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HOW TO STUDY THE EFFECTS OF STRUCTURE

by

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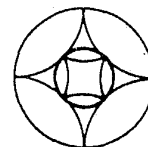
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Abstract

Does structure make a difference? Does politics affect policy? Most people would say yes, but a number of social scientists have argued that they do not. Their arguments are reviewed and contrasted with those who have found structural or political effects. The difference in findings is attributed to differences in the adequacy of the theories underlying the analyses. To show that structure is important, one must have a theoretical explanation of how it is important. An example is developed using findings from studies of local police service delivery and some implications for research design are suggested.

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HOW TO STUDY THE EFFECTS OF STRUCTURE

If you were to ask a proverbial "man on the street" whether the structure of an enterprise affects its performance, he would probably reply: "Of course it does." If you were to ask a social scientist the same question, particularly with reference to the structure of public enterprises, the response might be less positive. Some social scientists would declare flatly that structure does not affect performance. Why this disjuncture between what "everyone" knows and the position of many academics? The answer lies in the academics' reading and interpretation of a number of research reports over the last three decades.

This article disputes the contentions of those who argue that structure is unimportant. Organizational structures can provide opportunities, incentives, and constraints for actors within them. If structure influences performance through opportunities, incentives, and constraints, then analyses finding no structural effects have generally been incorrectly specified. That is, organizational structure should not be conceived of simply as one more ingredient in a mixture yielding performance. Analyses of organizational structures as they influence performance must, instead, be based on a theoretical specification of how structure affects relationships among other variables as they, in turn, may influence performance. One does not add structure, resources, and environment together to produce output. Rather, structure influences the ways that organizations transform resources into differing quantities, qualities, and mixes of output in diverse environments.

The distinction is important. Scholars who have posed the question, "Is organization important?," have often found little importance when they used simple, additive models. Those who have posed a different question, "How is organization important?," have often found substantial organizational effects by using more complex models in their analyses.¹

Accepting the task of demonstrating how organization influences performance does not require denial of the importance of environmental factors. Social, economic, and other environmental elements can and often do constrain performance possibilities in important ways. Yet these elements are generally immutable, at least in the short run. Policy analysts are forced to accept these elements as given in any particular situation, and to ask what differences might result from alternative policy choices in that context. Organizational forms and procedures are more amenable to change than are underlying social, economic, psychological, or environmental factors. We may be able to alter the size, internal structure, or operating procedures of a public organization more easily than we can alter the racial characteristics, income distributions, or extent of anomie among its clientele, or the weather conditions in its jurisdiction. Because of environmental constraints, performance differences attributable to organization may be modest and often the indirect results of policy choices. Thus, the elaboration of organizational influences on performance is not simple. Careful analysis, informed by a theory of the processes at work, is required.

In this article I will review some of the findings from research efforts by several colleagues and myself in the area of police service delivery. These findings suggest that organizational structure does

influence performance, and does so in predictable ways. First, however, I present a brief review of some important works that have been used to argue that structure is of little importance. I will then offer a summary critique of these efforts and review some recent works that have used approaches more consistent with what I propose. These latter works have indeed shown ways that structure can influence performance.

Studies of the Determinants of Public Expenditures

Beginning with the work of Hawley (1951), empirical analyses of relationships between government expenditures and a variety of a social and economic (and, somewhat later, political) variables have appeared in studies by sociologists, economists, and political scientists. The first extended analysis of these relationships was that of Fabricant (1952), who found that a set of socioeconomic variables could be used to account for a large proportion of the variance in expenditures among states and among municipalities in the United States. Other important contributions to these studies of "determinants," as they came to be known, were those by Brazer (1959), Fisher, (1961; 1964), Sacks and Harris (1964), and Bahl (1969). Their findings, using increasing degrees of sophistication in statistical technique, were essentially the same. Variations in government expenditures from state to state, county to county, or municipality to municipality were quite closely related to variations in social and economic conditions among these units. Using multiple regression and related techniques, it was possible to account for 50, 60, or even

more than 70 percent of the variance in government expenditures by employing social and economic variables alone as predictors. This held true whether governmental expenditures were measured in total or in specific functional categories.

Economists were generally content to pursue these analyses of the determinants of government expenditure qua expenditures. They pursued a positive theory of public expenditures that could be induced from the statistical results (Bahl, 1969). The development of theory generally followed, rather than preceded the analyses (in fact, if not always in presentation), with the result that these "theories" had an ad hoc flavor that has been the subject of a number of critiques.²

Political scientists have often made greater claims for their analyses. Designating measures of expenditures as "policy outcomes" (e.g., Dye, 1966) and including a selection of political variables in their analyses, they argued that they were testing whether the political system made any difference for such outcomes. Contributors to this research include Dawson and Robinson (1963), Hofferbert (1966), Fried (1974), and many more.³ Given the findings of determinants studies that a large proportion of expenditure variation is accounted for by social and economic variables, it is not surprising that political "determinants" studies usually reported little or no influence for political variables once controls for social and economic conditions were imposed.⁴ While the efforts of these political scientists were often couched in more theory-laden terms than the efforts of economists and sociologists engaging in similar research, their theories have been challenged as equally ad hoc or as unconnected with their empirical analyses.⁵

Studies of the Determinants of Public Outcomes

A different, yet related, line of scholarship focused on the outputs and outcomes of public service agencies as distinct from their expenditures. Studies of education and police services, for example, have many similarities in technique and in findings to the studies of determinants of public expenditures.

In the field of education the primary study was that of James Coleman and his colleagues, Equality of Educational Opportunity (1966, referred to as the Coleman Report). The Report addressed the question of how much variance in childrens' educational achievement could be accounted for by the characteristics of the schools they attended. The answer, after controls for a child's home and community characteristics were imposed, was not very much (see, in particular, pages 290-333 of the Report).

In the field of public safety, similar studies offered similar results. Using virtually identical reasoning and technique to the education analysis in the Coleman Report, Wellford reported that "crime rates are largely a function of demographic and social characteristics, and the clearance of index crimes is largely a function of the nature of the crime" (1974: 208). Once controls for social and demographic conditions were imposed, the characteristics of the police agencies serving an area accounted for very little of the variance in crime and clearance rates. Others reporting similar conclusions include Kobrin, et al. (1972), Jones (1973), Greenwood and Wadycki (1973), and Swimmer (1974).

The political scientists' versions of expenditure determinants studies asked the question, "Does politics make a difference?," and advanced the answer, "It does not." These service outcome studies asked the question, "Does structure (or organization) make a difference?," and reported a similar answer, "Not much." The findings across a large number of studies exhibited a basic consistency. But, it may be that the similarity in question and in the techniques employed to provide an answer had more to do with the consistency of that answer than is apparent in reading these reports. This is the contention of a number of critics of such studies, one that I share with the critics.

Critiquing Studies of "Determinants"

The skeletal frameworks of determinants studies have a great deal in common, though the substantive flesh may be quite different. One asks, "How important is X as an influence on Y?," and develops an answer in terms of the proportion of the variance in Y that can be accounted for by X, after control for some set of Z's. If that proportion is small, particularly if it is small in relation to the proportion accounted for by the Z's, one asserts that X is not important. The Z's are variables that are claimed to be antecedent to Y and X, or to be a part of the environment where X must operate on Y.

Thus, studies of determinants of policy outputs (measured most often as levels of expenditure by governments) asked whether political variables (X's) accounted for any variance in expenditures (Y) once social and economic characteristics (Z's) were controlled. Studies of

the effects of school or police agency characteristics (X's) on levels of achievement by students, or crime in jurisdictions (Y's) similarly looked for explained variance in the Y's after control for social and demographic characteristics (Z's). The particular techniques employed in these analyses were one of several variants on the general linear model in statistics (Bibby, 1977; Van de Geer, 1971), usually partial and multiple partial correlation or analysis of variance based on block regressions. But, as critic after critic has stated, these techniques cannot provide a sensible answer to the question at issue ("How important is X as an influence on Y?") unless some very stringent assumptions are met. And, as critics have also argued, these assumptions are generally unmet in the analyses of determinants.

The single most important assumption underpinning any statistical model of influences from the perspective of this argument is that the model is correct in specifying how X influences Y (as well as how the Z's influence Y). A statistical finding of no effect of X on Y can mean that: (a) there is really no relationship between X and Y once the effects of the Z's are controlled, or (b) the model that is being tested by estimating the influence of X on Y is incorrect.⁶ To have a correct model for statistical analysis, however, requires that one have a theoretical understanding of how X influences Y. To sensibly answer the question, "How important are political variables?," one must answer the prior theoretical question, "How are political variables important?" (Godwin and Shepard, 1976: 1,134).

This requirement of specifying how political variables are important, and the failure to satisfy it in determinants studies is where critics have focused sharp attacks. Jacob and Lipsky noted that

"each investigator appends a theoretical framework to his study . . . (but) the theory . . . rarely guides the research" (1968: 514). Meltsner and Wildavsky note this phenomenon as well, characterizing determinants studies in a most unfavorable light as "mindless empiricism with relations established not on grounds of explanatory relevance but simply by the availability of census data" (1970: 318). Where a theory of political or structural influence on a variable of interest (e.g., expenditures or service outcomes) might require the consideration of complex interactive or contextual effects, most determinants studies have employed a linear additive model. By way of analogy, such research suggests that a given expenditure by a public agency, for example, is brought about by adding together two cups of per capita income, one cup of percent nonwhite, one cup of intergovernmental revenues, and three teaspoons of party competition in the previous election. While the units and proportions are not generally stated in this way, the logic of analysis is the same. It is unremarkable that little influence has been found for political or structural variables through the use of this type of analysis. While we may feel comfortable that these analyses usually indicate that wealthy states spend more, or that the children of better educated parents achieve more in school, our comfort should not increase our confidence in the findings with respect to the lack of political or structural influences.

The Necessity and Utility of Theory-Based Analysis

Statistical analyses that are based on an inadequate model of the underlying phenomena are fated to yield inadequate answers. In

technical language, they are prone to "specification errors," which cause coefficient estimates to be biased and inferential statistics to be inaccurate (Johnston, 1972: 168-169; Hanushek and Jackson, 1977: 79-86). Of greater importance, however, is the substantive problems they engender. Sophisticated statistical techniques can lend an aura of respectability to an incorrect substantive statement of relationships. The translation of a substantive argument into a statistical analysis inevitably tends to narrow, trivialize, technicalize, obscure, and expertize a debate (Bibby, 1977: 77):

while the original question could be stated, understood, and answered by the ordinary literate man in the street, the new "statistical" question is formulated in such a way that only a few experts can understand it, let alone express an opinion (ibid.).

It may be that the statistical question as stated is only remotely connected to the substantive question. This does not mean that one should refrain from sophisticated statistical analyses. It does mean that the first issue to be addressed in any analysis is the adequacy of the theoretical explanation that the statistical analysis implicitly or explicitly tests. When the theoretical explanation is accounted for satisfactorily, then the argument can turn to the technical aspects of the statistical analysis.

The relevance of this for the politics and policy outcomes studies and the structure and performance studies is that when such studies have used a theory of how politics might affect outcomes or how structure might affect performance, they have often found substantial influences for these variables. In studies of the effect of politics on policy outcomes, this has usually meant using a theory that specified ways in which politics operate to influence the

relationship between socioeconomic conditions and public expenditures. Socioeconomic conditions are used as surrogate measures for the demand for public goods, while expenditures are surrogates for the supply. Political factors then are posited to condition the way that governments tailor supply to demand.

In studies of the effects of structure on performance, those that have shown structural influences have usually included a theory of how structural constraints operate to condition the transformation of inputs to outputs. Some have also considered how structure affects an organization's capacity and incentives to tailor its supply to consumer demands. An important element shared by more fruitful studies of political and of structural effects is their focus on differences in relationships among variables in the context of different political or structural conditions. The political or structural contexts are conceptualized as systems in the usage of comparative scholars.

Systems differ [i.e., politics or structure makes a difference] not when the frequency of particular characteristics differ, but when the patterns of the relationships among variables differ (Przeworski and Teune, 1970, emphasis in original).

Lineberry and Fowler, for example, examined the effects of political reforms in municipal governments on the linkage of supply and demand in their jurisdiction (1967). They hypothesized that outputs would be more responsive to social and economic conditions in cities that were less reformed and, thus, where the political system would be more open to social conflicts and cleavages. Their findings supported the hypothesis. Taxes and expenditures were more closely correlated with social and economic conditions in unreformed cities

than in cities with city managers and nonpartisan elections. Political variables, in this case the presence or absence of reformed structures, acted to condition the relationships of socioeconomic conditions and government policies.

Carmines's (1974) analysis of the effect of legislative professionalism on the relationship between interparty competition and welfare policies offers another example. He hypothesized that professionalism would affect the strength of this relationship, with the strength likely to be greater in those states having well-organized states legislatures. His hypothesis was supported by the analysis, indicating that political institutions in the states significantly influence the possibility of linkage between politics and policy outputs.

A comparison of analyses in a very different area shows again the value of theoretically adequate specification. Fried (1974), using partial correlation analysis along the lines of that employed earlier by Dye, reported that the party in power had little effect on policy outputs in German cities. Frey and Pommerehne (1978), on the other hand, report that party does make a difference in policy outputs in Germany if examined in an analysis that includes consideration of the party-in-power's re-election prospects and the proximity in time of the next election.⁷ In the latter analysis, careful consideration of how politics might, in theory, affect policy outputs led to an empirical finding that it did so in the specified way.

In a recent article Summers and Wolfe raise the issue, "Do schools make a difference?" (1977). They use a theoretical and analytical approach that enables them to explore the effects of

schools as they interact with socioeconomic characteristics of pupils and their peers, rather than treating them as simple additive factors.⁸ They report that school variables do make a difference in pupils' gains in achievement, with some interesting interactive effects. Class size, for example, was found to have differential effects, depending upon the achievement level of students: a negative effect on low achieving students and a positive one on high achievers. Low achievers do better in smaller classes and high achievers do better in larger classes. School size also has differential effects. Smaller schools are more beneficial for all pupils, but particularly so for black pupils.

Some recent analyses of the relationships among socioeconomic conditions, the structure and activities of police forces, and criminal activity, indicate that analyses based on theories of how the structure of police forces might affect the relationships of crime to socioeconomic conditions find effects where earlier studies did not (e.g., McPheters and Stronge, 1974; Phillips and Votey, 1972; Wilson and Boland, 1978). Accepting the premise that crime may be closely related to socioeconomic conditions these studies go on to postulate an interactive effect of crime and police activities, with more crime engendering more police who, in turn, may reduce crime through their presence and their aggressiveness. Here, as in education and in the politics/ policy outputs literature, theory-based analyses find that structure affects performance -- and politics affects policy -- where nontheoretical analyses did not.

An important element in these theory-based analyses is their view of politics or structure as a variable acting to condition relationships among other variables. Politics is not simply one more ingredient in a socioeconomic batter. Rather, political variables, the structure of the electoral process for example, act like different cooking devices -- campfires, gas stoves, or microwave ovens. The use of different cooking devices often requires different mixes of ingredients for a batter, and may affect whether it rises or not. Likewise, different electoral systems may alter the transformations between socioeconomic variables and government expenditures or outcome measures, or specify whether desired outcomes are forthcoming at all. In multiple regression terms, the slopes of within-system relationships linking environmental conditions and inputs to outputs and outcomes would be expected to differ as one moved from one system of political or structural conditions to another.⁹ This sort of analysis appears to offer the most promise for further understanding of structure and performance relationships.

Organization and Performance in Local Policing

My own research in the past 12 years has focused on the comparative performance of local police agencies in the United States. My colleagues and I have been particularly interested in how the size of local police jurisdictions was related to the performance of those jurisdictions. We have developed a large base of empirical findings that suggest that organization does, in fact, correlate with performance, and have attempted to specify conceptual linkages that

are consistent with these findings. Our explicit attention has been to the ways that different structures could lead to more or less responsiveness to citizen preferences. Our conceptual explanations turn to the question of how organizational differences can facilitate or limit such responsiveness in various settings. In the following two sections I will first review briefly the empirical findings and then turn to an explanation of those findings in terms of organizational forms.

Empirical Findings

The dominant prescriptive approach with respect to policing in the United States has argued that the fragmentation of American local police departments could lead to ineffective policing. This diagnosis, embodied in the reports of national commissions (e.g., President's Commission on Law Enforcement and Administration of Justice, 1967; National Advisory Commission on Criminal Justice Standards and Goals, 1973) and in the writings of numerous police scholars (e.g., Misner, 1951; Peterson, 1957; Callahan, 1973), has led to prescriptions for wholesale consolidation of small- and medium-sized agencies, with particular attention to those operating in metropolitan areas. Such consolidation, it has been argued, would improve the effectiveness and efficiency of American local policing and, thereby, allow police to be more responsive to the legitimate preferences of citizen consumers. While such prescriptions have been widespread in the United States, a careful review of the results of consolidations which have occurred could find no evidence to suggest that performance gains had been forthcoming (Parks, 1979a).

In fact, the bulk of the empirical evidence that we have amassed would point in a different direction. In a number of studies of police performance in carefully matched service areas, we have found that small- and medium-sized police agencies supply a level of service that is comparable to and often exceeds that of large agencies supplying similar areas, and that such supply is most commonly attained at lower costs.

Our first efforts compared police service delivery in three small towns immediately adjacent to the city of Indianapolis to the service supplied in adjoining areas served by the large Indianapolis Police Department. On a series of performance measures, including the extent of criminal victimization, the level of assistance supplied in crime and noncrime matters, the rapidity of police response when called, and citizens' perceptions of police honesty, courtesy, and fairness of citizen treatment, we found the town police to be supplying better service. The costs of service supply were approximately equal in the service areas of Indianapolis and the smaller towns (see Ostrom, et al., 1973).

These findings were extended by studies in the Chicago, St. Louis, and Grand Rapids, Michigan, metropolitan areas. In the Chicago study, small departments serving predominantly black areas were found to supply services at a level that equaled or exceeded the service supplied to similar areas by the large Chicago department. The costs of service in the towns were much less than the costs of service in Chicago (Ostrom and Whitaker, 1974). In the Grand Rapids study, service levels were higher in the jurisdictions of smaller agencies, and the costs were considerably lower (IsHak, 1972). The St. Louis

study compared service delivery in several strata of carefully matched areas, including poor, black areas, lower income black, mixed, and white areas, and middle-income white areas. The results were consistent with earlier findings, showing a distinct performance advantage for the small- and medium-sized agencies across each socioeconomic strata. There was an indication that medium-sized agencies outperformed the very small, but both small- and medium-sized agencies supplied higher service levels at equivalent or lower costs than did the very large (Ostrom, 1976).

A study of police organization in 85 metropolitan areas provided some further insight. In this research we found very significant differences in the utilization of resources by police departments, differences which correlated well with variations in department size. (Ostrom, Parks, and Whitaker, 1978). Specifically, we found that the ratio of personnel employed to personnel deployed for duty on the street was a monotonically increasing function of agency size. In the small municipal police agencies, a ratio of 4 to 6 officers employed for every officer on the street at a given time was typical. In the very large agencies this ratio often reached a level of 8 to 11 officers employed for every officer actually on the street. The larger police agencies were found to devote a much higher proportion of their officer complement to specialized tasks, often at departmental headquarters than did the small- and medium-sized agencies. In a service context where the majority of police work valued highly by citizens took place on the street, this finding suggested an explanation for the performance differences found in the preceeding studies.

Conceptual Explanation of Empirical Findings

Any bureaucratic organization is subject to both external and internal pressures with respect to its structural form, resource utilization, and level of performance. In policing one can identify four distinct sources of pressure. The first is the local citizenry. Citizens put pressure on local police directly by initiating the majority of claims for police activity. Various studies have documented that 70 to 80 percent of police actions are taken in direct response to a citizen's service request (Reiss, 1971; Webster, 1973).

The second source of pressure on local police comes from local elected officials. In part transmitting the preferences of local citizens and in part articulating their own, local officials can influence police decisions through budget and oversight procedures. Citizens put pressure on local police indirectly by lobbying local officials, both elected and appointed, articulating preferences for police presence and style somewhat independent of immediate service needs.

A third important source of pressure on police agencies arises internally. Policing is quite labor intensive, with 80 to 90 percent of police resources directed to personnel. It is reasonable to argue that the preferences of current police employees can have considerable direct influence on the organization and resource utilization of local police agencies. There is also evidence which suggests that local bureaucratic employees can achieve indirect influence through bloc voting given a high level of turnout in local elections (Borcherding, Bush, and Spann, 1977).

The fourth pressure source is external to local police agencies, but lies within the police profession itself. Police, like other groups who have or aspire to professional status, may respond to standards posed by peers within the profession. Status within the profession, particularly for top administrators, may come more from conformance with standards of good organization and practice than from actual agency performance. Akin to the phenomenon noted with respect to hospitals (e.g., Lee, 1972), police agencies may adopt particular structures and resource utilizations to improve their image among peers.

In sum, police organization and resource utilization, with their implications for police performance, can be argued to emerge from a process of balancing the relevant pressures. The primary question for an institutional analyst, then, is how the balance might be struck in different structural settings.

To do this requires some investigation of the sorts of preferences that each of the identified groups might hold. As argued above, citizens should be primarily interested in on-street police activities. Most police-citizen contacts take place on the street or in dispersed private locations. A police organization which places a high emphasis on rapid response and on more extended service at the time of individual responses should be in a better position to attend to these preferences. Similarly, a police organization with a large proportion of its personnel deployed for street duty should have a correspondingly large proportion of its personnel more in touch with citizen preferences for actions in specific instances and for patterns of actions more generally.

The preferences of bureau employees may be quite different. One well-documented phenomena with respect to police officers is a desire to "get out of the bag" (e.g., Niederhoffer, 1967). By this is meant a preference for positions that do not require the officer to wear a uniform, but rather enable him to dress in normal street clothes. These positions frequently enable officers to avoid regular, day-to-day contact with citizens on the street, instead offering the comfort and security of a normal office job with 9 to 5 working hours. Such positions are attained through appointment to a specialized position or rank. Top police officials find themselves frequently in the position that material benefits such as salary cannot be selectively employed due to civil service rules pertaining to rank and seniority. They may, however, have recourse to the use of specialized appointments as selective rewards.

This tendency on the part of top police officials may be augmented by consideration of personal status and esteem. Police officials, like hospital administrators, derive status from the extent to which their organization conforms to the model viewed as most "professional." Since the dominant professional policing model is one of a large, specialized department, those top administrators who are able to adopt extensive specialization in the use of their personnel resources are likely to receive greater peer recognition.

For purposes of simple argumentation, we can posit elected officials' preferences as basically derivative. They wish to remain in office (cf, Downs, 1957) and so will tend to amplify the preferences of those most likely to enhance their electoral opportunities. This simplification allows focused attention to

crucial questions: what forms of political structure will lend weight to the preferences of citizens and what forms will lend weight to the preferences of internal bureau employees and officials? Which balances are likely to be struck in differing structural settings?

Based upon the empirical evidence and upon observation of the political processes in differently structured jurisdictions, I would argue that the balance is more apt to lie with the citizens in small- and medium-sized political jurisdictions, and with the bureau employees and officials in the larger jurisdictions. In smaller, and particularly in more homogenous jurisdictions, the voice of an individual citizen can be heard more clearly. Such jurisdictions typically have a much lower ratio of citizens to elected officials. Thus, each citizen can more easily command the attention of an elected official to articulate his preference or pursue a grievance. Top police officials, too, are more exposed to the public in smaller jurisdictions. A citizen can often contact the police chief directly via telephone, or even arrange a face-to-face meeting in the chief's office without elaborate preparations. Police organization, itself, is likely to be more obvious to citizens. A 50-officer department that assigns 25 officers to desk duties may find this organizational pattern much more obvious to the public than would a 2,000 officer department which also assigned 50 percent of its officers to desk jobs. Finally, individual officers are more visible to citizens in small and medium agencies. It is reasonable to expect that citizens may observe behaviors and identify them to the individual officer when services are supplied by a set of 10, 20, or even 50 on-street officers. This seems less likely when the on-street force reaches 100

and even less so at 1,000 officers. For these and related reasons, then, citizens are likely to have substantial weight placed upon their preferences for policing in small- and medium-sized jurisdictions.

In larger jurisdictions, the balance would appear to lie with bureau employees and officials. There, citizen access to elected officials and to top police officials will be less. Each elected official will have many more citizens to deal with, thus, reducing the influence of any individual citizen. Top police officials in large departments are typically buffered from the public by an extensive network of complaint operators, secretaries, and subordinates. Making an appointment to meet with the chief of a large American police department is a difficult, time-consuming task, one often beyond the means of most ordinary citizens. Police organization, as noted above, is often more difficult to observe in larger departments. Information such as the number or proportion of the force deployed for on-street duty at any time may be concealed as potentially useful to criminal elements. With the multiplicity of ranks and assignments found in larger agencies, it may not be possible for citizens to identify and question apparent unnecessary positions. Police employees and their families may come to constitute a sufficient bloc that, with high turnout and disciplined voting, they exercise an influence on the selection of elected officials well in excess of their nominal proportion in the population, with obvious implications for the balancing of influences by elected officials. Individual police officers and their actions are much less likely to be identified by citizens in the circumstance of large departments, particularly when a common policy of many such departments calls for frequent reassignment

of officers from area to area. In these circumstances of reduced opportunities for citizens to exert pressures, it is only natural that the preferences of bureau employees and officials for organizational form and resource utilization will weigh more heavily in the balance, perhaps at the expense of reduced levels of service to citizens.

Empirical Support

Our empirical findings that police performance is viewed more favorably by citizens served by small- and medium-sized police agencies are consistent with this argument. In more recent studies we have attempted to explore the processes linking agency size and performance (see, for example, Parks, 1976). Table 1 presents data relevant to my argument with respect to citizen knowledge and influence. These data were collected as part of interviews with more than 12,000 citizens who resided in residential neighborhoods within the jurisdictions of 24 police agencies in the Rochester, St. Louis, and Tampa-St. Petersburg metropolitan areas. For convenience of presentation, the police agency size categories are grouped as small (with 10 to 50 sworn officers), medium (with 51 to 160 sworn officers), large county (350 to 525 sworn officers), and large city departments (450 to more than 2,000 sworn officers).

The data are consistent with the argument regarding greater citizen access and knowledge in the jurisdictions of smaller agencies. Forty-two percent of the citizens served by small departments indicated that they knew someone to contact if they wished "to change the way police services are delivered to your neighborhood." Fewer

than 30 percent said they knew someone to contact in the jurisdictions of the largest agencies studied.¹⁰ Citizens served by the smaller departments were more likely to have called their local police for information in the previous year, another sign of easier access in those jurisdictions. More than twice as many citizens served by the small police agencies stated that they knew one or more police officers who patrolled in their neighborhood "well enough to speak with them when you see them." Similar data have been reported from other studies which explored the extent of citizen access to police agencies (e.g., Ostrom, et al., 1973; Ostrom, 1976). Taken together, they support the explanation that the balance of responsiveness to citizen and to police preferences is weighted in the direction of the citizens in smaller jurisdictions.

In the policing example given here, I argued that there was a tension between input and resource utilization policies preferred by citizens and those likely to be preferred by police officers and administrators. The structure of police organization, measured here by the size of police agencies and their jurisdictions, was shown to affect the relative balance, with citizens appearing more satisfied with the results in small- and medium-sized jurisdictions. Several process mechanisms that could explain this balance were suggested and evidence consistent with the operation of these mechanisms was presented. The argument with respect to police service delivery can be summarized as follows:

- The structure of police service delivery systems should affect the incentives and constraints confronting participants in those systems, including police officers and administrators, elected officials, and citizens.

- In structures characterized by smaller police agencies, the balance of incentives and constraints should be more favorable to the citizen participants due to their greater access in these circumstances. The balance in structures with larger agencies should favor the police participants.
- Consistent evidence shows that: (a) citizen access to decision making with respect to police services is higher in small- and medium-sized jurisdictions, and (b) the consequences of police service delivery are more favorable to citizens in small- and medium-sized jurisdictions.

Table 1

Citizen Access and Knowledge
as a Function of Police Agency Size

Percent of Citizens Who:	Agencies with 10 to 50 Officers	Agencies with 51 to 160 Officers	Large County Agencies	Large City Agencies
Knew a person or organization to contact to change police	42 ^a (2,559) ^b	41 (1,086)	38 (1,439)	29 (3,841)
Called police for information in previous year	18 (3,216)	15 (2,196)	15 (1,754)	11 (4,802)
Know a neighbor- hood policeman well enough to speak to him	40 (3,218)	24 (2,189)	19 (1,746)	18 (4,797)

^aPercent of respondents answering yes (don't know and no response answers not included).

^bNumber of respondents answering either yes or no.

This argument is offered as evidence that structure does affect performance in this important public policy area and, more important, shows in part how structure affects performance.

Implications for Studying the Effects of Structure

I have argued that the study of the effects of structure in political and service delivery systems ought not be pursued as many have done, treating structure as simply an additive ingredient in a policy batter. Rather, structure ought to be conceptualized as something which alters the relationships among other variables. Structure, viewed as a set of rules -- both formal and informal -- that orders behavior within particular systems, supplies a series of incentives and constraints to participants in those systems. Structural effects may, therefore, be untangled by analyzing how particular systems facilitate or hinder the pursuit of preferences by different actors.

Research aimed at the examination of structural effects, then, should begin with a consideration of the interests of the actors involved. What preferences are they likely to hold for observable factors such as input selection and utilization? What are the differences in such preferences that can be postulated for different actors in the systems under study? How might the structure of any given system affect the information available to different actors and the relative bargaining strengths of different groups of actors? What effects on performance should we expect to observe when different balances of preferences result from different structural situations? What internal process differences should be observed across structures?

Having considered these questions and developed expectations or hypotheses regarding them, one is in a position to test the answers

through comparative research across systems that differ in important structural elements.¹¹ This research should focus on performance differences across systems, but also on process differences that would explain performance differences that are found. How, for example, are inputs selected in different structures? What differences in resource utilization are found? Are these differences related to performance differences in the ways specified by prior theorizing? Careful research aimed at providing answers to these and related questions should prove quite useful in answering the important institutional question, "How is structure important?"

Footnotes

¹Godwin and Shepard point out the important distinction between these questions in their article, "Political Processes and Public Expenditures" (1976).

²Prominent among those critiquing the ad hoc nature of expenditure determinants research are Miner (1963), Fisher (1964), Siegel (1966), Hirsch (1968), Melstner and Wildavsky (1970), Dajani (1973), and Scott (1976). As Scott notes, such criticism has become de rigeur (1976: 53).

³A good review of much of this research may be found in Hofferbert (1972).

⁴The quintessential statement of the findings of such research is by Dye, "... political variables do not count for much in shaping public policy" (1966: 297).

⁵Those who have critiqued the ad hoc nature of the work of political scientists in this area include Jacob and Lipsky (1968), Clark (1969), Fry and Winters (1970), Uslaner and Weber (1975), Godwin and Shepard (1976), Swant (1977), and Frey and Pommerehne (1978).

⁶Two other very important assumptions focus on measurement error and upon the intercorrelation of the influences. To compare the importance of two concepts in accounting for variance in a third, each concept must be measured with equivalent accuracy. In a situation where two concepts are, in reality, of equal importance, one more accurately measured will appear more important through the mathematics of the statistical calculation. This assumption applies to concepts, thus requiring accurate operationalization as well as accurate measurement. Hanushek and Kain, for example, fault the Coleman Report (Coleman, et al., 1966) for major operationalization errors with respect to the concept "schools." They argue that the no school effect finding in the Report was partially an artifact of poor operational indicators (1972).

Intercorrelations among measures of two (or more) influences make it impossible to separate their relative importance. This is obvious in a case of perfect correlation among two influences, one could easily be substituted for the other in any statement of importance. It remains true for less than perfect intercorrelation. The fact that computation of presumed "importance" indicators, such as standardized regression coefficients or changes in variance is possible in the absence of perfect correlation should not lead analysts to believe that the practice has substantive meaning. Clear examples of the difficulties in such cases are available in Darlington (1968) or Duncan (1970).

⁷The data bases for these studies are quite different. Fried examines a cross-section of cities while Frey and Pommerehne examine national policy longitudinally. Direct comparison of findings is thus unwarranted for making substantive statements. It is done here to offer an example of the advantage of theory-based analyses in another setting than the American context of most such research. Frey and Pommerehne's analysis would have been even more germane to this discussion had they explicitly considered expenditures changed as different parties were in power, using an interactive rather than an additive model.

⁸Summers and Wolfe's work is useful in that it draws upon data for the influence of school factors as received by individual students. They are able to avoid the (often implicit) assumption that all students in a given school or district receive equivalent school inputs.

⁹Recent methodological statements by several authors have made a similar point. See, for example, Wright (1976), Miller (1977), and Stonecash (1978). Of course, techniques other than multiple regression may also be appropriate for the study of these questions. The important point is to employ techniques which allow relationships to vary across structures.

¹⁰There is an interesting difference in who the citizens would contact across department size. In neighborhoods served by small- and medium-sized departments, citizens were more likely to name an elected official as the person they would contact. In large county and city jurisdictions, the police chief or simply the police department were more likely to be named. A significant minority of respondents in the large city jurisdictions named neighborhood organizations or civic groups as their probable contact.

¹¹In order to reduce the potentially confounding influences of other environmental variables, one might begin such comparative research using a "most similar systems" research design, with service areas carefully matched on environmental variables. However, as Przeworski and Teune argue (1970), such a design does not offer a strong test for structural effects. More elaborate designs, combining sets of similar systems with significant differences in environmental variables across these sets, can help to avoid some of the weaknesses of the simpler design (Ostrom, Parks, and Smith, 1973).

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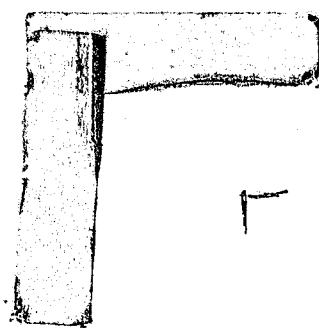
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