party gains control of the government.[18] If this tendency exists it would also seem likely that state political systems which allow frequent turnover and offer the most opportunities to capture high office would more often develop the circumstances in which new programs might be adopted.[19]

Another prerequisite for the rapid adoption of new programs might be a system of legislative apportionment which fully represented the state's urban areas and which did not grant veto power to groups opposed to change. Such a system might be expected to allow consideration and debate of new policies and programs in all areas. Some recent findings, such as Barber's study of legislators in Connecticut,[20] lead us to speculate that representatives from newly developing urban and suburban areas would be more cosmopolitan, better informed, and more tolerant of change. If nothing else, urban legislators would probably be more willing to deal with problems of sanitation, planning, transportation, and housing peculiar to large metropolitan areas.

TABLE 3. CORRELATIONS BETWEEN INNOVATION SCORES AND MEASURES OF POLITICAL VARIABLES, BY TIME PERIODS

Political Variables*	Innovation Scores			Composite Score
	1870–1899	1900–1929	1930–1966	
Party Competition for Governorship:	.36	.02	.14	.24
David-Eisenberg Index of Malapportionment:	**	.07	.55	.65

* The Index of party competition used in this table is the per cent of the total vote going to the gubernatorial candidate coming in second, times 2. This yields a scale from 0 to 100. It was created by Richard Hofferbert. The apportionment Index appears in Paul T. David and Ralph Eisenberg, *Devaluation of the Urban and Suburban Vote* (Charlottesville: Bureau of Public Administration, University of Virginia, 1961).

** Measures of this phenomenon corresponding with this time period do not exist.

No matter what the composition of the legislator's constituency, however, it would seem that the presence of competent staff, superior clerical facilities, and supporting services would allow him to give serious consideration to a larger number of new proposals. Several studies of the diffusion of technological innovations have demonstrated that the best informed individuals are most likely to pioneer in the use of new techniques or tools,[21] and so the states which provide the most extensive staff and research facilities in their legislatures ought to pioneer in the adoption of new programs.[22]

In Table 3 efforts to test some of these hypotheses in different time periods are displayed. Measures of political variables are usually based on evidence only from contemporary periods because data are seldom available on state and local elections or the operation of legislatures in earlier decades. Measures are available, however, for the degree of party competition and the ex-

[18] Theodore Lowi, "Toward Functionalism in Political Science: The Case of Innovation in Party Systems," this REVIEW (1963), 570–583. Evidence which seems to confirm Lowi's theory may be found in: Charles W. Wiggens, "Party Politics in the Iowa Legislature," *Midwest Journal of Political Science* (1967), 60–69; and Frank M. Bryan, "The Metamorphosis of a Rural Legislature," *Polity* (1968), 191–212.

[19] Joseph A. Schlesinger has developed an index of the "general opportunity level" in each state. The index measures the relative number of chances which exist in each state to achieve major political office. See: *Ambition and Politics: Political Careers in the United States* (Chicago, 1966), pp. 37–56.

[20] James D. Barber, *The Lawmakers: Recruitment and Adaptation to Legislative Life* (New Haven, 1965). For testimony from legislators about the importance of reapportionment see: Frank M. Bryan, "Who is Legislating," *National Civic Review* (December, 1967), 627–633; Allan Dines, "A Reapportioned State," *National Civic Review* (February, 1966), 70–74, 99.

[21] Rogers, *op. cit.* Also see: Mansfield, *op. cit.*; James S. Coleman, Elihu Katz, and Herbert Menzel, *Medical Innovation: A Diffusion Study* (Indianapolis, 1966); and John W. Loy, Jr., "Social Psychological Characteristics of Innovators," *American Sociological Review* (1969), 73–82.

[22] For a somewhat different view see: Norman Meller, "Legislative Staff Services: Toxin, Specific, or Placebo for the Legislature's Ills," *The Western Political Quarterly* (June, 1967), 381–389.

tent of legislative malapportionment.[23] As we can see in Table 3 party competitiveness does not seem to be consistently related to the innovation score, at least as it is measured here.[24] Legislative apportionment is not correlated with the innovation score in the 1900–1929 period, but is related in the 1930–1966 period. Since legislatures steadily became less representative of urban populations after 1930, it may be that we have here some empirical evidence of the impact of malapportionment on policy making in the states.

Recent studies of state expenditures have shown that the explanatory effects of political variables could be eliminated if statistical controls for social and economic variables were applied. Therefore, in Table 4 I have presented both the zero-order correlations of the composite innovation score with measures of party competition, turnover in office, legislative apportionment, and legislative professionalism,[25] and

[23] There is one other index in existence which deals with political phenomenon: Rodney Mott's Index of Judicial Prestige. The Mott index measures the degree to which state supreme courts were used as models by the legal profession. It is based on a study of citations in federal Supreme Court decisions and all state supreme court decisions, the number of cases reprinted in standard textbooks, and the opinion of a panel of prominent legal scholars; it covers the period 1900 to 1930. The Mott index and the innovation score from the same time period are correlated at .62. This finding might be interpreted to mean that emulative behavior in the judicial arena is not much different from that in the legislative arena. For details of the Judicial Prestige Index see: Rodney L. Mott, "Judicial Influence," this REVIEW (1936), 295–315.

[24] Data for this table was derived from Richard Hofferbert's collection, "American State Socioeconomic, Electoral, and Policy Data: 1890–1960" which he has graciously allowed me to use.

[25] The sources are: Richard Hofferbert, "Classification of American State Party Systems," *Journal of Politics* (1964), 550–567; Dennis Riley and Jack L. Walker, "Problems of Measurement and Inference in the Study of the American States" (Paper delivered at the Institute of Public Policy Studies, University of Michigan, 1968); David and Eisenberg, *op. cit.;* Glendon Shubert and Charles Press, "Measuring Malapportionment," this REVIEW (1964), 302–327, and corrections, 968–970; Schlesinger, *op. cit.;* and John Grumm, "Structure and Policy in the Legislature," (Paper presented at the Southwestern Social Science Association Meetings, 1967).

TABLE 4. RELATIONSHIPS BETWEEN THE COMPOSITE INNOVATION SCORE AND MEASURES OF LEGISLATIVE APPORTIONMENT AND PARTY COMPETITION

		Partials				
	Zero-Order	Value Added Manufacturing	Per Cent Urban	Total Population	Per Capita Income	Four Factors Combined
Apportionment						
David-Eisenberg Index	.65	.47	.64	.67	.60	.58
Schubert-Press Index	.26	.12	.34	.31	.26	.21
Party Competition						
Hofferbert Index	.54	.35	.34	.50	.26	.12
Riley-Walker Index —Gov.	.40	.33	.22	.47	.09	.17
Riley-Walker Index —Legis.	.31	.24	.17	.34	.04	.07
Turnover in Office						
Schlesinger Index of Opportunity	.53	.40	.39	.32	.34	.24
Legislative Services						
Grumm's Index of Legislative Professionalism	.63	.38	.33	.41	.51	.11

also partial correlations with four social and economic variables controlled. The control variables are value added by manufacturing, per cent urban population, total population size, and per capita personal income, all of which earlier proved to be independently related to the innovation score. In Table 4 the effect of each control variable is displayed separately along with the combined impact of all four. The results tend to corroborate earlier analyses which minimize the independent effects of these political variables on policy outcomes. The Schlesinger index of opportunity, which measures the difference among the states in the average number of times major offices have changed hands, and the Hofferbert index of inter-party competition seem to have some independent impact on innovation, although it is greatly weakened when all four control variables are combined. This finding lends some credence to Lowi's argument that turnover in office fosters change.

Certainly, the most important result depicted in this table is the consistent strength of the correlation between innovation and the David and Eisenberg index of urban representation.[26] Earlier studies, using expenditures as a measure of policy outcomes, have consistently found that apportionment has little importance as an explanatory variable.[27] Our findings indicate that apportionment does make a difference where innovation is concerned. Although the other political factors do not have great independent impact on innovation, the clear implication arising from Tables 3 and 4 is that those states which grant their urban areas full representation in the legislature seem to adopt new ideas more rapidly, on the average, than states which discriminate against their cities.

Given the results of this correlational analysis, we might conclude that New York, California and Michigan adopt new programs more rapidly than Mississippi, Wyoming, and South Dakota primarily because they are bigger, richer, more urban, more industrial, have more fluidity and turnover in their political systems, and have legislatures which more adequately represent their cities. Although these findings are important, they leave many important questions unanswered. The political system does not react automatically in response to the growth of manufacturing industries or to the increase in the percentage of the population living in cities. Developments of this kind obviously cause problems which public officials might try to solve, but the mere presence of such a stimulant does not cause public officials to act, nor does it determine the form the solution will take, or which state might act first to meet the problem. Our analysis has provided us with evidence that change and experimentation are more readily accepted in the industrialized, urban, cosmopolitan centers of the country, but we have not improved our understanding of the institutions and decision-making processes which cause strong statistical relationships between industrial output and innovation. Also, we have not explained the way innovations spread from the pioneering states to those with lower innovation scores. In order to develop explanations of these processes we must go beyond the search for demographic correlates of innovation and develop generalizations which refer to the behavior of the men who actually make the choices in which we are interested.

IV. POLITICAL SCIENCE AND INNOVATION

In one form or another, interest group theories, based on self-regulating systems of countervailing power, are at the heart of much of the recent research into American politics.[28] Studies of the legislative process in the United States, for example, have been strongly influenced by theories which emphasize the importance of the

[26] Although much simpler than the Schubert and Press measure, the David and Eisenberg index seems to have more relevance to political outcomes. Thomas Dye had the same experience. See Dye, *op. cit.*, pp. 19–20, 63–69, 112–114, 146–148, 174–177, 236–237, 270–281.

[27] Herbert Jacob, "The Consequences of Malapportionment: A Note of Caution," *Social Forces* (1964), 260–266; Thomas R. Dye, "Malapportionment and Public Policy in the States," *Journal of Politics* (1965), 586–601; Richard I. Hofferbert, "The Relation Between Public Policy and Some Structural and Environmental Variables in the American States," this REVIEW (1966), 73–82; David Brady and Douglas Edmonds, "One Man, One Vote—So What?" *Trans-action* (March, 1967), 41–46. A recent article calls some of the conclusions of this research into question: Alan G. Pulsipher and James L. Weatherby, Jr., "Malapportionment, Party Competition, and the Functional Distribution of Governmental Expenditures," this REVIEW (1968), 1207–1219.

[28] Examples of this general approach to policy making are: David B. Truman, *The Governmental Process* (New York, 1960); Edward Banfield, *Political Influence* (New York, 1961); and Richard E. Neustadt, *Presidential Power* (New York, 1960). For an excellent critique of theories which employ concepts of power as a major explanatory variable see: James G. March, "The Power of Power," in David Easton (ed.), *Varieties of Political Theory* (Englewood Cliffs, 1966), pp. 39–70.

group basis of politics. Beginning with the efforts of A. Lawrence Lowell[29] political scientists have worked to discover the basic factions within the legislature and have striven to develop operational definitions of power or influence.[30] Extensive efforts have been made to isolate and measure the various influences which come to bear on the individual legislator and motivate him to join one or another legislative bloc: what is a legislator's most important source of cues; is it a lobbyist with whom he has close connections, his party leaders, members of his constituency, the governor, or members of his own family? What impact on his attitudes does the legislative institution itself have; do its informal rules and traditions affect the legislator's decisions, and if so, in what way?[31] Great emphasis has been placed on the analysis of roll-call votes and several sophisticated research techniques have been developed to pursue this work, ranging from Beyle's cluster bloc analysis and Guttman scaling to the more complex, computerized routines presently in use.[32] But all this machinery is useful only in studying those roll-calls which cause divisions in the house; all unanimous votes, nearly eighty per cent of the total in most legislatures, are ignored. Riker has devised a technique in which he uses the percentage of the total membership which is present for the vote and the closeness of the division to determine the relative significance of roll-call votes in legislatures. The more legislators present and the closer the vote, the more significant the issue involved.[33] The full attention of the researcher is thus focused on the relatively small number of decisions which cause significant disagreements, because it is assumed that these are the most important votes; at least, they are the only ones which will provide clues to "the conflicting forces and pressures at work in the legislative system,"[34] and the discovery of those forces and pressures, according to the group theory of politics, is the principal object of political science.

One of the main purposes in this study is to develop an approach to governmental policy making which will serve as a guide in the analysis of *all* legislative decisions, the unanimous as well as the contested ones, and which will lead as well to a better understanding of decisions made by bureaucrats, political executives and other governmental officials. Rather than focus upon the patterns of conflict among factions within the legislature or the administrative agencies, I will search for the criteria employed by legislators and administrators in deciding whether a proposal is worthy of consideration in the first place. This search rests on the belief that whoever the decision maker may be, whether administrator, lobbyist, party leader, governor or legislator, and however controversial a particular issue may become, a set of general criteria exists in every state which establishes broad guidelines for policy making. Regardless of the interests supporting an innovation, no matter whether the decision system is primarily monolithic or pluralistic, if a proposal for change does not fall within those guidelines its chances for acceptance are slim. Many of the propositions I will develop cannot be verified until they are tested with evidence from individual decision makers;[35] they are presented here only as a first, tentative step toward a more comprehensive theory of governmental policy making.

V. EMULATION AND DECISION MAKING IN THE STATES

We are searching for answers to three major questions: 1) why do certain states consistently adopt new programs more rapidly than other states, 2) are there more or less stable patterns of diffusion of innovations among the American states, and 3) if so, what are they? Our answers to these questions will be founded, in part, on the theories of organizational decision making developed in recent years by writers like Simon, March, Cyert and Lindblom.[36] At the

[29] A. Lawrence Lowell, "The Influence of Party Upon Legislation," *Annual Report of the American Historical Association* (1901), pp. 321-543.

[30] The best example is: Robert Dahl, "The Concept of Power," *Behavioral Science* (1957), pp. 201-215.

[31] For the best general review of the results of research on the legislative process, see: Malcolm E. Jewell and Samuel C. Patterson, *The Legislative Process in the United States* (New York, 1966).

[32] For a discussion of these techniques see: Lee F. Anderson, Meridith W. Watts, Jr. and Allen R. Wilcox, *Legislative Roll-Call Analysis* (Evanston, 1966). Also see Jewell and Patterson, *op. cit.*, pp. 528-550.

[33] William H. Riker, "A Method for Determining the Significance of Roll Calls in Voting Bodies," in John C. Wahlke and Heinz Eulau (eds.), *Legislative Behavior* (Glencoe, 1959), pp. 337-383.

[34] Jewell and Patterson, *op. cit.*, p. 416.

[35] Thanks to a grant from the Carnegie Corporation I have been able to launch a pilot study involving interviews in several states.

[36] I refer to: Herbert Simon, *Administrative Behavior,* Second Edition (New York, 1957); Richard M. Cyert and James C. March, *A Behavioral*

heart of these theories is the concept of the decision maker struggling to choose among complex alternatives and constantly receiving much more information concerning his environment than he is able to digest and evaluate. An ordinary decision maker, required to make frequent choices and faced with an inconclusive flood of reports, programs, suggestions and memos, must simplify his task in some way. According to Simon, he does not—cannot—search in every case for the best possible solution to the problems he faces; he has neither the time nor the energy. Instead, he makes decisions by searching until he finds an alternative which he believes is good enough to preserve whatever values are important to him. The limits of rationality imposed by human capacities prevent him from maximizing his benefits in every situation; rather, he "satisfices," or chooses a course of action which seems satisfactory under the circumstances.

The individual in a complex organization, therefore, does not deal directly with all the sources of information potentially available to him, nor does he evaluate every conceivable policy option. In place of the debilitating confusion of reality he creates his own abstract, highly simplified world containing only a few major variables. In order to achieve this manageable simplicity he adopts a set of decision rules or standard criteria for judgment which remain fairly stable over time and which guide him in choosing among sources of information and advice. A decision maker decides both where to look for cues and information and how to choose among alternatives according to his decision rules; these rules also embody the current goals and aspirations of his organization, or the values which the organization is designed to advance and protect. Hence, if we wish to predict the decision maker's behavior, we should try to discover these rules of thumb, or "heuristics" as they are sometimes called, which shape his judgment. His choices could then be explained in terms of the alternatives he considers, his knowledge of each alternative, the sources of his knowledge, and the standard decision rules he applies in cases of this kind.[37]

Taking cues from these theories of human choice and organizational decision making our explanation of the adoption of innovations by the states is based on the assertion that state officials make most of their decisions by analogy. The rule of thumb they employ might be formally stated as follows: *look for an analogy between the situation you are dealing with and some other situation, perhaps in some other state, where the problem has been successfully resolved.*[38]

We are looking to what has been called the "inter-organizational context."[39] or the *horizontal* relationships among the states within the federal system, for the principal influences which regulate the speed of adoption and the patterns of diffusion of innovations. Most of the existing work on intergovernmental relations and federalism concentrates on the question of centralization within the American system of government. In line with the general interest of most political scientists in the factors which affect the access of organized groups and the lines of authority within a political system, many writers are concerned with the virtues of centralization or decentralization and try to determine how much of either exists in the system. They have studied primarily the *vertical* relationships among national, state and local governments, and have usually identified the party system and its demands as the institutional influence most responsible for maintaining the present, decentralized, federal relationships.[40] I want to focus attention on the mutual perceptions and relationships among state governments and to show how

Theory of the Firm (Englewood Cliffs, N.J. 1963); and Charles E. Lindblom, *The Intelligence of Democracy* (New York, 1965).

[37] For a comprehensive review of the literature on decision making see: Donald W. Taylor, "Decision Making and Problem Solving," and Julia Feldman and Herschel E. Kanter, "Organizational Decision Making," in James G. March (ed.) *Handbook of Organizations* (Chicago, 1965), pp. 48–86, 614–649. Also see: W. Richard Scott, "Theory of Organizations," in Robert E. L. Faris (ed.), *Handbook of Modern Sociology* (Chicago, 1964), pp. 485–529.

[38] Decision rules of this kind are mentioned in both Taylor, *op. cit.*, pp. 73–74; and Cyert and March, *op. cit.*, especially pp. 34–43.

[39] William M. Evan, "The Organization-Set: Toward a Theory of Inter-Organizational Relations," in James D. Thompson (ed.) *Approaches to Organizational Design* (Pittsburgh, 1966), pp. 173–191.

[40] Some recent examples are: William Anderson, *The Nation and the States, Rivals or Partners?* (Minneapolis, 1955); M. J. C. Vile, *The Structure of American Federalism* (London, 1961); William Riker, *Federalism: Origin, Operation, Significance* (Boston, 1964); Daniel J. Elazar, *American Federalism: A View From the States* (New York, 1966); Morton Grodzins, *The American System* (Chicago, 1966). For a general critique see: A. H. Birch, "Approaches to the Study of Federalism," *Political Studies* (1966), 15–33.

these relationships affect the behavior of state decision makers.[41]

One of the most common arguments used in state legislatures against raising taxes or passing measures designed to regulate business is the fear that such measures might retard industrial development or force marginal plants to leave the state. Lawmakers often are called upon to deal with the problems which arise when one or two states establish extremely permissive standards for the granting of licenses, such as the corporation laws in New Jersey and Delaware, or the divorce laws in Nevada. However, interstate competition does not always drive standards down; it has a positive side as well. State decision makers are constantly looking to each other for guides to action in many areas of policy, such as the organization and management of higher education, or the provision of hospitals and public health facilities. In fact, I am arguing that this process of competition and emulation, or cuetaking, is an important phenomenon which determines in large part the pace and direction of social and political change in the American states.[42]

Uncertainty and the fear of unanticipated consequences have always been formidable barriers to reform. Proponents of new programs have always had to combat the arguments of those who predict dire consequences if some innovation is adopted. Even though American history is full of cases where the opponents of change have later had to admit that the dangers they feared never materialized, inertia and the unwillingness to take risks have prevented a more rapid rate of change.

Inertia can more easily be overcome, however, if the proponent of change can point to the successful implementation of his program in some other similar setting. If a legislator introduces a bill which would require the licensing of probation officers, for example, and can point to its successful operation in a neighboring state, his chances of gaining acceptance are markedly increased. As Harsanyi has asserted:

> . . . it is not an overstatement to say that a very considerable part of the social values of most societies is based on sheer ignorance. . . . One of the reasons why other persons' example is so important in encouraging changes in people's values and behavior lies in the fact that it tends to dispel some groundless fears about the dismal consequences that such changes might entail. Another reason is of course that people can more easily face the possible hostility of the supporters of the old values if they are not alone in making the change.[43]

In fact, once a program has been adopted by a large number of states it may become recognized as a legitimate state responsibility, something which all states ought to have. When this happens it becomes extremely difficult for state decision makers to resist even the weakest kinds of demands to institute the program for fear of arousing public suspicions about their good intentions; once a program has gained the stamp of legitimacy, it has a momentum of its own. As Lockard found in studying the passage of Fair Employment Practices laws the actions of other states are sometimes key factors in prompting

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[41] This is not the first study to discover the important role of emulation and competition in the development of public policy. Richard Hofferbert in: "Ecological Development and Policy Change in the American States," *Midwest Journal of Political Science* (1966), p. 485; and Ira Sharkansky in: "Regionalism, Economic Status and the Public Policies of American States," *Southwestern Social Science Quarterly* (1968) both mention the influence of other states in the calculations of state decision makers. Several earlier students of local government complained that sparsely populated, arid Western states had blindly copied from the heavily populated Eastern states forms of local government which were inappropriately suited for the conditions prevailing in the Great Plains. See: A. Bristol Goodman, "Westward Movement of Local Government," *The Journal of Land and Public Utility Economics* (1944), pp. 20–34; Herman Walker, Jr. and Peter L. Hansen, "Local Government and Rainfall," this REVIEW (1946), 1113–1123. Robert L. Crain has recently used emulation as a principal explanatory variable in his study of the spread of water fluoridation programs among American cities: "Fluoridation: The Diffusion of an Innovation Among Cities," *Social Forces* (1966), 467–476; as did Thomas M. Scott in his: "The Diffusion of Urban Governmental Forms as a Case of Social Learning," *The Journal of Politics* (1968), 1091–1108.

[42] This set of hypotheses is consistent with more general theories concerning the manner in which human beings formulate judgments and establish expectations in all areas of life. See: Leon Festinger, "A Theory of Social Comparison Processes," *Human Relations* (1954), 117–140; and Robert Merton, *Social Theory and Social Structure* (Rev. Ed.; Glencoe, 1957), pp. 225–420.

[43] John C. Harsanyi, "Rational Choice Models v. Functionalistic and Conformistic Models of Political Behavior," (Paper delivered at American Political Science Association Meetings, 1967), p. 17.

reluctant politicians to accept controversial programs.

Pressure mounted in New Jersey during 1944 and 1945 for some stronger policy, and when New York passed its FEP law certain key politicians in New Jersey decided to act. Governor Walter E. Edge concluded, apparently reluctantly, that he had to commit himself to such a law. "As the session drew to a close," Edge wrote in his autobiography, "minority racial and religious groups pressed for adoption of an antidiscrimination program. While it was a subject which I would have preferred to give greater study, politically it could not be postponed because New York had passed a similar measure and delay would be construed as a mere political expedient."[44]

For similar reasons there have been numerous efforts to enact a program of homesteading in Hawaii as a way of disposing of its arable public lands even though the circumstances there are quite different from other states where homesteading was successfully introduced.[45] And in Connecticut one of the most powerful arguments in favor of introducing the direct primary system during the 1950's was simply that all the other states had adopted one.[46]

The Connecticut case neatly illustrates some of the generalizations we are developing. Lockard points out that the leaders of both political parties privately opposed the introduction of a primary system but felt that an endorsement of the idea had to be put into their platforms to avoid having their opponents charge them with "bossism." Demands for the primary came for the most part from small groups in the state's suburban areas which were interested in the issue as "a consequence of the influx of migrants from states with primaries."[47] Speaking as a professional political scientist as well as a legislator, Lockard was well suited to counter the extreme fears expressed by the party leaders who predicted that party organizations would be completely destroyed if primaries were introduced. Lockard reasoned by analogy to the experience in other states both in countering the opponents of change and in shaping his own moderate position:

> I expressed my considerable doubts about the effect of party primaries on party organization. From observations of politics in some of the most thoroughgoing party primary states, [however,] it seemed that the party organizations had been shattered with many undesirable consequences. In my campaign I expressed support only for a limited form of a primary and not one calculated to wreck the party system.[48]

Events like these illustrate the way in which the agenda of controversy in a state is determined, at least in part, by developments in other states, and they also show how experiences and examples from outside the system help to overcome the natural reluctance of any institutional structure to risk the consequences of change. The constituent units of any federal system are under considerable pressure to conform with national and regional standards or accepted administrative procedures. These norms result primarily from the processes of emulation and competition we have described and also from the efforts of nationally organized interest groups. They are affected also by the growth and development of professional organizations and other forms of communication among state administrators, and the natural circulation of active, politically involved citizens among the states, such as the Connecticut suburbanites who began agitating for a primary system in their adopted political home.

VI. REGIONAL REFERENCE GROUPS AND STANDARDS OF EVALUATION

Nationally accepted standards or norms provide a convenient measure which can be used by interested citizens or political leaders to judge the adequacy of services offered in their own states. But these norms have an ambiguous influence on the performance of state governments. On the one hand, the existence of national standards probably encourages *higher* performance among the *poorer* members of the federation than we could expect if functions and service levels were established independently within each unit of government, solely as a result of internal demands. An example of this tendency was discovered by May in his study of Canadian federalism:

> Newfoundland chose for a long time to remain outside the Canadian federation, thus not subjecting itself to the forces of national reorientation, and when, after joining the Dominion, a royal commission reported on its financial position, the commission observed that Newfoundland's public services were very backward in re-

[44] Duane Lockard, *Toward Equal Opportunity* (New York, 1968), pp. 20–21.

[45] Allan Spitz, "The Transplantation of American Democratic Institutions," *Political Science Quarterly* (1967), 386–398.

[46] Duane Lockard, *Connecticut's Challenge Primary: A Study in Legislative Politics* (Eagleton Case #7, New York, 1959).

[47] *Ibid.*, p. 2.

[48] *Ibid.*, p. 22.

lation to those of the other provinces, including even the maritimes. . . .[49]

In the United States, Mississippi, Vermont, and North Dakota are good examples of relatively poor states which are making unusually large efforts to bring their public services into closer approximation of national standards. But, on the other hand, national standards and norms can have a *conservative* impact, especially in the richer, industrial states which are able to provide services somewhat above the national averages with relatively little effort.[50] Hansen complains of this tendency when he points out that:

> Some northern states fall considerably below their northern neighboring states in public service standards. . . . Their fiscal problems arise not because they are poor but because their tax levels are low by northern standards. This is notably true for example of a tier of large industrial states—Illinois, Indiana, Ohio and Pennsylvania. . . . These states are not excessively hard pressed by tax burdens relative to the country as a whole.[51]

This statement by Hansen is drawn from an essay in which he expresses disapproval of what he considers the inadequate public services of large industrial states which have relatively low tax burdens. But the statement we have cited contains several ambiguities. For example, Hansen charges that "some northern states fall considerably below their northern neighboring states in public service standards," but then he specifically points as examples to Illinois, Indiana, Ohio, and Pennsylvania, states which border on each other. It is not clear whether we are being asked to compare these states to their neighbors, to other northern states with higher tax burdens, or to "the country as a whole." Within Illinois, however, the states' decision makers are probably comparing their own performance with their counterparts in Indiana, Ohio, Pennsylvania or New Jersey. Officials in Illinois may know of the procedures and performance levels in New York or California, but they are unlikely to think of events in these states as legitimate guides to action.[52]

When examining the public policy of any state, therefore, it is important to discover in which "league" it has chosen to play. For example, Salisbury, in a statement much like Hansen's, reasons by analogy in arguing that Missouri does not provide as much aid for its schools as its potential resources might warrant. He points out that in 1959 the "state ranked 18th in per capita income but 38th in per capita expenditure for local schools."[53] This relatively low level of support seems to result from the correspondingly low aspirations of the officials of the Missouri State Teachers Association who, according to Salisbury, "have chosen to get what they can with a minimum of agitation or conflict rather than attempt broader public campaigns in behalf of larger objectives."[54] The officials of MSTA "are fully conscious of the gap between the Missouri school aid level and that of, say, neighboring Illinois," but they are quick to point out "that by comparison with other neighboring states—Arkansas, Oklahoma, or Nebraska, for example—Missouri's record is much more impressive."[55] It would seem from this example that Missouri's leaders, at least those concerned with public education, are emulating and competing primarily with the states to their south and west, rather than with the Great Lakes states to their north and east, or the Rocky Mountain states, the Deep South or the Far West. The choice of relatively poor states like Arkansas and Oklahoma as the principal, legitimate reference groups establishes an upper limit of aspirations which is considerably below that which might exist if Missouri's accepted basis for comparison were the public services of Illinois, Wisconsin or Michigan.

VI. REGIONAL GROUPINGS AMONG THE STATES

We have come far enough in our analysis to see that our original presentation of the innovation scores in Table 1 as a linear distribution masked some pertinent information. A more useful representation of the data, which would con-

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[49] Ronald J. May, *Financial Inequality Between States in a Federal System* (unpublished doctoral dissertation submitted to Nuffield College, Oxford University, 1966), p. 168.

[50] For a somewhat similar argument concerning government spending see: Anthony Downs, "Why the Government Budget is too Small in a Democracy," *World Politics* (July, 1960), 541–563.

[51] Alvin H. Hansen, *The Postwar American Economy: Performance and Problems* (New York, 1964), pp. 30–31.

[52] For evidence of this perspective, see Thomas J. Anton, *The Politics of State Expenditure in Illinois* (Urbana, 1966), p. 263.

[53] Nicholas A. Masters, Robert Salisbury, and Thomas H. Eliot, *State Politics and the Public Schools* (New York, 1964), p. 12.

[54] *Ibid.*, p. 25.

[55] *Ibid.*, p. 21. For a similar discussion of the importance of aspirations in determining the speed with which innovations are adopted see: Rufus P. Browning, "Innovative and Noninnovative Decision Processes in Government Budgeting," in Robert T. Golembiewski (ed.), *Public Budgeting and Finance* (Itasca, Illinois, 1968), pp. 128–145.

form more closely to the actual patterns of diffusion, would have to be in the form of a tree. At the top of the tree would be a set of pioneering states which would be linked together in a national system of emulation and competition. The rest of the states would be sorted out along branches of the tree according to the pioneer, or set of pioneers, from which they take their principal cues. States like New York, Massachusetts, California, and Michigan should be seen as regional pace setters, each of which has a group of followers, usually within their own region of the country, that tend to adopt programs only after the pioneers have led the way. For example, Colorado, which ranks ninth in Table 1, might be seen as the regional leader of the Rocky Mountain states. The rest of the states in that region are found much further down the list: Utah is twenty-second, Idaho is thirty-third, Arizona is thirty-sixth, Montana is thirty-eighth, New Mexico is forty-first, Wyoming is forty-sixth, and Nevada is forty-seventh. All of these states, with the possible exception of Utah which may share in the leadership of the region, might be seen as Colorado's followers who usually pick up new ideas only after the regional pioneer has put them into practice.

If we are right about the general patterns of competition and emulation, we should discover in our data some evidence of the existence of regional clusters among the states. In an effort to find such groupings, a varimax factor analysis was performed, using a matrix of pair-wise comparisons of all state innovation scores on all eighty-eight issues. If states in the same region are adopting programs in a similar order or pattern over time, a factor analysis should uncover several underlying dimensions in the matrix along which all states would be ordered according to their responses to the programs upon which the innovation score is based. The results of the factor analysis are presented in Table 5.

As we can see, the regional groupings we expected to find do exist, although the patterns are not as neat and clear as we might have hoped. To produce each factor I recorded all loadings which were over .400. The five factors which result bring the states into generally recognizable, contiguous groupings. The states with the largest loadings in each region are not necessarily those with the highest innovation scores. Instead, they are states like Connecticut, Florida, or New Mexico whose innovation scores are closer to the average for their regions. The presence of Nebraska, Iowa and South Dakota on Factor 1, which otherwise identifies Southern states, may indicate that more than one regional cluster is being identified on that factor.

There are several ambiguities in the data. For example, New York, Pennsylvania, West Virginia, Arkansas, and Illinois are loading on more than one factor. The easiest explanation of this may be that the states actually have connections with more than one region. This is especially true of New York, the state with the highest innovation score, which displays fairly strong connections in this analysis with the New England. Mid-Atlantic, and Great Lakes states. I believe that this finding reflects the fact that New York actually serves as a model for states in all three areas. Certainly New York is formally involved in interstate compacts with all three regions, and, if nothing else, enjoys a perfect geographical position from which to carry on relations over such a large area. If the findings concerning New York seem explainable, those concerning California do not. I cannot explain why California loads on Factor V, especially since many of its neighbors load on Factor III. These ambiguous findings concerning New York and California might be merely a reflection of ambiguity in the data. Factor analysis will identify regional groupings in the data only if the regions respond to new programs as a unit, adopting some new ideas with haste and lagging behind on others. Since New York and California consistently lead the country in the adoption of new programs, they may not be members of the cohesive regional group or "league" of states, a fact which may prevent their neat categorization through factor analysis.

There is no accounting at all in this analysis for the behavior of three states: Arizona, Colorado, and Kansas. Both Colorado and Arizona load at the .300 level on Factor III, the one which includes most of the rest of the Rocky Mountain states. Colorado and Nevada both load strongly (.577 and .485 respectively) on a separate factor which was not reported since no other state scored higher than .300 on the factor and its contribution score was only 1.7. The same is true for Kansas which was the only state loading strongly (at .658) on a factor whose contribution score was only 1.9.

VII. SPECIALIZED COMMUNICATIONS AMONG THE STATES

Our analysis has provided evidence that a continuum exists along which states are distributed from those which are usually quick to accept innovations to those which are typically reluctant to do so; we also know something about the correlates of innovation and have evidence of regional groupings among the states; but it is not always easy to identify a regional pioneer or to know exactly which states make up each

TABLE 5. VARIMAX FACTOR ANALYSIS OF INNOVATION SCORES FOR FORTY-EIGHT STATES

Factor Loading	State
FACTOR I (South)	
.756	Florida
.711	Tennessee
.663	Alabama
.661	Virginia
.656	Georgia
.630	Mississippi
.621	Delaware
.600	North Carolina
.590	South Carolina
.576	Arkansas
.543	Texas
.517	Nebraska
.464	West Virginia
.460	Louisiana
.459	Iowa
.454	South Dakota
.433	Nevada
7.8	Total Factor Contribution
FACTOR II (New England)	
.795	Connecticut
.766	Massachusetts
.758	New Hampshire
.659	Rhode Island
.536	New York
.512	Vermont
.434	Maine
.404	Pennsylvania
4.1	Total Factor Contribution
FACTOR III (Mountains and Northwest)	
.791	New Mexico
.719	Idaho
.702	Montana
.694	Utah
.638	Washington
.620	North Dakota
.610	Wyoming
.569	Oklahoma
.516	Louisiana
.503	South Dakota
.432	Oregon
.419	Maryland
.410	Arkansas
.407	West Virginia
6.7	Total Factor Contribution
FACTOR IV (Mid-Atlantic and Great Lakes)	
.795	New Jersey
.637	Wisconsin
.605	New York
.577	Minnesota
.536	Illinois
.516	Pennsylvania
.451	Indiana
4.0	Total Factor Contribution
FACTOR V (Border, Great Lakes and California)	
.698	California
.610	Missouri
.584	Kentucky
.577	Michigan
.548	Ohio
.515	Nebraska
.458	Illinois
4.1	Total Factor Contribution

"league" or sub-system of cue-taking and information exchange. Some states seem to have connections with more than one region and may regularly receive cues from states in both groupings. As the American political system has developed, an increasing number of specialized communication systems have been created which cut across traditional regional lines and bring officials from many different regions into contact with each other and with federal and local officials, journalists, academic experts, and administrative consultants.

Several organizations now exist, such as the Council of State Governments, the Federal Commission on Intergovernmental Relations, and the recently established Citizen's Conference on State Legislatures, whose primary function is to improve communications among the states. Most important of these specialized communications networks are the professional associations of state officials, such as the National Association of State Budget Officers, or the National Association of State Conservation Officers. Associations of this kind were first created late in the nineteenth century and more seem to be forming each year. There were only five formed prior to 1900, but by 1930 there were approximately thirty-one, and by 1966 there were at least eighty-six in existence.[56]

[56] Unpublished memo from the Council of State Governments, Chicago, Illinois.

These groups serve two general purposes: first, they are sources of information and policy cues. By organizing conferences or publishing newsletters they bring together officials from all over the country and facilitate the exchange of ideas and knowledge among them, thus increasing the officials' awareness of the latest developments in their field. Secondly, these associations serve as "occupational contact networks" which expedite the interstate movement or transfer of personnel. Through the efforts of these groups officials become aware of desirable job openings in other states and are able to create professional reputations that extend beyond the borders of their own states.[57]

By rapidly spreading knowledge of new programs among state officials and by facilitating the movement of individuals to jobs in other states, professional associations encourage the development of national standards for the proper administration and control of the services of state government. Just as in other sectors of American life such as the business, the military and the academic world, as individuals increase their mobility, their role perceptions are likely to change; they are likely to adopt a more cosmopolitan perspective and to cultivate their reputations within a national professional community rather than merely within their own state or agency.[58]

Since general awareness of new developments is achieved much more quickly now than ever before, we would expect that the time which elapses from the first adoption of an innovation by a pioneering state to its complete diffusion throughout all the states would be greatly reduced. Certainly, several recent innovations, such as educational television or state councils on the performing arts, have diffused rapidly. In Table 6 we have measured the average speed of diffusion in years for three periods of time: 1870–1899, 1900–1929, and 1930–1966. The results shown in the first column of this table make it very plain that the speed of diffusion has been constantly increasing as time has passed. This measurement, however, is somewhat misleading. The second column of the table indicates the average number of years it took the first twenty states to adopt the programs in each time period. The same trend toward increased speed of diffusion is evident here, but the differences among the three time periods are much smaller.[59] This evidence suggests that the pioneering states, those with high innovation scores, adopted new programs about as quickly in the early part of this century, prior to the development of many specialized communication links, as they did in the 1960's. The total elapsed time of diffusion, however, has decreased primarily because the laggard states, those with low innovation scores, are now reacting more quickly to pick up new programs adopted by the pioneers. This development results partly from the efforts of the federal government to stimulate state action through grants-in-aid, and partly from the increasing professional development in state government. Both these tendencies seem to have had a larger impact on the behavior of the more parochial states than the more cosmopolitan, pioneering states.

TABLE 6. AVERAGE ELAPSED TIME OF DIFFUSION IN YEARS FOR INNOVATIONS IN THREE TIME PERIODS

Time Periods	For All Adoptions	First Twenty Adoptions
1870–1899:	52.3	22.9
1900–1929:	39.6	20.0
1930–1966:	25.6	18.4

VIII. THE PERSISTENCE OF REGIONALISM

Improved communications and greatly increased contacts of all kinds among state officials seem to be accelerating the process of diffusion, but this does not necessarily mean that the regional clusters or "leagues" of states

[57] For a discussion of the role of professional organizations in determining career lines see: Fred E. Katz, "Occupational Contact Networks," *Social Forces* (1958), 52–58. Also see: Jack Ladinsky, "Occupational Determinants of Geographic Mobility Among Professional Workers," *American Sociological Review* (1967), 253–264.

[58] Merton, *op. cit.* Also see: Alvin W. Gouldner, "Cosmopolitans and Locals: Toward an Analysis of Latent Social Roles," *Administrative Science Quarterly* (1957), 281–306; and Harold L. Wilensky, *Intellectuals in Labor Unions* (Glencoe, 1956).

[59] A small portion of the difference between the two columns in Table 6 is an artifact of measurement. Since not all the programs in this analysis have been adopted by all forty-eight states, laggard states sometimes remain. As time passes and programs receive widespread acceptance these laggard states slowly fall into line and adopt the programs. Since the programs in the first two time periods have been around longer, they have more likely completed their spread among the states and thus, given our scoring procedure, are also more likely to have a longer period of diffusion.

to which we have referred have been destroyed.[60] In order to investigate this question the innovation scores in the time periods from 1870 to 1929 were combined, and two matrices of innovation scores of almost equal size were created, one for 1870–1929 and the other for 1930–1966.[61] Within each of these matrices each state's set of innovation scores (issue by issue) was correlated with the set of innovation scores for each other state. A varimax factor analysis was performed on each matrix, just as was done earlier to produce Table 5.

The results of this analysis are presented in Table 7. The factors derived from 1870–1929 are presented in the left column of the table and those from 1930–1966 are presented in the right column. The factors from each time period are arranged with the highest loadings first and the rest following in descending order. As we can see, the factors from the two time periods are not completely comparable. Some states change their relative rankings on the two factors, and some appear on a factor during only one of the time periods. The state of Georgia, for example, is found at the bottom of Factor 1 during 1870–1929 and moves all the way to the top of the same factor during 1930–1966. Some regional groupings, such as New England, seem to be disintegrating, while others, such as the Middle Atlantic states, seem to be more clearly defined in the later period. The factors for the later period include more states, on the average, and have slightly higher contribution scores, but they are not quite as distinct as those in the early period and include more inappropriate loadings. These data do not contain evidence of any large scale erosion of regionalism in the United States, but a drift away from clearly defined clusters of states is apparent.

During the last thirty years many new professional associations have been formed and more inter-state and federal agencies have begun facilitating communications and encouraging national uniformity. The diffusion process is operating much faster today than ever before, especially among those states which have traditionally lagged behind in adopting new ideas. The older, established modes of communication and evaluation, based on traditional ties of region and common culture, are persisting, but there are indications in these data that the system is slowly changing. Decision makers in the states seem to be adopting a broader, national focus based on new lines of communication which extend beyond regional boundaries.

IX. CONCLUSIONS

This essay began as an effort to explain why some states adopt innovations more rapidly than others, but in order to explain this aspect of American federalism, we have had to make a more extensive investigation of the complex system of social choice by which we are governed. The approach to policy making which has emerged from our investigation is founded on the perceptions and attitudes of individual state decision makers. Of course, as I have already mentioned, the theory cannot be fully elaborated or put to a test until data can be gathered directly from legislators, bureaucrats, governors, and other officials in several states, on a comparative basis. Enough evidence has been presented already, however, to make apparent the major theoretical and practical implications of this approach.

The theory presented here directs our attention to the rules for decision employed by policy makers, rather than their formal group affiliations or their relative power or authority, and thus enables us to offer useful explanations of all policy decisions, not merely those which generate controversy. Emphasis is placed on those factors which lead to the establishment of parameters or guidelines for decision, not on the groups or interests supporting one policy over another. In Figure 1 the outlines of the diffusion process are depicted as it operates in a single state. There are undoubtedly many other influences on the level of agitation for change than the ones presented here, and many other secondary effects stemming from the enactment of new programs; this simple diagram is only meant to summarize the fundamental process operating in most cases of diffusion. Relationships are characterized by plus and minus signs but no effort has been made to estimate their relative importance in the system.

The process we have been describing is extremely complex; many influences shape deci-

[60] The best recent analysis of long-term changes in the American political system is: Donald Stokes, "Parties and the Nationalization of Electoral Forces," in William N. Chambers and William D. Burnham (eds.), *The American Party Systems: Stages of Political Development* (New York, 1967), pp. 182–202. Also see: Norval D. Glenn and J. L. Simmons, "Are Regional Cultural Differences Diminishing?" *Public Opinion Quarterly* (1967), 196–205; and Ira Sharkansky, "Economic Development, Regionalism and State Political Systems," *Midwest Journal of Political Science* (1968), 41–61.

[61] When the data are combined in this manner the 1870–1929 matrix contains 42 issues and the 1930–1966 matrix contains 46 issues.

TABLE 7. VARIMAX FACTOR ANALYSIS OF INNOVATION SCORES FOR FORTY-EIGHT STATES IN TWO TIME PERIODS

FACTOR I (South) 1870–1929		FACTOR I (South) 1930–1966	
Factor Loading	State	Factor Loading	State
.762	Tennessee	.793	Georgia
.748	Mississippi	.759	Virginia
.745	Florida	.649	Delaware
.705	North Carolina	.629	Tennessee
.662	West Virginia	.623	Florida
.646	Kentucky	.593	Texas
.521	Louisiana	.570	North Carolina
*.499	Arizona	*.541	Utah
.465	Delaware	.524	Alabama
.426	Virginia	.494	Maryland
.425	South Carolina	*.493	Nebraska
*.424	Iowa	.493	South Carolina
.404	Georgia	*.451	Arizona
		*.432	Montana
5.7	Total Factor Contribution	*.426	Kansas
		*.415	Iowa
		*.415	Maine
		.413	Louisiana
		*.410	New Hampshire
		7.1	Total Factor Contribution
FACTORS II AND III (New England—Mid-Atlantic—Great Lakes)			
.851	Connecticut	.800	Connecticut
.814	New Hampshire	.702	Massachusetts
.707	Vermont	.629	New Hampshire
.705	Massachusetts	*.564	Colorado
.670	Rhode Island	*.498	Oregon
.576	Maine	.467	Rhode Island
.509	Delaware		
.487	New York	1.7	Total Factor Contribution
.467	Pennsylvania		
.467	Virginia		
.405	Maryland		
*.405	Alabama		
5.3	Total Factor Contribution		
.808	Kansas	.778	New York
.694	Indiana	.686	Pennsylvania
.643	Wisconsin	.684	New Jersey
.622	Illinois	.666	Wisconsin
.601	Minnesota	.537	Illinois
*.448	Texas	.491	Michigan
		.486	Indiana
4.5	Total Factor Contribution	.474	Minnesota
		.448	Maryland
		4.8	Total Factor Contribution
FACTOR IV (Plains and Mountains)			
.769	North Dakota	.710	North Dakota
.762	New Mexico	.683	New Mexico
.722	Montana	.682	Kansas
.709	Utah	.641	Wyoming

* States which are loading on inappropriate factors are marked with an asterisk.

TABLE 7—(*Continued*)

FACTOR I (South) 1870–1929		FACTOR I (South) 1930–1966	
Factor Loading	State	Factor Loading	State
.665	Idaho	.633	Oklahoma
.639	Washington	.598	Washington
.567	South Dakota	.572	Oregon
*.494	Maine	.557	Utah
		*.494	Alabama
4.7	Total Factor Contribution	.462	Idaho
		*.457	Vermont
		*.439	West Virginia
.751	Arizona	*.416	Wisconsin
.588	Nevada	.410	Montana
.578	Wyoming	*.406	Mississippi
*.469	Arkansas		
		6.5	Total Factor Contribution
2.5	Total Factor Contribution		
.730	Oregon		
.611	California		
.645	Colorado		
*.433	Maryland		
2.9	Total Factor Contribution		
FACTOR V (Mid-America)			
.885	Missouri	.726	Missouri
.767	Nebraska	.614	Mississippi
*.639	Michigan	*.600	South Carolina
.419	Ohio	*.589	Idaho
*.400	California	.573	Arkansas
		.530	Tennessee
3.4	Total Factor Contribution	.432	Illinois
		.426	West Virginia
		*.409	South Dakota
		*.409	Montana
		4.5	Total Factor Contribution

sions to adopt innovations and no two ideas diffuse in exactly the same way. In all cases, however, the likelihood of a state adopting a new program is higher if other states have already adopted the idea. The likelihood becomes higher still if the innovation has been adopted by a state viewed by key decision makers as a point of legitimate comparison. Decison makers are likely to adopt new programs, therefore, when they become convinced that their state is relatively deprived, or that some need exists to which other states in their "league" have already responded.

Before states may respond to new programs adopted in other states their political leaders must be aware of these developments, so interstate communications are an important factor in the process of diffusion. We have mentioned that many specialized systems of communication among the states have grown up during the last thirty years, mainly through the creation of

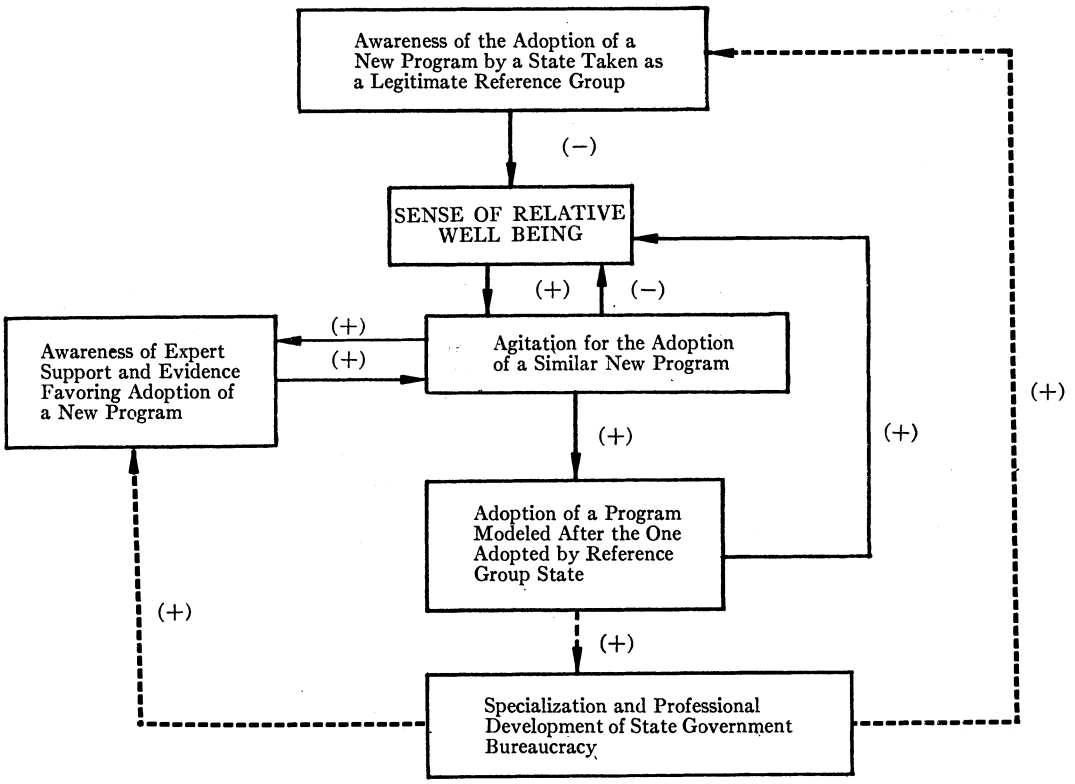

FIGURE 1. Factors Affecting the Adoption of Innovations.*

* Secondary effects depicted by broken lines.

professional associations among state administrators. These new information networks are spreading into all the states, but even today the isolation of some state capitols from the major cosmopolitan centers of the country is a major obstacle to the adoption of new ideas.[62]

Emerging from this study is the picture of a national system of emulation and competition. The states are grouped into regions based on both geographical contiguity and their place in the specialized set of communication channels through which flow new ideas, information and policy cues. Through this nationwide system of communications a set of norms or national standards for proper administration are established. This system links together the centers of research and generation of new ideas, national associations of professional administrators, interest groups, and voluntary associations of all kinds into an increasingly complex network which connects the pioneering states with the more parochial ones. Because of the limitations of the data presently available to us we can only outline each regional grouping of states, and we cannot yet construct an elaborate theory of the interactions among professional associations, federal officials, private interest groups, and political leaders in setting the agenda of politics within a state. Normative questions arise, which cannot be considered here, concerning the responsiveness of this system and the degree to which it is subject to the control of democratic, representative institutions.[63] Much more investigation will

[62] See Alan L. Clem's description of the isolation of Pierre, the capitol of South Dakota, in his: *Prairie State Politics: Popular Democracy in South Dakota* (Washington, 1967), p. 137; and Norton E. Long's emphasis on the importance of information sources in his: "After the Voting is Over," *Midwest Journal of Political Science* (1962), 183–200. For a general review of communications theory and its application to politics see: Richard R. Fagen, *Politics and Communication* (Boston, 1966), especially pp. 34–69, 88–106. Also see: Karl W. Deutsch, *The Nerves of Government,* Second Edition, (New York, 1966), especially pp. 145–256.

[63] Questions of this kind have been raised already in: Daniel P. Moynihan, "The Professionalization of Reform," *The Public Interest* (1965), 6–16; Theodore J. Lowi, "The Public Philosophy: Interest Group Liberalism," this REVIEW (1967), 5–24; and Philip Green, "Science, Government, and the Case of RAND: A Singular Pluralism," *World Politics* (1968), 301–326.

be necessary before we can gain a full understanding of this system and its function as a device for controlling the pace and direction of policy development in the American states. Once we know more, it might be possible to prescribe with confidence some changes in the decision-making system, or the creation of some new governmental institutions, which might accelerate or redirect the process of innovation.

APPENDIX

NOTE: Following are the eighty-eight programs upon which the innovation score is based.

1. Accountants Licensing
2. Advertising Commissions
3. Agricultural Experiment Stations
4. Aid for Roads and Highways
5. Aid to the Blind (Social Security)
6. Aid to Dependent Children (Social Security)
7. Aid to Permanently and Totally Disabled (Social Security)
8. Air Pollution Control
9. Alcoholic Beverage Control
10. Alcoholic Treatment Agencies
11. Anti-Age Discrimination
12. Anti-Injunction Laws
13. Architects Licensing
14. Australian Ballot
15. Automobile Registration
16. Automobile Safety Compact
17. Beauticians Licensing
18. Board of Health
19. Budgeting Standards
20. Child Labor Standards
21. Chiropractors Licensing
22. Cigaret Tax
23. Committee on the Aged
24. Compulsory School Attendance
25. Conservation of Oil and Gas
26. Controlled Access Highways
27. Council on the Arts
28. Court Administrators
29. Debt Limitations
30. Dentists Licensing
31. Direct Primary
32. Education Agencies
33. Education Television
34. Engineers Licensing
35. Equal Pay for Females
36. Fair Housing—Private
37. Fair Housing—Public Housing
38. Fair Housing—Urban Renewal Areas
39. Fair Trade Laws
40. Fish Agency
41. Forest Agency
42. Gasoline Tax
43. Geological Survey
44. Highway Agency
45. Home Rule—Cities
46. Human Relations Commissions
47. Initiative and Referendum
48. Integrated Bar
49. Junior College—Enabling Legislation
50. Juveniles Supervision Compact
51. Labor Agencies
52. Legislative Pre-Planning Agencies
53. Legislative Research Agencies
54. Library Extension System
55. Mental Health Standards Committee
56. Merit System
57. Migratory Labor Committee
58. Minimum Wage Law
59. Normal Schools—Enabling Act
60. Nurses Licensing
61. Old Age Assistance (Social Security)
62. Parking Agencies—Enabling Act for Cities
63. Park System
64. Parolees and Probationers Supervision Company
65. Pharmacists Licensing
66. Planning Board—State Level
67. Development Agency
68. Police or Highway Patrol
69. Probation Law
70. Public Housing—Enabling Legislation
71. Real Estate Brokers—Licensing
72. Reciprocal Support Law
73. Retainers Agreement
74. Retirement System for State Employees
75. Right to Work Law
76. School for the Deaf
77. Seasonal Agricultural Labor Standards
78. Slaughter House Inspection
79. Soil Conservation Districts—Enabling Legislation
80. Superintendent of Public Instruction
81. Tax Commission
82. Teacher Certification—Elementary
83. Teacher Certification—Secondary
84. Urban Renewal—Enabling Legislation
85. Utility Regulation Commission
86. Welfare Agency
87. Workmens' Compensation
88. Zoning in Cities—Enabling Legislation