DETERMINANTS OF ORGANIZATIONAL STRUCTURE:
AN EXAMINATION OF NON-TRADITIONAL PERSPECTIVES

Hani Handoko[*]

Abstrak

Paradigma fungsionalis telah lama mondominasi penelitian dalam bidang struktur organisasi. Jawaban yang diberikan oleh paradigma ini terhadap pertanyaan "apa yang menjadi faktor penentu struktur organisasional" adalah lingkungan. teknologi dan besaran organisasi. Artikel ini mempunyai dua tujuan: (1) untuk mongupas aplikasi empat paradigma yang berbeda dalam penelitian struktur organisasi dan (2) untuk membahas tiga perspektif alternatif (strategic choice, social action theory, dan sociology of organizational structure) terhadap paradigma tradisional. Dengan menerapkan tipologi paradigma Burrell dan Morgan (1979), tinjauan dipusatkan pada identifikasi berbagai faktcr pensntu struktur organisasional alternatif.

What are the determinants of organizational structure? The traditional answers most often given in the literature are size (Biau, 1970; Child & Mansfield, 1972; Meyer, 1972), technology (Grimes & Klein, 1973; Perrow, 1967; Woodward, 1965), and environment (Lawrence & Lorchi 1967). In general, the effects of these contextual variables on structure have been found, but the research evidence is far from conclusive (Fry, 1982; Kimberly, 1976). For example, there is a controversy over the relative importance of size and technology as determinants of organizational structure. Although some studies have found technology as a variable of importance, preceding size as a determinant of structure ~ (Aldrich, 1972; Marsh & Mannari, 1981), some have found size to be a more significant correlate (Blau et al., 1976; Child & Mansfield, 1972; Hickson et al., 1969).The explanations offered most frequently for these inconclusive results are those related to methodology (Ford & Slocum, 1977; Fry, 1982; Kimberly, 1976). This paper addresses a more fundamental

---

[*] Dr. Hani Handoko, M.B.A. adalah staf pengajar Fakultas Ekonomi Universitas Gadjah Mada.

issue of meta-theoretical underpinnings which surround the research activities investigating the phenomena.

In this paper, the framework used for examining this issue is Burrell and Morgan (1979)'s fourfold typology of paradigms, which is defined by an objective-subjective dimension and the order-conflict views of society conceived as a dimension of regulation-radical change. This typology posits four paradigms in social theory which in turn locate four paradigms in the field of organizational analysis. They are the functionalist (objective-regulation), the interpretive (subjective-regulation), the radical humanist (subjective-radical change) and the radical structuralist (objective-radical change). According to Burrell an Morgan (1979), each paradigm is based on a mutually exclusive set of meta-theoretical assumptions about ontology, epistemology, methodology and nature. This paper begins with an attempt to show the application of these four different perspectives in the examination of organizational structure.

The dominant perspective in organizational theory is the functionalist paradigm (Burrell & Morgan, 1979; Morgan, 1980). In the literature of organizational structure, the popularity of the structural contingency theory is an accurate representation of functionalist hegemony. However, numerous organizational theorists recently have raised conceptual-theoretical and methodological criticisms regarding this perspective (Benson, 1977; Burrell & Morgan, 1979; Child, 1972; Perrow, 1986; Sil-verman, 1970; Zey-Ferrell, 1981). Some important criticisms are included in this paper. The discussion focuses on those relevant to the analysis of the determinants of organizational structure. Three alternative perspectives that have been proposed in the literature are then examined: strategic choice thesis, social action theory, and sociology of organizational structure. The review emphasizes the distinctions among these perspectives in certain meta-iheoretical assumptions underpinning the research process. Using Burrell & Morgan's (1979) schema, this paper seeks to show that'these distinctions reflect differing degrees of subjectivity or change assumptions. Finally, implications for future research are discussed.

Approaches to the Study of Organizational Structure and Criticisms of the Dominant Perspective

Following Burrell and Morgan (1979) and Morgan (1980), it is suggested here that there are many legitimate approaches by which the researcher can proceed to study organizational structure. The structure can be treated, defined and studied in different ways, according to the researcher's meta-theoretical assumptions that brought to bear upon the subject of inquiry. These assumptions, though often taken for granted, are presupposed here to underpin all research activities.

The following discussion seeks to briefly describe how the four paradigms identified by Burrell and Morgan (1979) define fundamentally different perspectives for the analysis of organizational structure. The functionalist, interpretive, radical humanist and radical structuralist paradigms offer different views of an organization's structure and different framework for investigating the phenomenon. They differ in their emphases on the kind of research questions asked and mode of investigation adopted (Morgan et al., 1983).

The functionalist paradigm dominates the research traditions in the subfield of organizational structure. Building from the assumptions that organizations exist as objective and concrete empirical entities, this perspective sees an organization's structure as a system of observable regularities characterized by interdependence and multiple causality (Pugh, 1983). In the functionalist paradigm, research has been oriented toward producing explanations and generalizations about the nature of organizational structure based on systematic comparison and replicable observation and measurement. Emphasis is placed on conceptualizing and measuring organizational structures and the context in which they are set, and the relationship between them through approaches drew from the natural sciences. In essence, this perspective aims at providing "the knowledge of the way organizations structured" (Pugh, 1983:46). It seeks to discover and analyze the functions organizational structures perform and the way they can be manipulated and controlled for the purpose of maintaining social order.

The interpretive paradigm views an organization's structure as socially constructed and socially maintained phenomenon through the subjective experiences of its members. It sees the organizational structure as an emergent social process that

only exists within the realm of individual consciousness and subjectivity. The existence of the structure outside the individual consciousness is conceived as "being little more than a network of assumptions and intersubjectively shared meanings" (Burrell & Morgan, 1979:31). The interpretive research aims to unravel and understand how the structure takes shape and changes over time as an ongoing process. It is concerned more with questions relating to the structuring procoss of organizational structure rather than with the structure It self. In short, the interpretive paradigm seeks to understand the vory basic and source ol an organization's structure from the point of view of the actor, as opposed to the observer, and how individuals make sense of their structures. While this paradigm challenges the validity of the ontological assumptions that underlie the functionalist paradigm, these two perspectives are directed at fundamentally similar ends. The interpretive research aims to discover, analyze, and interpret the role of organizational structures in the construction and maintenance of social order.

In contrast, the radical humanist and the radical structuralist are concerned with questions relating to how organizational structures are utilized as instruments of economic and political oppression. The aim of radical-change theorist is to elucidate alternatives for structural change capable of liberating organizational members from the limitations of existing structural arrangements. This is done through a commitment to an analysis of ideology, technology and praxis (Steffy & Grimes, 1986) as means of transforming existing conditions.

The two paradigms differ in their assumptions about the nature of an organization's structure (Burrell & Morgan, 1979; Morgan, 1980). Radical humanists view organizational structures as socially created and socially sustained which have oppressive and alienating properties. From this point of view, the oppressive structure is reified through organizational ideology, control and power, and enacted social domination. Adopting a critical interpretive stance, this paradigm seeks to probe for deep structures thatbeyond individual awareness (Deetz & Kersten, 1983).

The radical structuralist paradigm adopts a materialistic view oforganizational structure. It focuses on how concrete structures form the basis of organizational control. Organizational structures are seen tc emanate from broader social, economic
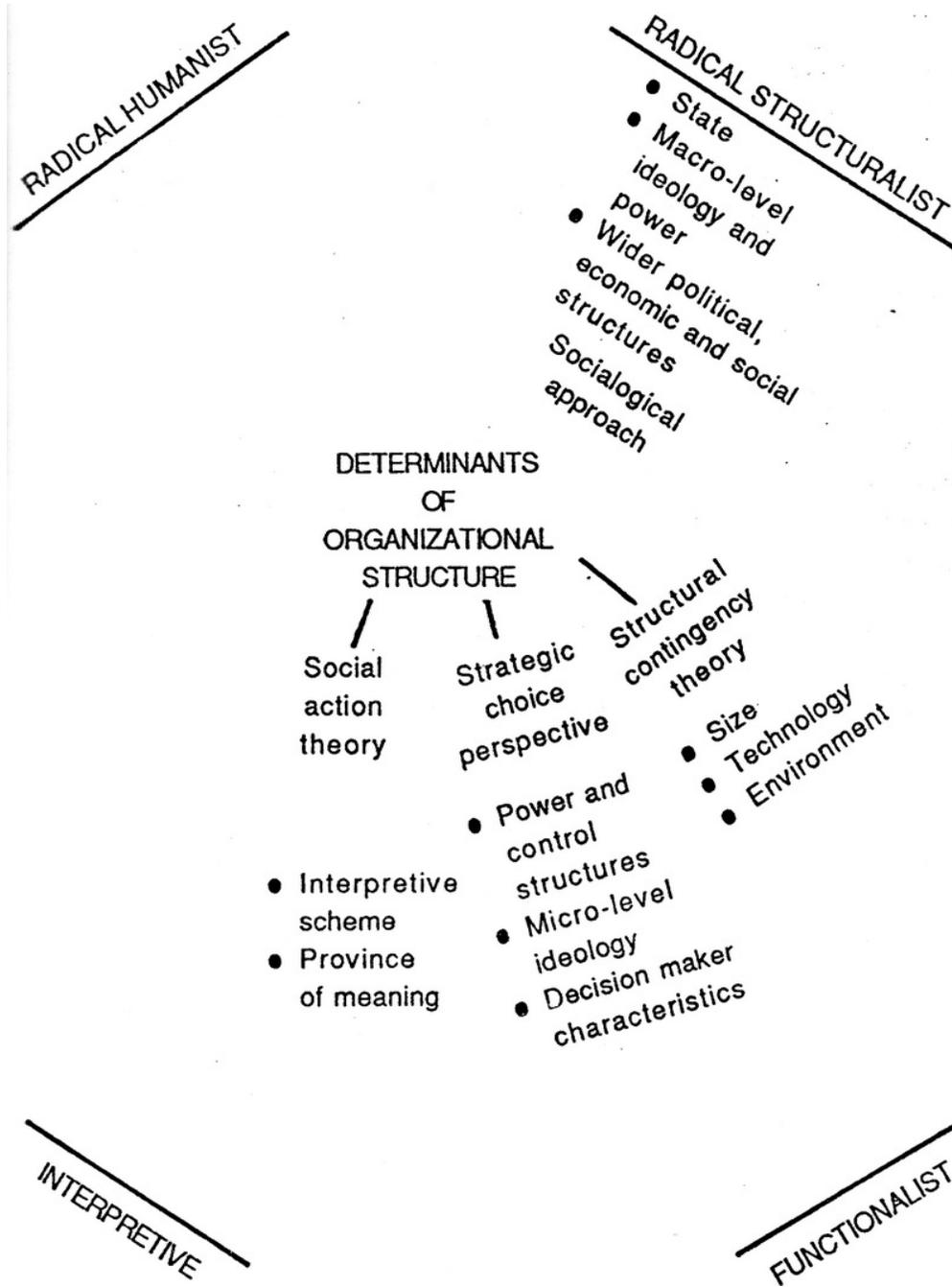
and political conditions. The focus is on structural conflict, contradiction, deprivation, fragmentation and disorder among social classes (Burrell & Morgan, 1979).

It is suggested here that research from each of these paradigms is likely to lead into the search for different determinants of organizational structures. Drawing upon the research sampled here. Figure 1 provides an illustration of the implications of differing meta-theoretical assumptions on the examination of the determinants of organizational structure. As Figure 1 indicates, there are many areas that have not been well examined. It is the purpose of this paper to take a first step to encourage further works in those unexplored paradigms. The dominance of the functionalist paradigm has for too long de-emphasized the contribution that each of the non-functionalist paradigms can make to our understanding of the phenomenon. The following review of studies generated by the strategic choice, social action, and sociological perspectives is intended to show the potentiality of alternative perspectives of contributing to our limited understanding of structural formation in organizations. But we first discuss the important criticisms of the dominant research tradition of structural contingency theory.

Structural Contingency theory: Conceptual-Theoretical and Methodological Issues

The structural contingency theory has been widely accepted in the literature of organizational structure. The model, however, is problematic for a number of reason and has been criticized from both inside and outside this paradigm. The purpose of this section is to summarize some important criticisms relevant to an understanding of the development of non-traditional approaches to the study of organizational structure.

Two different types of criticisms have been made of this dominant perspective. The first of type criticisms relates to the conceptual-the oretical issue, and the second, to the methods of study adopted to investigate the phenomena. The conceptual-theoretical criticisms originate not only from inside the paradigm but also from those-who have used alternative perspectives.

RADICAL HUMANIST

RADICAL STRUCTURALIST

- State
- Macro-level
  ideology and
  power
- Wider political,
  economic and social
  structures
  Socialogical
  approach

DETERMINANTS
OF
ORGANIZATIONAL
STRUCTURE

Social
action
theory

Strategic
choice
perspective

Structural
contingency
theory

- Size
- Technology
- Environment

- Power and
  control
  structures

- Interpretive
  scheme
- Province
  of meaning

- Micro-level
  ideology
- Decision maker
  characteristics

INTERPRETIVE

FUNCTIONALIST

The first conceptual criticism concerns with the lack of clarity of most structural contingency studies (Schoonhoven, 1981). Mrela (1979) has observed that the ontological status of the relationship between the contextual variables and the organizational structure is usually not clearly established. More specifically, the statements about contextual conditioning of the structure are highly imprecise and often can be interpreted in many different ways. It is not clear whether we observe the

relationship between the context and the structure as total social entities, from which their individual elements or dimensions are respectably isolated, or between their individual features or pairs of features. Moreover, "the lack of clarity by contingency theories blurs the fact that an empirical interaction is being predicted" (Schoonhoven, 1981:351). This interaction has seldom been recognized and tested. In short, there has been a noticeable lack of clear and consistent theoretical basis for guiding the research activities in the field.

A second set of conceptual criticisms originates from outside the dominant perspective of structural contingency theory (see Zey-Ferrell, 1981 for detail discussion). The first of these accuses structural contingency model of being too deterministic. The model does not consider the strategic choices of the dominant coalition who has been power to direct organizations (Child, 1972). It also fails to account .for the ability of organizations to affect the environment (Perrow, 1986). In addition, a historical analysis, as adopted by Edwards (1984) and Stone (1981), has questioned the thesis that sees technology as the determinant of an organization's structure. They found that the structure of control systems preceded technological changes. The design of technologies was then introduced to further de-skill the labor force and controls the workplace (Zey-Ferrell, 1981).

The second criticism has accused the structural contingency approach for being not concerned with explanations in terms of the social actions and the meaning behind these actions (Silverman, 1970). It fails to address the ability of humans to voluntaristically determine the structure through their actions. This criticism relates to the positivist epistemology of the contingency perspective. A third criticism concerns the proper unit of organizational analysis. The model has been criticized for its neglect of the society within which organizations exist (Benson, 1977;Salaman, 1981). It fails to locate the organization within wider economic, political, and social structures that shape the organizational structure. A fourth criticism relates to the neglect of strategic choice and larger societal structure criticisms. Structural contingency approach does not address many important issues. It does not incorporate an analysis of power, political process, ideology, different values and interests among organizational members, control structure, and social class and social conflict (Benson, 1977; Perrow, 1986; Zey-Ferrell, 1981).

The methodological criticism relates to operationalization and measurement of organizational structure which is based upon highly objectivist assumptions (Burrell & Morgan, 1979). A large proportion of empirical research using the structural contingency model has been bi-variate, linear, static, and cross-sectional in nature (Benson, 1977; Pfef-fer, 1982). The definitional and measurement disagreements, and the levels and units of analysis problems have also plagued most of contingency studies (Fry, 1982; Kimberly, 1976; Pfeffer, 1982). Unfortunately, these methodological problems have dominated other important issues in relation to the ontological, epistemological, and human nature assumptions of our analytical models (Burrell & Morgan, 1979).

Non-Traditional Perspectives

As suggested previously, three non-traditional perspectives examined here are considered to represent relatively well-established movements towards non-functionalist modes of analysis. The strategic choice and social action approaches are examples of the move towards a more subjective stance on the objective-subjective dimension. The sociological perspective has taken a step in the direction of change assumption of the regulation-radical change dimension. The examination of these three approaches is illustrated with a presentation of examples of sampled research studies that have used one of these alternative perspectives. Although critiques have also been launched to these alternative perspectives (Donaldson, 1985), the central purpose of this paper Is not to examine those criticisms.

The Strategic Choice Perspective

Since Child (1972) presented his criticisms to all the structural contingency models for neglecting the importance of strategic choice, this thesis has enjoyed a growing popularity (Bobbitt and Ford, 1980; Scher-yogg, 1980). It sees "the role of strategic choice as necessary element in any adequate theory of organizational structure" (Child, 1972:17). It is argued that focusing on strategic choice permits the decision makers especially powerful ones, to be treated as the critical link between the context and the structure. The structure is considered here as a function of managerial choice (Bobbitt & Ford, 1980).

According to this perspective, the powerful actors in the light of their ideological preferences can exercise their power to shape the interpretations of environmental constraints and opportunities and to create and modify structures. The formation of structure is thus discussed in terms political process, power, ideology, and the dominant coalition. Katz (1989) found support for these arguments in three parallel case studies of the development of new structures as organizations adapt to changes in environmental conditions and internal needs. It is suggested that the structural variation in different organizations was mainly caused by the differing structures of organizational control surrounding new structures. Likewise, Meyer (1982) found support in the observation of nineteen hospitals. He has described how organizational ideologies supplant formal structures and shape responses to environments. The findings indicated that "hospital structures are less formalized and less complex where ideologies are harmonious, but more formalized and more complex where ideologies are discarded" (Meyer, 1982:56). He argued that these ideologies are manifested and sustained by beliefs, stories, languages, and ceremonial acts.

A second line of development which is based on the strategic choice thesis is found in the work of those theorists who have sought to study the impact of the decision maker's psychological and motivational factors on structure. The recent study by Miller and Droge (1986), for example, provides an evidence of the existence of a significant relationship between CEO personality and structure after controlling for the impact of the traditional contingency variables of size, technology and uncertainty. Furthermore, Bobbitt and Ford (1980) have proposed that an organization's structure is determined by an interaction of the decision maker's cognitive and motivational orientations, transformation strategies, and the context. It has also been suggested that "scope of choice" is crucial for understanding the association between environmental conditions and organizational structure (Schreyogg, 1980). In essence, these studies add the elements of the decision maker's characteristics and the decision making process to the traditional determinants of structure. They are illustrative of Reed's (1985) observation regarding this perspective:

the language of 'strategic choice' would seem to suggest a radical theoretical and ideological break with functionaiism, but the implementation of the approach indicated a more modest aim of extending the theoretical scope and empirical range of an established orthodoxy which still had its uses (p. 107).

Social Action Theory

Within organization theory, an explicit move towards a more subjective approach is best presented by the Action position of Siiverman (1970). Burrell and Morgan (1979) view social action theory or the action frame of reference as "a perspective characteristic of the most subjec-tivist boundary of the functionalist paradigm" (p. 189).

This perspective argues that a theoretical framework for the examination of organizational structure must be underpinned by modes of analysis that are adequate on the level of meaning (Siiverman, 1970). It focuses on the way structures are socially constructed, socially sustained and socially changed by organizational members. It emphasizes the subjective, the interpretation, the perceptual, and the meaning. The production and recreation of structural forms are viewed as the outcome of a complex interaction of interpretive schemes. Thus, according to this position, important determinants of an organization's structure are powerful organizational members' interpretive schemes and the expression of these in provinces of meaning (Ranson, Hinings, & Greenwood, 1980).

The action schema emphasizes the way in which individuals have the ability to interpret and attribute meaning to their social world, directing attention to the voluntaristic nature of human activities (Silverman, 1970). The significance of an external world for the study of organizational phenomena lies in "the way in which its 'meaning' resulted from the interpretations placed upon it by individual actors" (Burrell & Morgan, 1979: 199). Little research focusing on organizational structure has been conducted from this perspective. This is likely due to its emphasis on individual actions. However, the following two studies show the utility of the action frame of reference in examining the relationship between interpretive schemes and structural phenomena.

Based on a case study of a religious order, Bartunek (1984) provides a detail illustration on how interpretive schemes occasion for the structuring of an

organization's structure. The organization's structure was found to be in reciprocal relationship with changes in interpretive schemes. However, Bartunek (1984) asserts that this relationship is not direct, but it is mediated by emotional reactions of organizational members to changing understanding of structure and the actions they take in response to these changes.

The work of Gronhaug and Haukedal (1988) demonstrates the effects of different interpretations of environmental opportunities and threats on strategic choices and outcomes. Based on a case study of two shipping companies, they found that the environmental changes were interpreted differently by these companies and their flexibility in changing interpretive schemes and the strategies pursued was also different.

Another line of development that implements the social action perspective to the study of organizational structure is found in the work of those theorists who attempt to overcome the traditional dichotomy between 'voluntaristic' and 'deterministic' theories of organizational structure. They seek to conceptualize the interrelation between social action and contextual constraints (Reed, 1985). This integrationist position is represented in the contributions of Ranson, Hinings, and Greenwood (1980) and Barley (1986).

Ranson, Hinings, and Greenwood (1980) propose a more unified theoretical and methodological analysis of organizational structure that is adequate at the levels of meaning and causality. In essence, they argue for a comprehensive theory of organizational structuring that conceptually integrates phenomenological analysis of the intersubjective construction of rneaning with causal analysis of structural regularities and mechanisms. Based on a series of observations of CT scanners and the social order of radiology departments, Barley (1986) also stresses the need to integrate the study of social action and the study of social form to understand how technologies alter organizational structures. In this study, technologies are treated as social objects capable of triggering dynamics, and structures are conceptualized as processes. Identical CT scanners were found to occasion similar structuring processes in two radiology departments but lead to divergent forms of organization.

The Sociological Approach

The sociological perspective insists upon recognizing the relationship between organizational structures and the society within which they exist (Salaman, 1981). The sociological analysis goes beyond organizational definitions of organizational structure; it is concerned with extra-organizational resources and ideologies upon which the power of dominant coalition who control the organization based. The structure is considered not as a functional consequence, but as a result of the need to resolve problems of control. According to Salaman (1981), whose arguments are developed on the basis of the work of Weber and Marx, such an approach contains the following elements:

> First, a concern to isolate and describe the main features ol organizational structure and the design of work and control and the principles, philosophies, interests and purposes that lie behind them. Secondly, to relate the structure of organizations to the society within which they occur, paying particular attention to the ways in which values prevalent in that society are reflected in organizations, or to the relationship between sectional or class memberships, cultures and interests and organizational structures and processes. Thirdly, to analyze the role of ideas and values, including sociological theories of organizations in buttressing and legitimating (or disguising) the nature, function and origins of organizational structures (pp. 23-24).

This perspective seeks to investigate the connection between larger societal forces and organizational structures. Crozier (1964), for example, has shown how French bureaucratic patterns are tied into the French social structure. An analysis of French society, particularly the labor movement, the political system, the industrial relations, and the educational system, indicates that the key elements of the French bureaucratic structure of organization are manifest in the French' society and each of its segments. Crozier (1964) finds here an association between the macro-societal characteristics and micro-organizational structures.

Meyer and Rowan (1977) further argue not only that organizations are arenas in which wider social, political, and economic forces are played out, but formal organizational structures originate from and arise in the highly institutionalized contexts of society. They see the power of institutional rules which function as myths influencing organizations. It is suggested that these institutionalized myths accounts

in part for the expansion and increased complexity of formal organizational structures.

As discussed previously, the sociological analysis of organizational structure is also concerned with the larger societal ideologies. The focus is on the way in which a dominant ideology is fostered, manipulated, and controlled by those in power, whose interests are served by such ideology. In an examination of the labor process as the site of the historic confrontation between labor and capital, Edwards (1984) asserts that the ideology of efficiency or rationality is promoted in the workplace only within the context of managerial control. He sees the development of technical and bureaucratic control systems as managerial responses to the continuing struggle over control of the workplace. Stone's (1981) analysis of the development of labor market structures in the steel industry during the period 1890-1920 supports Edward's (1984) arguments. She argues that changes that took place during this period represented deliberate strategies of capitalism to destroy the traditional labor system that gave workers autonomy over their work lives. Breaking the unions, the introduction of new technologies, the development of wage incentive schemes, new promotion policies, and welfare programs were found to be strategies of altering the nature of work and the control that workers had over it.

The sociological approach also incorporates an analysis of relationship between organizations and the state. It is particularly concerned with the ways the state apparatus shapes the organizational structure. As Burrell and Morgan phrase it, "the state is regarded as being at the center of an octopus-like structure, whose bureaucratic tentacles stretch out an invade all areas of social activity" (1979: 371). Several studies have shown how significant and pervasive the state bureaucratic intervention on an organization's structure. Based on cross-sectional and longitudinal analysis of the numbers of school districts per state over the period 1938-1980, Strang (1987) found that the structural change in American education was largely caused by the expanding role of state bureaucracies. The basis argument is that the highly bureaucratic nature of school district structures stemmed in large part from the state's increasing penetration into the local educational arena (Strang, 1987). In an examination of the nature of organization-state relationship in Hungary, Carroll, Goodstein and Gyenes (1988) also describe the ways the state shapes the

organizational structure and the behavior of agricultural cooperatives. Drawing upon institutional theory, an analysis of survey data from the managers of cooperatives demonstrates that fragmentation in the structure, of state decision making is associated with more elaborate interorganizational network, greater competition among cooperatives, and smaller administrative components.

Conclusions and Implications for Future Research

This paper attempts to encourage further examination and debate on the determinants of organizational structure question. It is intended to increase curiosity about the reasons for the existence of similarities and differences in the structuration of organizational phenomena, by exploring alternative perspectives for the dominant mode of investigation. A review of the strategic choice, social action, and sociological perspectives, as shown in Figure 1, has indicated that these different views lead to the search for different determinants of an organization's structure. More importantly, this review also suggests that these alternative perspectives are more than just different methods of analysis on the same phenomenon. They reflect the implications of differing degrees of subjectivity or radical change in their meta-theoretical assumptions surrounding the research process. Thus, different paradigmatic locations field different answers to the question of what the determinants of an organization's structure are.

This paper also aims to emphasize Burrell and Morgan's (1979) plea for further development of non-functionalist paradigms. The discussion of three different perspectives examined here have taken a first step to provide the interested researcher with concrete points of departure from the traditional way of studying organizational structure, and to identify some promising directions in which we can pursue. The strategic choice thesis makes an explicit move toward more subjective approach of organizational analysis by recognizing the role of the decision maker(s) in the deter-mination of structure. A further move towards subjectivist stance is best represented by the action frame of reference, which emphasizes the importance of viewing organizational structure as an ongoing process, constructed, sustained and changed by social actors. A third movement towards a non-functionalist perspective is witnessed in the increasing number of research studies which use the sociological approach.

This perspective adds aspects of change to the analysis of an organization's structure by recognizing the relationship between organizational structures and the society within which they exist.

One direction that holds considerable promise for future study of organizational structure is to examine if and how organizational members actively participate in their own consent to structural domination. This research of radical humanist perspective attempts to understand how individual differences occur in the degree of alienation experienced through structural arrangements, and probing how they actively share complicity with their own oppressive structure of domination.

An example of the move towards a radical humanist perspective is found in the work of Burawoy (1984), whose study of a contemporary machine shop in Chicago shows how workers develop the active responses to make the structural features of organization imposed by managers work for them. It is demonstrated that how the game of "making out" permeates workers' shop floor culture and shapes distinctive patterns of conflict between labor and management. Burawoy argues that the work is structured in such a way that generates the expansion of the "self-organization" of workers to make them actively participate in constructing their own modes of domination.

A second step in the direction of a radical humanist perspective has been taken by Grimes and Cornwall (1987). In an examination of the disintegration of a free school, they trace the existence of ideological and structural contradictions that served as continual sources of conflict among the school's various constituencies. It is argued that the ideological contradictions constrained structural and process changes that contributed to the school's disintegration. This study demonstrates the way in which the values and ideology of organizational members influence structures and processes.

As researcher faces the choice of assumptions, ideologies, and methods, it is also important to emphasize here the need of investigating the structure of the scientific community itself (Steffy & Grimes, 1986). This study aims at exposing how the theoretical underpinning and methodological decisions of researchers are influenced by structural features of scientific community such as academic status and hierarchy, determining factors of the researcher's career, allocation of research

resources, and conditions of control over means scientific production (Rosen, 1987; Steffy & Grimes, 1986). It is suggested that these decisions, as reflected in the results of conducting specific research agenda, are in turn affecting the creation and maintenance of structures of organization. Finally, the discussion of methodologies has not received much attention in this paper. Although most debates between proponents of different perspectives center on research methods, the methodological debate is perceived here as secondary to the issue of the ontological and epistemological assumptions guiding the research process of each approach (Steffy & Grimes, 1986). The triangulation of methodologies may in fact be consistent with the basic assumptions of certain perspectives. Mixing quantitative and qualitative methods may provide breadth and depth in examining the complex nature of the formation of organizational structure as generic social process.

REFERENCES

Aldrich, H. E. Technology and organization structure: A reexamination of the findings of the Aston group. Administrative Science Ouarterly, 17: 26-43.

Barley, S. R. (1986) Technology as an occasion for structuring: evidence
from observations of CT scanners and the social order of radiology departments. Administrative Science Ouarterly, 31: 78-108.

Bartunek, J. M. (1984) Changing interpretive schemes and organizational restructuring: The example of a religious order. Administrative Science Ouarterly, 29: 355-372.

Benson, J. K. (1977) Organizations: A dialectical view. Administrative Science Ouarterly, 22: 1-21.

Blau, P. (1970) A formal theory of differentiation in organizations. American Sociological Review, 35: 201-218.

Blau, P. M., Falbe,. C.M., McKinley, W. & Trancy, P.K. (1976) Technology and organization in manufacturing. Administrative Science Quarterly, 21: 20-40.

Bobbitt, Jr., H. R. & Ford, J. D. (1980) Decision-maker as a determinant of organizational structure. Academy of Management Review, 5: 13-23.

Burawoy, M. (1984) Organizing consent on the shop floor: The game of making out. In F. Fisher and C. Sirianni (Eds.), Critical studies in organization & bureaucracy: 231-240, Philadelphia: Temple University Press.

Burrell, G. & Morgan, G. (1979). Sociological paradigms and organizational analysis. London: Heinemann.

Carroll, G. R., Goodstein, J., & Gyenes, A. (1988) Organizations and the state: Effects of the institutional environment on agricultural cooperatives in Hungary. Administrative Science Ouarterly, 33: 233-256.

Child, J. (1972) Organizational structure, environment, performance: The role of strategic choice. Sociology, 6: 1-22.

Child, J. & Mansfield, R. (1972) Technology, size and organization structure. Sociology, 6: 369-393.

Crozier, M. (1964) The bureaucratic, phenomenon. Chicago: University of Chicago Press.

Deetz, S. A. & Kersten, A. (1983) Critical models of interpretive research. In L L. Putnam & M. E. Pacanowsky (Eds.), Communication and organizations: An interpretive approach: 147-171. Beverly Hills: Sage.

Donaldson, L (1985). In defense of organization theory: An reply to the critics. Cambridge University Press.

Edwards, R. C. (1984) Forms of control in the labor process: An historical analysis. In F. Fischer and C. Sirianni (Eds.), Critical studies in organization and bureaucracy: 109-142. Philadelphia: Temple University Press.

Ford, J. D. & -Slocum, J. W., Jr. (1977) Size, technology, environment and the structure of organizations. Academy of Management Review, 2: 561-575.

Fry, L. W. (1982) Technology-structure research: Three critical issues. Academy of Management Journal, 25: 532-552.

Grimes, A. J. & Cornwall, J. R. (1987) The disintegration of an organization: A dialectical analysis. Journal of Management, 13: 69-86.

Grimes, A. J. & Klein, S. M. (1973) The technological imperative: The relative impact of task unit, modal technology, and hierarchy on structure. Academy of Management Journal, 16: 583-597.

Hickson, D. J., Pugh, D. & Pheysey, D. (1969) Operations technology and organization structure: An empirical reappraisal. Administrative Science Ouarterly, 14: 378-398.

Hsu, C. K., Marsh, R. M., & Mannari, H. (1983) An Examinahon of the Determinants of Organizational Structure. American Journal of Sociology, 88: 975-997.

Katz, J. H. (1989) The fact and causes of variation in structural development processes. Journal of Management Studies, 26: 189-208.

Kimberly, J. (1976) Organizational size and the structuralist perspective: A review, critique and proposal. Administrative Science Ouarterly, 21: 571-597.

Lawrence, P. R. & Lorch, J. W. (1967) Differentiation and integration in complex organizations. Administrative Science Ouarterly, 12: 1-47.

Leblebici, H., Marlow, E. K., & Rowland K. M. (1983) Research Note: A Longitudinal Study of the Stability of Interpretative Schemes, Organizational Structure, and Their Contextual Correlates. Organization Studies, 4: 165-184.

Marsh, R. M. & Mannari, H. (1981) Technology and size as determinants of the organizational structure of Japanese factory. Administrative Science Ouarterly, 26: 33-57.

Meyer, A. D. (1982) How ideologies supplant formal structures and shape responses to environments. Journal of Management Studies, 19: 45-61.

Meyer, J. W. & Rowan, B. (1977) Institutionalized organizations: Formal structure as myth and ceremony. American Journal of Sociology, 83: 340-363.

Meyer, M. W. (1972) Size and structure of organizations: A causal analysis. American Sociological Review, 37: 434-440.

Miller, D. & Droge, C. (1986) Psychological and Traditional Determinants of Structure. Administrative Science Ouarterly, 31: 539-560.

Morgan, G. (1980) Paradigms, metaphors and puzzle-solving in organization theory. Administrative Science Ouarterly, 25:..605-622.

Morgan, G., Frost, P.J. & Pondy, LR. (1983) Organizational symbolism. In L.R. Pondy, P.J. Frost, G. Morgan, & T.C. Dandridge (Eds.), Organizational Symbolism: 3-35. Greenwich, Conn.: JAI.

Mrela, K. (1979) Contingency approach and coherence of organizational structures: Methodological issues. The Polish Sociological Bulletin, 1: 53-63.

Perrow, C. (1967) A framework for comparative organizational analysis. American Sociological Review, 32: 194-208.

Perrow, C. (1986) Complex organizations: A critical essay (3rd ed.). New York: Random House.

Pfeffer, J. (1982) Organizations and organization Theory. Boston: Pitman.

Pugh, D. S. (1983) Studying organizational structure and process. In G. Morgan (Ed.), Beyond method: Strategies for social research: 45-56, Beverly Hills: Sage.

Ranson, S., Hinings, B., & Greenwood R. (1980) The Structuring of Organizational Structures. Administrative Science Ouarterly, 25: 1-17.

Reed, M. (1985) Redirections in organizational analysis. London: Tavistock. Rosen, M. (1987) Critical administrative scholarship, praxis, and the academic work place. Journal of Management, 13: 573-586.

Salaman, G. (1978) Towards a Sociology of Organizational Structure. The Sociological Review, 26: 519-554.

Schoonhoven, C. B. (1981) Problems with contingency theory: Testing assumptions hidden within the language of contingency "theory". Administrative Science Ouarterly, 26: 349-377.

Schreyogg, G. (1980) Contingency and choice in organization theory. Organization Studies, 1: 305-326.

Silverman, D. (1970) The theory of organizations. New York: Basic Books.

Steffy, B. D. & Grimes, A. J. (1986) A Critical Theory of organization science. Academy of Management Review, 11: 322-336.

Stone, K. (1981) The origins of job structures in the steel industry. In M. Zey-Ferrell and M. Aiken (Eds.), Complex organizations: Critical Perspectives: 349-381. Glenview, 111.: Scott, Foresman and Company.

Strang, D. (1987) The Administrative Transformation of American Education: School District Consolidation, 1938-1980. Administrative Science Ouarterly, 32: 352-366.

Willmott H. (1981) The Structuring of Organizational Structure: A Note. Administrative Science Ouarterly, 26: 470-474.

Woodward, J. (1965) Industrial organization: Theory and practice. London: Tavistock.

Zey-Ferrell, M. (1981) Criticisms of the Dominant Perspective on Organizations. The Sociological Ouarterly, 22: 181-205.