

SOME PROBLEMS IN THE STUDY OF ORGANIZATION STRUCTURE

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Late in the 1950s an important transition occurred in sociological research on organizations. Prior to that time, studies had been predominantly of two types. First, many studies were conducted in which organizations were treated as contexts affecting individual behavior. Structural variables, such as centralization, type of control system, and use of assembly line technology, were analyzed as independent variables affecting a variety of individual behaviors and conditions, including satisfaction, productivity, and decisionmaking (cf. Katz and Kahn, 1952; Walker and Guest, 1952; Worthy, 1950). Second, a smaller number of studies focused on the interrelation of structural characteristics within a single organization or on the impact of environmental factors on these structural features. Studies by Blau (1955), Clark (1956; 1960), Gouldner (1954), and Selznick (1949) exemplify this type of case study in which structural features were treated as dependent variables—as features to be explained. Although studies of this type succeeded in focusing attention on the problem of explaining differences in the structural characteristics of organizations, they could do little more than this given the availability of data on only the single case. A single case may suggest interesting hypotheses concerning the determinants of structural features; but it can hardly support the testing of such propositions, as Blau and I noted early in the period under review (Blau and Scott, 1962:10-13).

The transition occurred as the interest in explaining organization structure became coupled with an effort to collect data on multiple organizations. Organizations, not their individual participants, were treated as the units of analysis, and the organizations surveyed were regarded as independent of one

another permitting the testing of hypotheses concerning the determinants of their structural characteristics. Among the earliest research collecting systematic data on samples of organizations were the studies by Woodward (1958; 1965) and Udy (1958; 1959a; 1959b). In my view, Udy's work was the more influential, largely because Woodward's research, published as a monograph in England, did not become widely known until much later.

Udy's work was also important in linking the new comparative methodology with Weber's (1947) classic model of bureaucratic structure. Rather than treating Weber's work as a rigid definition of the structural attributes distinguishing bureaucratic from other (e.g., patrimonial) forms of organization, Udy viewed the model as identifying a complex set of structural variables and elected to evaluate their empirical interrelation. More so than other theorists, Weber attempted to focus attention on the structural characteristics of organizations. Udy's approach built on this theoretical foundation by empirically assessing the degree of interrelation among the structural characteristics of a sample of organizations and examining the conditions affecting these relations.

Udy's research made use of preexisting data on production organizations in nonindustrialized societies available from the Human Relations Area Files. Woodward collected her data, relating type of technology employed to characteristics of structure, from 100 manufacturing firms in South Essex, England. Since their pioneering studies, many comparative analyses of organizational structure have been carried out. The most influential of these have perhaps been the study by Pugh and associates (1968, 1969) of organization structure as related to social context based on data from 46 manufacturing and service firms in the area of Birmingham, England; and the study by Blau and Schoenherr (1971) of 53 state employment security agencies including their division headquarters and local branch offices.

After nearly two decades of comparative organizations research, it is clear that we know more than we did at the outset concerning the interrelations of structural characteristics and their determinants (cf. Blau, 1970; Hall, 1972; Scott, 1975). On the other hand, the number of studies conducted has increased much

more rapidly than our knowledge of organization structure. Many findings appear to be contradictory; others seem unrelated. Consistent findings have not accumulated as rapidly nor theoretical systems been tested and improved as readily as had been hoped. Progress in this area appears to have been hampered by several problems. I want to describe some of these problems in this paper because many of them appear to be correctable, if recognized. Both methodological and theoretical difficulties will be considered.

SOME METHODOLOGICAL PROBLEMS

Validity Problems

Data employed in comparative research are usually one of three types: documents and records, informant reports, and individual responses to surveys. There are, of course, limitations associated with any particular source of data, but organizational researchers have not been sensitive enough to such issues.

Documents and records can seldom be taken for what they purport to be. They are not neutral and objective accounts of organizational purposes and activities but reflect the biases and interests of those who compile and use them. To take at face value reports of such complex and sensitive matters as costs, productivity, or hiring priorities is naive. Moreover, systematic biases affect the data collected by organizations on such important matters as organizational effectiveness, where structural and process indicators reflecting capacity and effort are likely to be reported in lieu of outcome indicators measuring effects achieved (cf. Scott, forthcoming).

The use of informants—usually organizational officials—to describe the structural features of organizations has become widespread. Interviewing a small number of informants in each organization is clearly an efficient data-gathering technique and can be justified for many types of information. That such sources are also biased and limited with respect to a large range of potentially useful data should come as no surprise to sociologists.

We would expect informants to be able to more accurately assess the size of their departments than their power relative to other organizational units.

Surveys of individual participants are less widely employed in comparative studies because of their high cost when many organizations are involved. Using techniques codified by Lazarsfeld and Menzel (1961), data gathered from individual participants can be aggregated to assess organizational features. However, the rules governing such procedures are not well developed. An obviously important matter on which there is little agreement or consistency among researchers concerns how individual responses are to be weighted: is each respondent to be accorded equal weight or are allowances to be made for differences in organizational location, which will affect access to information and power? A thoughtful approach to these issues is represented by Hage and Aiken's (1969:367-68) procedures for collecting and combining data from surveys of participants in 16 health and welfare organizations. They first stratified participants by organizational level and department, and then varied their sampling ratio by position and by size of department. To aggregate the data by organization, responses were first summarized by position and then position means averaged to arrive at a grand mean. Hage and Aiken (1969:368) comment:

In effect, responses are standardized by organizational location—level and occupation—and then combined into the organizational score. Computation of means of social position also has the major theoretical advantage of focusing on the sociological perspective of organizational reality. An organization is perceived as a collection of social positions rather than an aggregate of individuals.

Unfortunately, other researchers have not been so careful or explicit about the procedures followed in combining survey data from individual participants to describe organizational features. For example, Hall, Haas and Johnson (1967) provide virtually no

information on how respondents were selected or data combined from participants in the 75 organizations surveyed for their study of size and formalization.

Another reason to question the validity of much of the current data in this research area is pointed up by Pennings' (1973) methodological exercise involving 10 organizations in which multiple sources of data were employed to measure the same structural variables. Measures of variables such as centralization based on the judgment of officials acting as informants were compared with measures of the same variables based on aggregated survey data from rank and file participants. Intercorrelations of these different types of indicators of the same variables proved to be very low and even, in some cases, negative, indicating the low convergent validity of the indicators employed.

More generally, comparative organizational studies, like most sociological research, has relied heavily on reports concerning behavior and statements of beliefs about behavior as opposed to observations of behavior. Interviews, questionnaires, and archival sources tap perceptions of behavior and prescriptions for behavior as much or more than they elicit objective descriptions of behavior. Not only are such techniques for assessing behavior indirect. They are also reactive in the sense that they influence that which they purport to measure (Webb et al., 1966).

For all of these and related reasons, more attention needs to be devoted to improving the validity of the measures employed in studying structural variables. More thought needs to be devoted to the relative advantages of using archives, informants, or surveys of members for gathering data. As comparative studies grow in popularity, it is essential that we move toward the development of better guidelines for determining what types of information can most appropriately be gathered from the various sources. We also need to recognize the limitations inherent in any single type of measure and utilize multiple methods and indicators in assessing key variables.

Shifting Levels

A serious and continuing problem plaguing organizational research is lack of clarity concerning the organizational level to which a measure applies. Data gathered at one level are often used to test arguments at another. Thus, Rushing's (1967) influential studies of the relation between the division of labor and administrative intensity employs data collected at an industry level to test an argument more clearly applicable to an organizational level. Similarly, arguments relating characteristics of the technology to other structural features often flounder on shifts in organizational level. Characteristics of technology assessed at one level may not be directly reflected at another. Thus it is possible for individual workers to be performing complex tasks within the framework of a quite simple administrative structure, for example, physicians working in a neighborhood clinic. Conversely, individual workers may carry out a few simple tasks as part of a technology that is highly complex when assessed at the departmental level, as is the case for workers on an assembly line (Mohr, 1971). Hage and Aiken (1969) appear to have jumped two levels in measuring the technology employed in health and welfare agencies. They combined the carefully weighted reports of individual workers and supervisors concerning the routineness of their work across departments to arrive at a single measure for each agency.

Intelligent analysis would seem to require that we clearly identify the level at which the analysis is to be conducted and be certain that the measures employed are appropriate to the level selected. Data gathered at one level can sometimes be aggregated or disaggregated to characterize another, but care and judgment should accompany such shifts (cf. Hannan, 1971).

Larger Issues of Design

Three more general methodological issues confronting comparative research on organizations can be raised. First, as already noted, comparative studies focused on the interrelation of organizational features make the assumption that the units of the analysis—the organizations—are independent of each other. This assumption seems highly questionable for many of the studies

conducted. One important exception is the early research by Udy (1959b:4) who carefully limited his sample of production organizations in nonindustrial societies to one such organization per society "under the assumption—not entirely realistic, to be sure—that production organizations in different societies constitute independent entities, while those in the same society do not." This perhaps overzealous approach has certainly not been emulated by succeeding researchers. Thus, Woodward's (1965) sample of firms were all drawn from the same region of South Essex within England; and the organizations studied by the Aston group (Pugh et. al.:1968) were all located in the Birmingham area. Theoretical frameworks proposed by Thompson (1967) for the examination of organizational domains and by Evan (1966) for the analysis of organizational sets suggest that organizations located in the same region are likely to be interdependent in important respects. These speculations receive empirical support from community research which focuses attention on the interorganizational linkages among organizations within the same geographic area (cf. Warren, 1967; Turk, 1970). Hage and Aiken's study of 16 health and welfare agencies most clearly confronts the design issue being raised. All of these agencies were located in the same "large midwest metropolis." In some analyses (Hage and Aiken, 1969), the organizations are treated as independent units, as the interrelation of structural variables within each unit are examined. In other analyses, however, (Aiken and Hage, 1968) the organizations are treated as participants in a community-wide system, their degree of interdependence is examined and its effects on the structural characteristics of the agencies assessed. Perhaps it is possible to have it both ways. Organizations may be independent in some respects and interdependent in others. However, these contrasting assumptions need to be explicitly raised and discussed so that their implications can be taken into account.

If organizations in the same geographic region are likely to be interdependent rather than independent units at least in some respects, the presumption of independence would seem to be even more tenuous for organizations which are part of the same administrative system. Yet the influential study by Blau and

Schoenherr (1971) of 53 employment security agencies focuses on a set of units which although operating as creatures of the government of each state in this country must also conform to federal laws and submit to the supervision of federal agencies who assess compliance with federal standards (p. 34). Although Blau and Schoenherr are careful to assess the impact of the administrative context of the state agency on the structural characteristics of the major functional divisions and the local offices, the basic state units are treated as independent units in their examination of the interrelation of structural characteristics. To the extent that the organizations under study are involved in larger interdependent systems or are component units in a larger administrative framework, then the assumption of their independence is at best tenuous, and operations (e.g., statistical tests) based on this assumption may be misleading.

A second type of general design issue is raised by those studies that attempt to assess the relative impact of various contextual features on structural characteristics of organizations. The general types of contextual variables employed include measures of organizational size, of technology, and of the social and cultural settings. Early in the presentation of findings on the employment security agencies, Blau and Schoenherr (1971:57) conclude: "Size is the most important condition affecting the structure of organizations." This sweeping generalization is difficult to accept, particularly in the context of a study which, by focusing on a single type of organization, allowed virtually no variation in technology. Similarly, the paucity of cross-cultural studies of organizations has the effect of severely limiting the variance in the social and cultural context of organizations, so that the importance of these variables has probably been underestimated in most studies of organizations. In summary, it is not appropriate to make comparative assertions as to the relative power of classes of variables under circumstances in which certain of them are arbitrarily restricted in variation or excluded from consideration.

Finally, virtually all of our knowledge of the relations among the structural characteristics of organizations is based on cross-sectional analyses, and we are just beginning to become aware of their limitations. Relations among structural variables may differ for various periods in the life of the organization (cf. Greiner, 1972) and, specifically, may differ in periods of growth and decline (cf. Holdaway and Blowers, 1971; Freeman and Hannan, 1975). To the extent that structural relations are influenced by developmental processes within organizations, cross-sectional results, which combine data from organizations at differing periods in their life cycle, will produce confusing results. Longitudinal studies utilizing panel and time-series data or cross-sectional studies which take into account developmental phases are required to deal with this problem.

SOME THEORETICAL PROBLEMS

Several serious theoretical problems also restrict our efforts to develop more rich and reliable knowledge of structural relations within organizations.

Conflicting Conceptions

We continue to be handicapped by the number and variety of competing conceptual schemes for analyzing organizations: a well developed and widely accepted theoretical paradigm does not yet exist. In consequence, researchers are confronted by a plethora of "important" structural dimensions and a seemingly endless list of concepts for identifying "critical" variables. For example, a recent review of the theoretical and empirical variables which have been developed to assess organizational technology identified 21 distinct variables (Scott, 1975), and this review was not intended to be exhaustive of variables proposed or in use. Similar somewhat misplaced creativity has been showered upon all of the other major dimensions—centralization, differentiation, formalization, hierarchy—with the result that it is virtually impossible to compare the findings of any two studies because of differences in definitions and operationalization of key concepts. While it would be both futile and inappropriate to propose a moratorium on new

variables, it would be highly useful if organization researchers could agree upon a core set of measures to be included in all major studies in addition to whatever concepts or indicators were desired by the particular investigator.

Implicit Explanations

Our theories are also deficient in their failure to be more explicit about the basis for expecting organizational features to be interrelated. Some theorists such as Thompson (1967) and Perrow (1970) embrace a rationalist perspective in which predictions are made under the assumption that organizational managers design structural features "under norms of rationality." Others utilize an ecological perspective in which it is argued that certain combinations of organizational features are more conducive to system survival: these combinations persist while others are eliminated (cf. Aldrich and Pfeffer, 1976). While both of these approaches may be criticized, they at least make reasonably explicit the mechanisms by which structural regularities are presumed to occur. Most researchers unfortunately seek empirical interrelations among structural features without addressing the question of why such patterns would be expected. However, recent theoretical developments growing out of systems theory may force all of us to pay more heed to this question.

How Interrelated are Organizational Structures?

Systems theory has attempted to identify a broad range of systems varying from those which are simple, rigid, determinant and tightly connected at one end of the continuum to those which are complex, dynamic, indeterminant and loosely articulated at the other end. Boulding (1956) has identified nine levels of systems along this continuum and has commented that although social systems such as organizations exist far out toward the complex and indeterminant end, most of our conceptual models are at the simple and tight end, utilizing models of "frameworks" or "clockworks." In recent years, organizational theorists have begun to explore organizations as "loosely coupled systems" (cf. Weick, 1976). Such an approach challenges the assumption of more closed and rigid models of structure that we should expect

to observe relatively fixed and deterministic associations among the variables which comprise organizational structure. Perhaps the technologies employed by organizations, for example, do not place very severe constraints on the structuring of organizations; rather, a wide range of structural characteristics may be compatible with these technologies.

This would appear to be a most unsettling—and hence, refreshing—vision of organizational structure since it challenges the assumption underlying all of this work that structural features will be likely to exhibit high levels of intercorrelation or other evidence of patterning. This serves to underline the profound role that theory plays in our approach to the empirical world. Our theories not only tell us what relationships to look for; they also tell us whether or not we should expect to observe any relationships at all. In the case of organizational structure, should we or should we not expect to observe strong interrelations among structural variables? Or, more usefully, under what conditions should we expect to observe stronger or weaker associations?

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MEAD AND THE INEFFABLE*

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*Recent phenomenologically influenced sociology addresses, in part, the role of language in human activity and calls into question the capacity of language to fully objectify social processes. In this retrospective light the relation of language and experience presented in George Herbert Mead's *Mind, Self and Society* becomes increasingly problematic. In addition Mead's reference to meaning as an objective phenomenon and his conception of the "generalized other" bear re-examination.*

This paper has a rather limited and circumscribed goal—to render explicit Mead's treatment of language and meaning in *Mind, Self and Society* and to briefly discuss some of the difficulties inherent in this aspect of his work. Of particular concern is the possibility that Mead may have understressed the pre-categorical dimension¹ of human behavior and, consequently, despite some reference to unconsciously generated actions of human beings, placed a perhaps excessive emphasis upon rational and conscious activity.

This discussion, however, does not take place in a vacuum apart from recent sociological concerns. Currently, for instance, ethnomethodology has explicitly focused on the taken-for-granted "background expectancies" or "interpretive procedures" which underlie and make possible a sense of social order. Central to this perspective is the idea that the fit between social norms ("surface rules") and situational action is "managed" through tacit reliance on interpretive procedures ("basic" or "deep structure" rules). As a consequence the relationship of widely shared norms and values

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