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Group Performance and Intergroup Relations in Organizations

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For well over half a century groups in organizations have been formally studied, resulting in a literature that is quite diverse. Our concern in this chapter is the task performance of groups in organizations. To address this concern, we organize existing literature in terms of schools of thought. That is, the chapter emphasizes conceptual, theoretical paradigms for understanding causes and correlates of group performance. These schools of thought reflect the following: the works of Bion and Homans, sociotechnical theory, interaction process, group development, composition, goals, contextual influences on performance, and intergroup relations and group performance. The chapter also considers the future. We find that the trend toward greater reliance on groups in organizations will continue; that the disciplines of social and organizational psychology will diverge in their study of groups; that organizationally relevant research and theory will emphasize the impact of the organizational context—for example, the systems and practices by which groups are rewarded, supported, provided resources and the like—rather than, say, the nature of group member interaction as a determinant of group effectiveness; and that a mix of clinical and multivariate causal modeling methods will appear with greater frequency.
Introduction

THE IMPORTANCE OF groups to organizations has long been recognized. In an early comprehensive textbook on psychology and organizations, Viteles (1932) discussed "the problem of the group" (p. 619). Viteles argued that "the individual is always acting under group conditions" (p. 619) and that from this arise problems of supervision and management, such as labor-management conflict. The eye-opening Hawthorne studies (Roethlisberger & Dickson, 1939) called attention to the role of informal work groups in organizations and their potential impact on productivity and attitudes of individual workers. The Hawthorne studies were initially simple studies that grew complex as unanticipated social influences became a target of study. Similarly, early studies of pay and individual motivation changed their character as the influences of fellow group members were seen to shape individual responses to various forms of incentive pay plans (Whyte, 1955).

For the most part these studies emphasized the impact of groups on individuals—that is, how an individual responded to pay, a job assignment, a management request, or some other aspect of work was regarded as influenced by the norms, shared beliefs, and orientations of the group in which the individual was a member. From this perspective, the group is a part of the context in which an individual works, and understanding that group context is essential to understanding individual behavior. The chapter by Hackman in this volume examines, in detail, group influences on individuals.

A different line of research, starting later yet alive and well today, views groups as essential performing units in organizations. Here the group is not context but kernel. The emphasis is on collective performance and the factors that determine it.

An example of research emphasizing the group as the essential performing unit is Janis' (1972, 1982) work on groupthink. Groupthink is a term used to signify a syndrome of ineffective decision making by a group. Elements of this syndrome include limited information search, misperceptions of data, and a false sense of a group's righteousness. Note that while Janis' work recognizes the impact of the group on individuals (e.g., group pressures may prevent individuals from voicing an unpopular point of view), the core concern of Janis' work is the decision making performance of a group as an entity. Janis' work also conveys the importance of groups to organizations. He studied high-level governmental groups whose decisions had consequences for the lives and well-being of entire societies.

Today more than ever, organizations rely on work groups, as evidenced by the appearance of project teams, focus groups, autonomous work groups, quality circles, multifunction work teams, and team CEOs. Indeed, it has been argued that developments in management practices and organization design in the 1970s and 1980s "undermine [individuals] as basic organizational units" (Davis, 1977, p. 241), that teams rather than individuals now dominate industry (Thurrow, 1983), and that the trend of increased prominence of groups will continue far into the future (e.g., Reich, 1983). Leavitt (1975) was among the first to explore the possibilities of groups rather than individuals being truly regarded as the basic building blocks of organizations. Imagine groups being hired, trained, appraised, rewarded, promoted, and fired. Although he thought "groupy" organizations premature in the 1970s, such organizations were seen as consonant with cultural trends that would influence future management practices.

Leavitt's predictions may have come true. As early as 1982 Peters and Waterman (1982) argued that "small groups are, quite simply, the basic organizational building blocks of excellent companies" (p. 126). Many examples exist of organizations now staffing with groups in mind. The hiring process created to staff
the start-up Saturn Corporation, for example, explicitly accounted for the group to which an applicant would belong in making hiring decisions. Other organizations reward team performance. The J. C. Penney Company, for example, has paid bonuses to sales associates based on team rather than individual sales receipts. And recently a considerable amount of attention in the popular press has been given to the heightened emphasis on groups as essential units in overall organizational performance (e.g., Dumaine 1990). Leavitt's (1975) groupy organizations are not yet the prevailing reality of organizational life, but things are moving in that direction.

**Scope and Objectives**

There is no dearth of literature about groups. Thousands of studies exist that investigate more than can be imagined about such topics as membership, norms, development, leadership, roles, attraction, dominance, attitudes, abilities, preferences, and conflict in groups. A challenge in the construction of this chapter is determining what is "in" and "out," essential and ancillary to our understanding of effective task performance by groups. In response to this challenge we will try to make clear the scope and objectives that define our approach.

**Scope.** This chapter draws on a wide range of empirical and theoretical literature relevant to groups in organizational settings. Relevance is a matter of degree, of course, determined by such factors as the setting in which research on groups took place, the type of group studied, and the issues examined. In general, we emphasize research conducted on what McGrath (1984) calls *natural* groups, those that exist independent of a researcher's activities and purposes. These include formal and informal groups in organizations as well as groups found in other settings. Such groups can be short- or long-lived, broad or narrow in their activities. McGrath also speaks of *concocted* groups, those that have some qualities of natural groups but were modified in some way for the purpose of research (e.g., membership was determined by a researcher) and *quasi groups*, those that are highly constrained by the researcher in their activity and setting. Research and theory based on concocted and quasi groups often have relevance to the understanding of groups in organizations, and literature based on the study of such groups is reviewed in this chapter.

Further, *schools of thought* regarding groups in organizations are emphasized in this chapter. In reviewing existing literature, emphasis is given to theoretical and conceptual paradigms for understanding group performance rather than details of particular studies or offshoots of existing paradigms. Thus, one will not find in the chapter detailed reviews of large numbers of empirical reports with methodological critiques of each report; rather, the chapter tends toward summaries of existing evidence, going into detail about data sparingly. Further, methodological issues of group research are not, per se, a major focus of the chapter. Differences in methods as related to different schools of thought will, however, be addressed, especially as they help illuminate and explain those schools of thought.

The *group as a performing unit* is the primary unit of analysis in this chapter. For the groups of concern here, *work* is the occasion for the group coming into being and *working* is the principle transaction connecting group members to each other and the group to its environment. Thus, research and theory that addresses group dynamics in general, without an explicit connection to task performance by groups, is of secondary relevance to this chapter.

The dynamics of *relations between groups* in organizations, especially in terms of conflict and cooperation, have been studied for several years. The chapter by Thomas in this volume addresses conflict in depth. Issues of conflict are of interest in the present chapter as they relate to task performance by interacting
groups. That is, a central concern is how changes in perceptions, feelings, and behavior of group members, so often brought about by intergroup dynamics, relate to the task performance of groups at work. As we shall see, unfortunately, while there are many data on, for example, relationships between intergroup dynamics and the perceptions and feelings of group members, there are few data on the connection between intergroup relations and the effectiveness with which groups perform tasks.

Objectives. This chapter has few but ambitious objectives. One is to review the variety of existing schools of thought on group performance as they relate to understanding groups and teams in the workplace. These schools of thought are summarized, compared, and evaluated. A second objective is to present current theoretical frameworks for understanding group performance in organizations. That perspective is influenced by prior schools of thought but is distinct from them because of what is and is not emphasized as causes of effective group performance. A third objective is to address the implications of various schools of thought for the design, management, and change of work groups in organizations. A final objective is to analyze cogently the future of research, theory, and practice with regard to work groups in organizations.

A Definition and Orientation

Definition of Group. What is a group? McGrath (1984) points out that often we are fuzzy in our specification of what we mean when we use the word group. This fuzziness is a consequence of the inherently nondistinct boundary between groups and nongroups. That is, some social aggregates (e.g., audiences, crowds) can display some group features but are really considerably less of a group than, say, a work crew. In this light, "groupness" is a matter of degree. Thus, McGrath's definition of groups as "those social aggregates that involve mutual awareness and potential mutual interaction" (p. 7) was offered with the proviso that there are differing degrees of groupness. Shaw (1981) reviews a variety of definitions and offers his own: "two or more persons who are interacting with one another in such a manner that each person influences and is influenced by each other person" (p. 8). Brown (1988) states that "a group exists when two or more people define themselves as members of it and when its existence is recognized by at least one other member" (pp. 2-3).

These are minimalist definitions, outgrowths of research on basic social processes in concocted or quasi groups, in McGrath's (1984) terms. For the purpose of this chapter, we define groups as Hackman (1982) defines them, following the work of Alderfer (1977). Specifically, our interest is in the effectiveness of real groups with a task to perform in an organization. A real group is defined by Hackman (1982) as a social system that has the following properties: It is perceived to be an entity by its members and by nonmembers familiar with it; its members have some degree of interdependence; and a differentiation of roles and duties takes place in the group. In McGrath's (1984) terms, natural groups in organizations are of interest. A group task exists when group members are collectively responsible for measurable group-level outputs. The organization, in addition to being the context to which we wish to generalize our conclusions about group performance, is often regarded as the source of some of the most powerful influences on group effectiveness. Additionally, we make no distinction between the terms group and team. Either label applies to the type of entity just defined.

Minimum group size is a slippery issue, and we avoided the issue of size in the preceding paragraph. Weick (1969) gives a succinct account of some implications of group size. He speaks of crucial transitions in size, transitions that permit a greater variety of social
processes to occur. Weick's crucial transitions are from two to three (three allows a coalition or a majority to appear); from three to four (thus permitting equal alliances); from four to seven (creating the possibility of alliances among subunits, not just among individuals); and from seven to nine (nine permits coalitions within and between subunits to appear). One might quibble and assert that a transition from four to five is crucial as well, since five is the minimum number required to observe nonisolated minorities (i.e., minorities who do not stand alone), since nonisolated minorities have been shown to exert influence differently than an isolated minority (Levine, 1980). The point we wish to make is that size is indeed a crucial issue in terms of what is possible in groups. However, our knowledge of groups often is not very sensitive to matters of group size. Surely the distinction between dyads and larger social units is important, and there has been research on the relationship between group size and performance on differing types of group tasks. But by and large, size is not a core concern in theories of work group effectiveness.

Orientation. Although inclusive, the definition of groups we advocate buys trouble. Most research is not done with natural groups. McGrath and Altman (1966) estimated that less than 5 percent of the more than 2,000 studies of groups performed up to that time were done in natural settings. It is doubtful the percentage has since changed substantially. Can we, having stated that our concern is with real groups at work in organizations, justifiably make statements about work group performance from research that mostly does not investigate the kinds of groups of interest here?

We can, although with caution. The definition we adopt refers to the object of our inquiry, the target we wish to understand. The sources of our understanding, however, often are data and theory derived from the study of social aggregates that, according to the definition, could not be called natural or real work groups. We agree with McGrath (1984) that the distinction between what is and is not a group is often a matter of ambiguous degree and groups under any definition share elements with other grouplike social aggregates. We thus make use of literature based on groups not completely like those we seek to understand, cognizant that the greater the similarity between target and source groups the more confident we can be when extrapolating from the latter.

One further point about the nature of groups draws on a discussion by Karl Popper (1972) of the differing natures of social systems. Popper distinguishes between systems that are like clocks and those that are like clouds. Clocks operate in an orderly way. The actions of each component are predictable from the other, synchronized, and unified. Other systems are more like clouds. Clouds lack the orderliness of clocks. Clouds change form, grow and shrink, and are strongly affected by environmental conditions. The movements of molecules and particles making up a cloud are nearly impossible to predict precisely.

We believe that groups as social systems in organizations are more like clouds than clocks. Although there are some regularities in group behavior, groups share with clouds an absence of neat orderliness and, like clouds, are highly responsive to contextual influences. Similarly, just as an understanding of some of its molecules and particles does not give us an understanding of the entire cloud, so too do we fail to appreciate the nature of a group when we focus only on its elemental members. The actions and attributes of one group member often do not accurately predict another's. Finally, we believe that the behavior of groups does not unfold like clockwork. Rather, variation is the rule. Much of this variation is due to the impact of the diverse organizational contexts in which groups work. Thinking of groups as clouds gives us a realistic, usable foundation for understanding—and managing—groups at work.
Structure of the Chapter

With this orientation in mind, we can now turn to a review of several schools of thought about work groups. The review starts by examining some early perspectives that regard groups as intact social entities to be thought of holistically. Included here are the theories of Bion and Homans followed by the sociotechnical perspective. Although the review is not strictly ordered chronologically, these schools of thought emerged in the 1940s and 1950s. Then schools of thought that gained prominence in the 1950s and 1960s are addressed, including theories of group process and development and perspectives tied to sociopsychological research on small groups. Current research on group development also is examined. Another line of inquiry that has currency as well as decades of precedent is that concerned with the fit between individuals and groups. Group goals and models of task performance derived from social psychology are reviewed as well. Finally, more recent models of work group effectiveness are examined as are perspectives on intergroup relations at work.

Bion and the Group-as-Whole Perspective

One approach to understanding groups at work centers on the theorizing of W. R. Bion. Bion drew on his wartime experiences with groups, especially small therapy groups, and reformulated existing psychoanalytic concepts to explain the behavior of group members as well as of groups as a whole (Bion, 1961). Admittedly, the contemporary utility of Bion’s theory for groups at work is not great. We address it because it constitutes a school of thought that has had a great influence on subsequent theorizing, although the debt of later theorists to Bion’s work may not always have been explicitly recognized.

For Bion, the critical unit of analysis is the group viewed as a social system. Within that social system are members who at any time may act in concert as a single integrated system or who may form interdependent subsystems. The forces or motives for members’ actions are usually unconscious, according to Bion.

This emphasis on the unconscious in groups can be traced back to Freud and Le Bon (Brown, 1988). Le Bon (1897) spoke of the loss of rationality and personal identity in crowds (and, by implication, groups of any size) and their replacement by an unconscious group mind. The operation of a group mind was regarded as the reason why people in collectives could become barbaric, foolish, or uncaring. Similarly, Freud (1921/1961) saw groups as tending toward extreme behavior because of the operation of unconscious forces. For Freud, the forces concerned the emotional identifications group members have with each other and, especially importantly, with the group leader. Unlike Le Bon, Freud thought a group “capable of high intellectual performance, provided it is organized in the correct manner” (Taylor & Moghaddam, 1987, p. 18).

Bion (1961) departed from earlier theorists by explicitly theorizing about the role of unconscious forces in the accomplishment of tasks. Central to any group, according to Bion, is its primary task. Every group, however casual, meets to do something, to fulfill some function or set of functions, and this primary task provides the reason for the group’s existence. The primary task can be almost anything: to produce widgets, maximize return on investments, or cure patients. Primary tasks for groups of employees are usually quite clear in organizations.

Work group activity in service of the primary task is regarded as planned, rational, coordinated, and explicit. However, such activity was infused with, and sometimes replaced by, activity attributable to unconscious forces in every group, according to Bion (1961). Three basic types of unconscious forces are
identified by Bion: dependency, fight-flight, and pairing. Dependency forces concern feelings of insecurity or inadequacy among members. Member behavior that denotes immaturity, know-nothingness, or incompetence may be expressions of dependence. Deifying a group's leader and viewing him or her as omnipotent also can be an expression of dependence. The leader is often a focus of dependency behaviors.

Fight-flight behavior is thought to be an expression of concern for the survival or maintenance of the group. The group can survive (e.g., enhance its identity, strengthen its bonds among members) by fighting with another group, for example, or by fleeing to preserve itself when necessary. Fighting within a group also can be an expression of a concern for the survival of social subsystems within a group.

Pairing is concerned with friendship, love, and intimate relations among group members. Hopeful expectations about unity and pleasant relations among group members can be regarded as products of pairing forces.

Within any group, individual group members are seen as more or less disposed toward acting on these forces, depending on the forces' valence for members. Thus, some individuals may act more due to pairing forces while others act more strongly due to dependence forces. Whatever the valence of these forces for particular members, groups are to be understood, from Bion's perspective, as social systems that are constantly subject to two sets of forces: those reflecting the primary task and those reflecting unconscious forces. According to Riech (1970), "what one sees in reality is a work group which is suffused by, intruded into, and supported by the basic assumption group" (p. 62). Thus, a work group may not be able to accomplish its primary task if, for example, the leader cannot direct the members (Turquet, 1978), or fighting among group members may divert energy from the accomplishment of primary tasks. In a positive way, pairing assumptions may provide the cohesion needed by a group to do its work.

In summary, key ideas in Bion's (1961) work that appear in subsequent theorizing by others are the assertions that (a) the group as a whole is an appropriate and powerful level of analysis, (b) a primary task occasions the creation of all groups, and (c) in addition to a primary task, powerful unconscious forces exist within groups and influence behavior as well. Further, the specific character of these unconscious forces addresses fundamental concerns in the behavioral science of groups, such as cohesiveness (pairing), inter- and intragroup conflict and coalitions (fight-flight), and leader-member relations (dependency).

There are several, though sometimes vague, implications of this perspective for the design and management of effective work group performance. These include the requirement that work group performance be understood not only as a product of rationally designed and executed work procedures but also of irrational expressions of basic, unconscious motives shared in varying degrees by group members. Usually we think of the operation of such basic motives as impeding the accomplishment of primary tasks, though Bion's theory allows for the contribution of such forces to effective task accomplishment. Definitive testing of Bion's theory has not taken place and, as previously mentioned, it is little used as a guide to the design or management of work groups. However, the theory does speak to the potential value of altering the composition of a group to attain the "right" mix of motive strengths among members. Additionally, the theory can be evoked when heightening group members' awareness of the potential influence of basic, unconscious forces and how those forces might be expressed in ways that do not interfere with task accomplishment. This could be accomplished through sensitivity training, for example. As a school of thought, then, Bion's work has potential value for organizations and their
work groups, though there is little rigorous research to assess its merit and applicability to the workplace.

Homans’ Theory

In 1950 George C. Homans published *The Human Group*. In it, he presented data he had reanalyzed from existing studies of groups (e.g., Whyte’s [1943] study of neighborhood gangs) and presented a general theory of group behavior. His general theory was based on groups at work in organizations, such as accounts of the work group in the Bank Wiring Observation Room (Roethlisberger & Dickson, 1939), as well as groups in virtually all other settings. His general theory was thus meant to apply to groups at work in organizations.

For Homans (1950), every group has boundaries, and “outside the boundary lies the group’s environment” (p. 86). Further, Homans’ theory depicts groups as social systems made up of two subsystems—the external and the internal. The external subsystem is conditioned by the environment, which itself has three critical aspects: physical (or spatial), technical, and social. These aspects of the environment condition or influence the operation of a group’s external subsystem and thus influence the overall behavior of a group. By way of illustration, the environment of the Bank Wiring Observation Room group was characterized by a particular layout of work stations (spatial), available tools (technical), and relationships with management (social). These environmental characteristics shaped relations among group members and required adaptations of groups in order for the groups to survive in that environment.

Whereas the external subsystem in a group is directly conditioned by the environment, the environment’s impact on the internal subsystem of a group, according to Homans, is mediated by its impact on the external subsystem. Thus, the internal subsystem in a group is a result of the operation of the external subsystem, as that external subsystem is influenced by the environment. However, the external subsystem also is postulated to be influenced by the operation of the internal subsystem. Thus, there is mutual causation in Homans’ model: The external and internal subsystems influence each other.

To explain the particulars by which external and internal subsystems operate, Homans’ theory refers to three elements common to both internal and external systems in groups. The elements are activity, interaction, and sentiment. Activities are a basic unit of action carried out by an individual. Activities of the external system of the Bank Wiring Observation Room group included soldering and inspecting; activities of the internal system of the same group included expressions of friendship or hostility by a group member.

Interaction occurs when one member’s activity stimulates a response from another group member. Interactions vary on several dimensions (e.g., frequency). In the external system of the Bank Wiring Observation Room group, interactions included episodes of group members trading jobs or helping each other at their work. Examples of interactions in the internal system included group members pooling their money to bet on horses or “binging” each other (playfully punching another on the upper arm).

Sentiments are feelings, motives, attitudes. In short, sentiments are subjective states that give rise to behavior, in Homans’ view. Sentiments in the external system of the Bank Wiring Observation Room group included members’ preferences for earning high wages or wishing to remain a part of the organization. In the internal system, sentiments included expressions of liking or antagonism toward a fellow group member.

The elements (activity, interaction, sentiment) are regarded as interrelated within and between each of the two subsystems (internal and external) in which they occur. Thus, certain work activities of a group member bring about interactions with a fellow group
member. These interactions can, in turn, enhance the favorability of sentiments held by the parties to the interaction. Homans offers several propositions about the effects of changes in sentiment, interaction, and activity, such as the proposition that increases in the favorability of sentiments in the internal system lead to increased interactions in both the internal and external systems of groups.

Homans' theory is insightful in several ways. First, by describing two subsystems, internal and external, the theory accounts for the familiar distinction between task-oriented and socioemotional aspects of group life. This distinction has existed for many years (e.g., see Benne & Sheats, 1948, for an early statement of this distinction in these terms) and, in a loose way, is not unlike Bion's (1961) distinction between activities driven by a group's primary task and those activities that reflect affective and/or irrational motives. The theory also explicitly addresses the existence of a mutual influence between the internal and external subsystems in groups.

Second, Homans' theory explicitly recognizes the importance of a group's environment. His is the earliest sophisticated account we know of that addresses contextual influences on group performance. In this regard, Homans observes that usually more than one scheme of organization within a group is possible in any environment. That is, the structure and process of work groups in the same organization will vary, as they are rarely completely fixed by the physical, technical, and social features of a work environment. This point is illustrated in the work of Shea and Guzzo (1987a), who found that the degree of task interdependence among group members differed considerably among a sample of work groups operating in the same organization and subject to essentially the same physical, technical, and social demands. Thus, in relatively similar environments one should be able to observe quite different patterns of task-oriented and socioemotional behavior in groups at work.

Third, Homans points out that the relationship between a group and its environment is one of action and reaction. That is, groups not only are influenced by their environment but also influence it.

Fourth, Homans' theory is dynamic, recognizing that relationships among determinants of group behavior change over time, though the theory does not articulate the particular patterns or sequences of changes among determinants of group behavior.

Although the theory makes these contributions to our understanding of relationships among elements of groups and between groups and their environments, it has little to say about certain immediate concerns in an organization, such as why some groups are more productive than others. Effective groups, according to the theory, are those that survive, and survival depends on the appearance in a group of sentiments, activities, and interactions adaptive to the group's environment. As a criterion of effectiveness, survival has a rather distant horizon and is of little practical value with regard to the day-to-day performance of work groups. Nonetheless, the theory underlying this definition of effectiveness provides a rare, coherent account of group behavior that allows groups in very different settings (work, family, school) to be understood in comparable terms. Unfortunately, there are few empirical tests of the theory as applied to work groups.

**Sociotechnical Theory**

Sociotechnical theory began to develop in the early 1950s in conjunction with Tavistock Institute projects in the British coal mining industry. It provided a counterpoint to prevailing "mechanistic" theories of organization and management, such as Weber's theory of bureaucracy and Taylor's theory of scientific management. The core idea in sociotechnical theory is that any group, organization, or other social aggregate contains technical and social
systems. Further, the perspective assumes that "attempts to optimize for either...system alone will result in the suboptimization of the sociotechnical whole" (Trist, 1981).

The technological system concerns the transformation of raw material into useful output and the social system is what links the human operators of the technology with the technology itself and with each other (Rousseau, 1977). These two systems are regarded as distinct from each other in the sense that technical systems follow laws of natural science, while social systems follow laws of human sciences (Trist, 1981). Technical and social systems are, nonetheless, intertwined. The technical system shapes the functions and tasks at work and thereby establishes parameters within which a social system can operate. Each system has its own goals.

Sociotechnical theory posits that optimization of both systems in the pursuit of each system's goals leads to high technical performance and a positive social experience at work. Joint optimization, in turn, is accomplished by structuring work appropriately. Principles of the sociotechnical framework for the appropriate structuring of work include (a) regarding the work system as an essential entity, (b) emphasizing the centrality of the work group to that work system, (c) permitting groups to regulate themselves, and (d) encouraging the development of multiple skills in group members (Rousseau, 1977; Trist, 1981).

More specifically, sociotechnical theorists hold that individual job holders should have "the opportunity to use a variety of skills, to make decisions, to complete meaningful, whole pieces of work, to learn how well one is performing, to interact with others, and to learn" (Rousseau, 1977). These characteristics reflect the influence of Bion (1961) and Emery (1964, 1976) and resemble those of Herzberg, Mausner, Peterson, and Capwell (1957) and other job design theorists (cf. Hackman & Oldham, 1980). A key difference, however, is the centrality of the work group in sociotechnical theory and its place in the broader organizational system.

Sociotechnical theory also posits that joint optimization requires autonomous work groups* (Pearce & Ravlin, 1987). Autonomous work groups exercise control over the factors affecting them and are thought to be the key determinant of better results and higher satisfaction (Trist, 1981). At least three conditions enhance such autonomy: task differentiation, boundary control, and task control (Cummings, 1978, 1981). Task differentiation refers to how distinct and differentiable the group's task is from the work of other organizational units. The greater the differentiation, the better. Boundary control concerns how much group members can affect transactions with their environment. Finally, task control concerns the extent to which employees have control over the actual process of performing the group's work versus doing their work according to the specifications and directives of others.

The appeal of sociotechnical theory probably stems in part from its explicit action orientation and its model of man as striving, growing, learning, and democratic, and as a creator of the future. This orientation stands in clear contradistinction to scientific management with its naive if not misleading assumptions about motivation and its view that organizational objectives and tasks are largely givens and issues of how to organize are largely problems of allocation.

A slowly growing body of literature exists that assesses the impact of autonomous work groups and thus, by implication, the validity of sociotechnical principles. Much of this literature consists of case studies. As regards performance, Pearce and Ravlin (1987) reviewed

*For purposes of our exposition of sociotechnical theory, we will use the term autonomous work groups and make no distinctions among the various other labels that have been applied to the type of work group we are considering. These labels include self-regulating work group, semi-autonomous work group, self-coordinating teams, and others.
research during the period from 1970 to 1986 and reached favorable conclusions about the positive effect of autonomous work groups on task performance. They caution, though, that few statistical analyses exist to support the various qualitative observations of the impact of autonomous work groups on productivity.

Goodman (1979, 1986) presents a quantitative account of a case in which self-regulating work groups were instituted in a coal mine. Goodman found that, indeed, highly cohesive teams were able to be formed when sociotechnical principles were applied. However, he concluded that the change to self-regulating work groups had only small positive effects on performance. A more optimistic assessment is reported by Trist, Susman, and Brown (1977). Of further interest is Goodman's (1986) conclusion that, in this case, nonhuman factors (physical conditions, equipment) influenced performance more strongly than did human factors. Undoubtedly there are many other instances in which social and technical factors combine unequally to determine work group effectiveness.

Wall, Kemp, Jackson and Clegg (1986) investigated the implementation of sociotechnical principles to create autonomous work groups in a British confectionery firm. They found that the intrinsic job satisfaction of work group members rose in response to the creation of autonomous work groups. However, there were no apparent effects of such arrangements on other variables, such as general work motivation, mental health, or performance. Cordery, Mueller, and Smith (1991) also report that employee attitudes became more favorable following the adoption of autonomous work groups but that the existence of such work groups was associated with increased levels of absenteeism and turnover.

Goodman, Devadas, and Hughson (1988) reviewed the confectionery study, comparing it to two other cases in which sociotechnical principles were applied to the design and management of work groups. The other two cases were the famous Topeka (Walton, 1972) case and the aforementioned coal mine study. Goodman et al. (1988) conclude that the use of work teams according to sociotechnical principles can raise productivity as well as attitudes. Citing meta-analytic work by Macy, Izumi, Hurts, Norton, and Smith (1986), Goodman et al. (1988) state that self-regulating work groups have a general positive impact on productivity but more specific, selective effects on attitudes. Note that positive attitudes toward one’s job or organization are regarded as indicators of the optimization of the social, humanistic ends to be met by working.

In summary, sociotechnical theory has several implications for the design and management of work groups. According to this school of thought, effective group performance (defined as the joint optimization of social and task goals) requires that groups regulate themselves. This capacity to self-regulate depends on the extent to which groups are differentiated from others in the organization, control their transactions with the organizational environment in which they exist, and have the capacity to determine how their work is executed. It also depends on group members possessing sufficient skills appropriate to the task.

The emphasis on groups as social systems with an organizational environment is quite pronounced in the sociotechnical framework, an emphasis shared with Homans' (1950) theory. The emphasis in Homans’ theory is on groups adapting to environmental demands. In the sociotechnical framework, the emphasis is on the creation of group autonomy and control over its environment. Like Homans’ theory, the sociotechnical framework is meant to be applicable to a wide range of organizational settings. And while the research on sociotechnical principles is limited, the pattern of evidence supports the validity of the sociotechnical perspective.
Interaction Process and Group Performance

Without question, the dominant way of thinking about group performance reflects an input-process-output model. This historically has dominated group research and theorizing and it dominates today. In this model, input typically refers to the things group members bring to the group, including expertise, status, personality attributes, abilities, experience, and demographic attributes. Process refers to the interaction among group members, typically including the social exchange of information, influence attempts, leadership efforts, and expressions of approval or disapproval of fellow group members. Output, of course, refers to the products yielded by groups. These might include ideas, decisions, plans, artistic creations, and widgets. The model, then, is explicitly causal: The nature (quantity, originality) of group outputs are a result of the nature of the group interaction process, which itself is a consequence of the members' inputs. Figure 1(A) shows this model in its simplest form.

Figure 1 also depicts some alternative formulations of the dominant model, following Hackman (1987). In the first of these alternative formulations (B), the influence of process on output is retained. The major variation is that input factors are depicted as having a direct effect on group output. That is, the effects of inputs are not all mediated by the group interaction process. The second of the alternative formulations (C) constitutes a more radical departure from dominant thinking. Here any mediating, causal role of the interaction process is eliminated. In this version, inputs directly determine both the nature of group member interaction and group outputs, but the nature of member interaction is not crucial to understanding why some groups yield better outputs than others.

In subsequent sections of this chapter, various elaborations on the three versions of the input-process-output framework are addressed. For example, some elaborations address the nature of the inputs, expanding the definition of inputs to include organizational or contextual factors, not just member characteristics. Other elaborations specify the particular features of the interaction process regarded as most important to effective group performance, the meaning of effectiveness, and the role of the nature of the task (is it an input or is it a mediator of the process-output connection?) in group performance. In the present section, we address the causal role of group interaction process in group performance. Research evidence on interventions to change the interaction process to bring about changes in the performance effectiveness of groups also is reviewed.

Process Losses and Group Performance

McGrath (1984) points out that sociopsychological research on groups can be organized according to various general themes, some of which pertain to interaction patterns among group members and the task performance of groups. It is this line of sociopsychological research that is of principal concern here. We
regard it as a school of thought concerning group task performance, and its cornerstone is Steiner's (1972) book, *Group Process and Productivity*. While Steiner's work integrated a number of research studies preceding it, it is his formulations that have shaped much subsequent investigation.

The general model of task performance offered by Steiner is:

\[
\text{Actual productivity} = \text{potential productivity} - \text{process losses}
\]

*Potential productivity* is the highest level of performance attainable by a group. According to the model, potential productivity is determined by the available resources (e.g., information, strength) within a group. *Actual productivity* fails to match potential productivity, according to the model, due to process losses in groups. *Process losses* are a result of less-than-optimal ways of combining members' resources into a group product.

**Sources of Process Losses.** Where do process losses come from? According to Steiner, two principal sources are deficits of *coordination* and *motivation*. For example, large group size or missed communication among members can cause problems of integrating members' contributions. Member motivation can also be affected by group size. Evidence on the phenomenon labeled *social loafing* (i.e., reductions in member effort) indicates that group members often exert less effort as group size increases (Latane, 1986; Latane, Williams, & Harkins, 1979; Steiner, 1972). Social loafing, though, appears to be a function of more than mere group size. Evidence shows social loafing to be greater when (a) group members feel their contributions are dispensable (Weldon & Mustari, 1988), (b) members experience low control over task outcomes (Price, 1987), (c) members are neither identifiable nor subject to evaluation or comparison to others (Harkins & Szymanski, 1987), and (d) tasks are not intrinsically meaningful (Brickner, Harkins, & Ostrom, 1986).

**Individuals Versus Groups.** Another line of research related to Steiner's (1972) work concerns individual versus group performance. Hill (1982) reviewed studies of individual versus group performance on tasks involving learning, concept mastery, and problem solving and concluded that, in general, group performance was superior to that of its average member but often inferior to that of its most competent individual. Explanations of why groups may not do as well as their most competent individual invoke the notion of process losses resulting in suboptimal use of member resources. It should be noted that the bulk of research on individual versus group performance has been done using relatively simple tasks performed as part of laboratory settings; little work has addressed individual versus group performance on complex tasks in organizational settings. Indeed, the issue is moot when the tasks given to groups at work could not reasonably be done by individuals working alone.

One specific area in which the superiority of individual versus group performance has been extensively investigated is brainstorming. Diehl and Stroebe (1987) reviewed the results of 22 studies on this issue and conducted 4 more of their own. As regards the *quantity* of ideas produced, the same number of people working alone (referred to as a *nominal group*) consistently produce more ideas than that number of people working as a group. This difference is termed a *productivity loss* in brainstorming groups. No such clear productivity loss existed with regard to the *quality* of ideas produced. Diehl and Stroebe's own studies tested explanations of why the quantity productivity loss in brainstorming groups exists. Their data show that social loafing is not a powerful source of the productivity loss in brainstorming groups. Rather, *production...*
blocking is the source. Production blocking occurs because only one member of a group can speak at a time. Consequently, people get distracted from their ideas by those of others, people forget ideas as they are forced to suppress them while listening, or ideas are held back because they seem irrelevant or meager following what somebody else just said. The implications of Diehl and Stroebe's analysis are straightforward: When groups must make decisions, it is better to generate ideas by having members work alone and have members act as a group for the evaluation of and choice among ideas.

Models of Input Conversion. One line of work that Steiner's (1972) both continued and stimulated more of is the creation of formal models of the processes of converting group member inputs into a group product. Davis' (1973, 1980) work on social decision schemes is an example. It maps the rules used by groups to convert individual preferences (or solutions) into group decisions, such as majority wins, truth wins (one member's preferences prevail), or truth supported wins (one member's preferences prevail if supported by at least one other member). This approach has been used, for example, to model how mock juries arrive at decisions of guilt or innocence.

Shiflett (1979) also theorized about conversion processes in groups. He presented a model that describes group outputs as a consequence of resources (member knowledge, skill, etc.) and transformers, which are "variables that have an impact on resources and determine the manner in which they are incorporated into and related to the output variables" (Shiflett, 1979, p. 67). In organizations, transformers might include situational constraints or facilitators (e.g., see Schoorman & Schneider, 1988) and leadership style. Shiflett's (1979) recognition of factors in the organizational context which both shape the nature of resources available to a group and the processes by which resources are converted in outputs is one of the earliest.

Tasks. The optimal process of converting a group's resources into group products, according to Steiner (1972), depends heavily on the nature of the task a group is performing. Steiner offered what he called a partial typology of group tasks. This partial typology has had a strong influence on subsequent sociopsychological research. Steiner (1972) distinguished between unitary and divisible tasks. The former (but not the latter) requires a single group output. Several types of unitary tasks are then distinguished, each of which has implications for how individuals ought to combine their resources into a single group output. Additive tasks require that group members' resources be summed for maximal productivity (as in groups of farm workers picking produce). Disjunctive tasks require that only one member do the task for the group to succeed (as when solving a puzzle). Conjunctive tasks require that each group member must individually succeed if the group is to succeed (as when every member of a hockey team must not be "offside" when advancing a puck down the ice). Discretionary tasks are those for which resources can be combined in any way seen fit by the group. This typology has been used to study the effects on performance of such variables as group size. (Larger groups should do better on additive and disjunctive tasks but poorer on conjunctive tasks.)

Although intriguing, this typology of tasks has seen virtually no use in organizational settings. That is, the work that groups do in organizations has not been successfully described in terms of these task properties. (For that matter, there is very little analysis of group or team tasks in the manner that jobs for individuals have been described through any of the familiar job analysis techniques.) Consequently, the research and modeling that relies on Steiner's (1972) typology has not had much relevance to the workplace.

The role of the nature of the task, though, often appears in research and theory on group performance. In causal theories of
group performance, tasks tend to be cited in either of two ways. In one, tasks moderate the link between interaction process and group outputs. That is, the relationship of process to performance depends on the nature of the task. This is how Steiner (1972) cited tasks. Alternatively, tasks are cited as stimuli to group performance. From this perspective, the nature of the task motivates (or fails to motivate) performance in groups. Sociotechnical theory, as described earlier, cites tasks in this way, as does work-related job design to group performance (e.g., Hackman & Oldham, 1980). A different approach to the role of task is offered by Driskell, Hogan, and Salas (1987). They adopt Holland’s (1966) typology of vocational interests and apply it to describe tasks. Thus, for example, some tasks are imaginative/aesthetic in nature and others are mechanical/technical. Driskell et al. then outline a series of propositions about the optimal fit of personality type to groups.

Summary. The sociopsychological perspective on process losses as a source of deficiencies in group performance is made up of a number of diverse orientations. These orientations all place interaction process in the key, mediating role in the transformation of member inputs into group outputs. The orientations differ, though, in their relative emphasis on matters of effort loss, coordination difficulties, or the role of the task in the transformation of inputs into outputs.

Overall, the task performance school of thought in sociopsychological investigations of groups has strongly emphasized (a) the comparison of group to individual performance, (b) the rules or methods by which the resources of individuals are combined into group products, (c) sources of suboptimal use of individual resources, and (d) the role of the task as a moderator of the process-output relationship. It has not emphasized groups as indivisible performing units, as have other schools of thought (e.g., sociotechnical theory). Further, the task performance school has a closed system flavor. That is, available resources mostly are viewed as inherent qualities of group members (such as knowledge and abilities). How groups transact with and draw resources from their environments and apply them to task performance is not addressed (Shiflett’s [1979] work is an exception). Further, the process loss school of thought has been criticized because it typically views resources as static (Hill, 1982). Perhaps a more fundamental criticism by Hill (1982) and others (Collins & Guetzkow, 1964; Hackman & Morris, 1975; Michaelson, Watson, & Black, 1989) is that too often gains are neglected in this perspective (for data bearing on this, see Michaelson et al., 1989). Further, process loss as a concept has been sharply attacked by McGrath (1991). McGrath finds the term pejorative and sees in it an implication that any group whose action does not conform to an experimenter’s or manager’s preconceptions of what should be comes to be seen as a deficient, flawed group in need of fixing (usually by importing a researcher’s or consultant’s favored technique for improving group performance). Instead, McGrath suggests we appreciate equifinality in groups (i.e., that multiple paths to the same end exist) and that “real” groups usually have multiple objectives on their agenda that must be considered in the hunt for process losses.

The task performance school of thought, though, does raise several issues relevant to understanding the effectiveness of work groups in organizations, including the nature of the task, the role of motivation and coordination in group performance, and, by implication, the relative merits of groups versus individuals as organizational building blocks. However, general prescriptions for the design and management of work groups are relatively limited. As we have seen, one action recommendation from brainstorming research is to have individuals, not groups, engage in idea production. And from social loafing research one can derive the recommendations that groups should be given intrinsically interesting tasks to perform, that individual members should feel they are important to the fate of the group, and individual
contributions should remain identifiable and subject to evaluation and comparison. These recommendations are not unlike many existing principles of enlightened human resource management. We turn now to an examination of a very different orientation toward group process and group performance than the orientation just reviewed, albeit one that views problems of interaction as causes of poor task performance by groups.

What About Cohesiveness?

Group cohesiveness refers to the forces that bind members to each other and to their group. It is a concept of wide appeal. Often, especially in the lay view of group performance, cohesiveness is thought to be a precursor of effective team performance.

The data on the relationship between cohesiveness and performance are not unambiguous. Using a Hunter-Schmidt meta-analytic approach, Evans and Dion (1991) analyzed 18 estimates from 372 groups and found a corrected mean correlation between cohesion and performance of +.42. Evans and Dion are cautious in their interpretation of this figure because of the number of studies not accounted for in their analysis and because of the limited types of groups (e.g., concocted groups, sports teams) in the sample of studies they reviewed. In a tantalizing footnote in their report, Evans and Dion report knowledge of an unpublished set of 26 estimates of the relationship between cohesiveness and performance, citing Stogdill (1972). In that set of studies, the uncorrected mean correlation between cohesion and performance is −.19 and is based on a much larger sample.

Some of the earliest work may still yield the best insights into the cohesiveness-performance relationship (Schachter, Ellerston, McBride, & Gregory, 1951; Seashore, 1954). Seashore (1954) studied factory workers in 228 groups and found that cohesiveness and performance were indeed related. However, the direction of that relationship depended on group norms. When norms existed for high productivity, cohesiveness and productivity were positively related. When group norms called for low productivity, cohesiveness and productivity were negatively related. Seashore studied rather large groups (over 25 workers per group, on average). Schachter et al. (1951) found essentially the same result in an experimental study of three-person groups of college students.

To summarize, it appears that the relationship between group cohesiveness and performance is not simple. Rather, it is contingent on norms. It remains plausible that other contingency factors operate as well.

T-groups and the Process Orientation

Kurt Lewin influenced the study of small groups in several ways. He initiated an era of basic laboratory research on groups (by articulating a vision, by energizing students and colleagues to engage groups as objects of study, and by creating the Center for Group Dynamics). Lewin also played a crucial role in developing the action-oriented training laboratory at the National Training Laboratory (NTL) in Bethel, Maine. NTL yielded the T-group, a form of training in group dynamics designed to increase self-knowledge and the capacity to understand relationships in groups. T-groups themselves usually comprise but a part of a learning laboratory, other parts being skill exercises, theory sessions, and intergroup exercise (Benne, Bradf ird, & Lippitt, 1964). Premises underlying T-groups include participants’ responsibility for their learning and the role of staff as facilitators of members’ examination of their own behavior, feelings, and reactions.

It was assumed that the learning gained through T-groups would change behavior in other settings, such as the workplace (Benne et al.,1964). Yet, as we shall see, empirical evidence supporting the assumption behind T-groups is difficult to find (Campbell & Dunnette, 1968; Schwartzman, 1986).
There appear to be many factors that affect learning in T-group settings and the transfer of that learning to other settings. These factors include individual personality and orientation, trainer style, organizational style and structure, and technological constraints in the workplace. The duration of T-group learning and its appropriateness to work life generally and work group performance particularly has been questioned by many (Campbell & Dunnette, 1968), and it appears that the impact of T-group training on individual or group performance is modest at best and conditional on several situational factors.

Applied to work groups, the T-group focus on interpersonal interaction in groups reflects a core assumption that such interaction process influences performance effectiveness. On the surface, it makes sense that more competent and open relations among group members should lead to better group task performance. Process losses are a common theme in discussions of group performance. That is, the level of task accomplishment attained by a group is thought to be inhibited by misunderstandings among group members, less-than-optimal interpersonal communication, aversive feelings experienced as a member of a group, and so on. Consequently, attempting to improve the social interaction among group members is thought to pay off in improved task accomplishments. T-group training is one method of improving social interaction. Other methods exist as well (e.g., process consultation without T-group training). Collectively, these methods are known as team building or team development (Dyer, 1987). Essential to the value of any of these methods, however, is the premise that improved relations yield improved task performance. How valid is this premise?

Several reviews of literature on interventions to improve the social interaction process exist (Buller & Bell, 1986; Kaplan, 1979; Shea & Guzzo, 1987b; Sundstrom, De Meuse, & Futrell, 1990; Tannenbaum, Beard, & Salas, in press; Woodman & Sherwood, 1980). Woodman and Sherwood (1980) reviewed team development studies up to 1980, and Sundstrom et al. (1990) and Tannenbaum et al. (in press) reviewed studies reported through the next decade. The conclusions of these three reviews are similar: Such interventions have a reliably positive effect on member attitudes and perceptions but have no reliable impact on task effectiveness. In particular, interventions designed to change the interpersonal processes in groups are least likely to affect any change in group performance. However, those interventions attempting to change the task process in groups are more successful, though not consistently so (Sundstrom et al., 1990; Woodman & Sherwood, 1980). Interventions to change task process include such things as helping groups clarify member roles or general group objectives. Work by Herold (1978, 1979) also is relevant. Herold classified interventions as either principally social or technical/task in nature. Herold reported evidence that when interventions did not fit the task demands (e.g., interpersonal skill training for a group working on a task for which satisfying relations among members were not essential), performance decreased. When the intervention fit task demands (e.g., technical assistance on tasks with high technical complexity), performance increased. Tannenbaum et al. (in press) report that more powerful research designs are being used more often to test the effects of team building interventions and that increasing proportions of such studies are examining organizational indicators, not just team-level indicators, of the effects of team-building interventions.

These substantive findings suggest that team building and related process interventions are not universally useful but may succeed in raising group performance in some circumstances. More recent models of work group effectiveness, to be discussed later, tend to move away from emphasizing the importance of the social interaction process within a group as a determinant of its effectiveness and...
toward emphasizing contextual influences on effectiveness.

**Group Development: Differing Views**

Interest in T-groups and related process interventions led many researchers to take an interest in group development or maturation. No single school of thought on group development predominates, although considerable literature exists. Some work focuses on how it is that individuals come together as a group in the first place (e.g., Moreland, 1987). The greater portion of the literature, though, focuses on postinception issues and has as a basic tenet that groups are not ready at inception to perform effectively. Rather, the group passes through developmental stages, such as **forming**, **storming**, **norming**, and **performing** (Tuckman, 1965). The first three stages, which concern the specification of norms, roles, goals, plans, and the resolution of conflicting viewpoints and interests, are seen as necessary prerequisites to the final stage of performing (Tuckman, 1965).

Data supporting the existence of these stages comes largely from therapy, the ad hoc laboratory, or training groups. The kinds of people in such groups, the circumstances by which they got there, the temporary character of so many of these groups, and the fact that such groups lack an organizational context potentially limit the generalizability to the workplace of theories of stages of work group development. Indeed, Ginnett (1990) provides a conspicuous counterpoint to the idea that groups must pass through stages of development in order to work effectively. Ginnett shows that a cockpit crew of an airliner, within 10 minutes, can move from being three strangers assigned to fly together for the first time to a group capable of successfully performing the complex and demanding job of flying an airplane. Ginnett (1990) argues that traditional models of group development are derived from studies of groups that “import little from [an] organizational context” (p. 445). In contrast, it is the strong organizational context that provides the rules, task definitions, information, and resources needed for the crew to become immediately effective. Such contextual forces remove the group’s need to develop plans, assign roles, determine and allocate resources, set norms, resolve conflicts, or do the other things traditional models of group development describe.

Gersick’s (1988, 1989) work also tackles the formidable issue of group development. Her research is not so much concerned with the continuing paradoxes or polarities of group life as it is with the evolution from group inception to task completion. Gersick finds that groups do not progress through stages of development on their way to task accomplishment. Rather, the development observed in groups is characterized as **punctuated equilibrium** tied to the calendar life of groups. Specifically, at about the midpoint between the time groups start their work and the due date for completion, groups undergo a dramatic change in how they think about their work, their approach to it, and the energy they put into it. While groups may be learning and making some minor accomplishments prior to the midpoint, it is not until the midpoint transition that groups make tangible progress toward their goal. Gersick’s research is a challenge to traditional views of group development and it has the merit of being empirically demonstrated in different settings.

Another critique of the group development perspective addresses one of its conceptual foundations: that group development results from resolving conflicts (Berg & Smith, 1987). Berg and Smith argue instead that opposites are a part of group life and that exploration of them is an ongoing and necessary component of group life. They offer examples of continuing, unresolved paradoxes common to life in groups, such as those of identity (individual
vs. group), dependency (independence vs. dependence), intimacy (accepting and initiating personal disclosures), and trust (trust requires trust). Paradoxes are not resolved, in the view of Berg and Smith (1987). Rather, they persist, though different paradoxes will have salience at different times. The balancing of, say, how much an individual’s identity rests with a group or the intimacy among group members changes, and the change is less a resolution than it is the beginning of the next change.

This approach resembles somewhat Bales’ (1985) recent work depicting three vectors of group space and the movement of groups and individuals along those vectors. The approach also parallels that of Altman et al., which rests on three basic ideas: opposition, relatedness of opposites, and the dynamic character of relationship between opposites (Altman, Vinse, & Brown, 1981; McGrath, 1984). Altman contends that social relationships contain two basic polarities: openness/closeness and stability/change. The polarities are themselves connected and neither dominates. Altman views any extreme within a polarity as self-limiting, hence the system tends to withdraw from its own limits. Altman sees no ideal state, only temporary balance points and, consequently, treats change as a persistent and fundamental aspect of social interaction, being simultaneously desirable and undesirable, since people seek both stability and change.

McGrath (1991) speaks to matters of group development in his TIP (time, interaction, performance) theory of groups. McGrath asserts that group research historically has failed to account for the physical, temporal, and social (e.g., organizational) contexts in which groups exist, largely because empirical evidence on groups has been collected in what he calls context-stripped conditions. Groups we meet in everyday life, according to McGrath (1991), are not much like the ones empirically studied. As a consequence, we possess rather limited theories of group phenomena.

McGrath’s (1991) view of the nature of groups is that they are loosely coupled (i.e., members are loosely coupled to each other and the group is loosely coupled to the social context in which it exists) and purposeful. At any one time a group can be regarded as engaging in a focal task, but groups typically have multiple, concurrent tasks, according to McGrath. Further, groups contend with generic temporal problems (e.g., ambiguity regarding time, scarcity of time), solving such problems through synchronization of behaviors (“entrainment”). And while McGrath’s account of the modes of behavior in groups includes the types of behavior previously described as forming, storming, performing and the like, such behaviors definitely do not occur in fixed sequences or phases.

Some of the most intriguing data on group development concerns not what groups experience on their way to becoming capable of performing a task but rather how the level of group performance relates to the age or longevity of groups. Katz’s (1982) study of research and development teams in an organization revealed that team performance declined as groups aged. Further, evidence indicated that the decline was a function of decreased communication among team members and between teams and outsiders. The longer teams existed (beyond a few years), the less they communicated and the poorer they performed. Stein (1982) also reviewed evidence that older, more established groups tend to be lower in creativity when making decisions than newer groups. Ziller’s (1965) work on open versus closed groups—the essential difference between them being changes of membership versus stability of membership—showed that open groups were often more creative. Many specific variables are intertwined and bundled together in the study of group performance over time. Consequently, it is not clear exactly what causes declines in performance over time, although Katz’s (1982) evidence regarding communication is compelling.
In general, earlier perspectives on group development suggested that groups must move through a sequence of developmental stages or resolve some set of conflicts before the group becomes capable of performing effectively. The specific issues of conflict or labels for the stages have never been completely agreed on, but the general developmental perspective is common among competing theories within this school of thought. More recent theorizing has emphasized the nonappearance of stages (Gersick, 1988, 1989; Ginnett, 1990) and the nonresolution of conflicts (Altman et al., 1981; Bales, 1985; Berg & Smith, 1987) in groups.

Prescriptions for the design and management of work groups that can be drawn from studies of group development literature are relatively few. Ancona’s (1987) comment that group development research fails to “adequately address developmental issues in task groups within organizations” (p. 220) echoes this sentiment. However, the work of Katz (1982) and Ziffer (1965) speak to the usefulness of disbanding or at least periodically reconstituting teams in the interest of effective task performance, though such tactics might have limited practicality. Gersick’s (1988, 1989) work suggests that groups can be effective without steady progress toward a goal. Consequently, it may not always be appropriate to manage groups by establishing benchmarks of progress tied to equal divisions of calendar time. Gersick’s work also suggests that skill in managing the midpoint transition may be of benefit to a group at work. Ginnett’s (1990) work suggests that investments in team development activities for newly formed groups may sometimes be ill-spent resources, especially for groups with strong organizational contexts. Berg and Smith’s (1987) advice on managing groups effectively calls for adopting an attitude of approaching the anxiety associated with the unsettled paradoxes of group life rather than fleeing from them, and having group leaders facilitate exploration of paradoxical tensions, although such recommendations are rather nonspecific.

Group Composition and Fit With Individuals

What is the proper composition of a group? Which types of people best work together? In what ways must group members be compatible in order to work together effectively? Why? These are questions asked in one school of thought on group performance, that which emphasizes the proper “fit” of people into groups. The questions, however, are of concern to virtually all perspectives on group performance. Like mixing colors in a painting, this school of thought is concerned with the effects of different parts on the whole.

As with certain other paradigms for understanding group performance, the composition/individual-group-fit paradigm is not internally coherent. That is, there is no unified view of just which personal factors (personality traits, attitudes, needs) ought to be considered in combination as determinants of group task effectiveness. Nonetheless, the differing views all share the idea that certain combinations of people in a group are more likely to result in more effective group performance than other combinations.

For example, the performance of groups with either similar or dissimilar cultural backgrounds was studied by Fiedler and colleagues (Fiedler, 1966; Fiedler, Meuwese, & Onk, 1961). Cultural similarity was defined in terms of native language, religious, or regional differences. Performance differences in groups were unrelated to cultural differences among group members. Recent interest in organizational demography would seem to have many implications for work group effectiveness. For example, O’Reilly, Caldwell, and Barnett (1989) also found that turnover among group members is related to work group demography, and Zenger and Lawrence (1989) found that the demography of work unit members predicts the frequency of technical communications. In these studies demography was assessed in terms of age and tenure and no direct measures of work group
effectiveness were obtained. Jackson et al. (1991) studied the demographic heterogeneity of top management teams in bank holding companies. Although the study did not assess the relation between group heterogeneity and performance effectiveness, it did find that more demographically heterogeneous teams had higher rates of member turnover than did the less heterogeneous teams. Heterogeneity was assessed in this study through several measures, including age, tenure, experience outside the financial industry, military experience, and various aspects of prior education.

Research on group problem solving and creativity provided an early confirmation of the effects of composition on group performance. For example, groups made up of people with dissimilar personality profiles have been found to perform better than groups made up of people with similar personality profiles (Hoffman, 1959; Hoffman & Maier, 1961) in terms of the quality and innovativeness of solutions produced. Stein (1982) also reviews evidence that groups made up of people with heterogeneous characteristics tend to be more creative when using synectics, a creativity-enhancing technique. Synectics is a technique meant to stimulate creative problem solving through the use of metaphors and analogies to depict problems, thus making them "strange" or "unfamiliar" and facilitating their unconventional resolution (Stein, 1975). The value of heterogeneity among members in decision making groups is implied by the work of Janis (1982) and others (e.g., Ziller, 1965), who prescribe diversity among group members as a means of enhancing the quality of group decision making. Hence, it appears that staffing groups in a way that maximizes member differences may contribute to performance in problem solving and decision making (Guzzo, 1986).

Not surprisingly, group performance is positively related to the abilities of its members (Hill, 1982). However, it may be that certain combinations of member ability are more efficacious than others. Some research has formed homogeneous and heterogeneous groups on the basis of members' intellectual abilities and examined the performance of those groups on a subsequent intellectual test (e.g., Goldman, 1965; Laughlin, Branch, & Johnson, 1969). Some results indicated that groups made up of mixed levels of ability tended to do better than groups made up of individuals with similar levels of ability. Other research, though, has shown that placing similarly talented people in a group can indeed be an effective way of staffing groups when group members are high in ability. Tziner and Eden's (1985) study of military crews showed that a high-ability member's contribution to performance was most pronounced when all other crew members also were high in ability. Tziner and Eden state that "talent is used more effectively when concentrated than when spread around" (p. 91). The type of tasks performed may be important in determining the relationship between group effectiveness and individual-group fit with respect to ability (Guzzo, 1988) and may help explain differences between studies such as Laughlin et al. (1969) and Tziner and Eden (1985). The former examined performance on a purely intellective task while the latter examined performance on a wide variety of military tasks over a two-month period.

One of the more noted theories of individual-group fit has been presented by Schutz (1955, 1958, 1967). Schutz's Fundamental Interpersonal Relations Orientation (FIRO) is a theory not only of which personal attributes of members, in combination, affect group performance but also of why this is so. Schutz argued that three basic human needs are expressed in group interaction. These are needs for inclusion (a desire to accept or be accepted by others), control (a desire to influence or be influenced), and affection (a desire to like and love others and be liked and loved in return). Schutz asserts that people develop patterned ways of expressing these needs as adults in groups, ways that are a product of childhood experiences.

The basic assumption is that groups composed of people with compatible need
expressions will be more effective than groups composed of people with incompatible need expressions. Compatibility exists in multiple dimensions. Originator compatibility refers to the fit of people who tend to initiate inclusion, control, and affection in a group with those who tend to receive it. Compatible groups are populated by initiators and receivers. Interchange compatibility concerns the agreement among group members about just how much inclusion, control, and affection should be expressed in a group. In an incompatible group, for example, some members may desire more expression of affection than others. Originator and interchange compatibility are regarded in the theory as the two primary determinants of overall compatibility in groups, although a third type also has been specified, reciprocal compatibility. Reciprocal compatibility can best be thought of as referring to the extent to which any two people in a group mutually satisfy each other's preferences regarding the expression of inclusion, control, and affection. (A group can be regarded as a set of $n \times (n - 1)/2$ pairs of people, where $n =$ number of people in the group). A measure for assessing the three needs and their two forms of expression is the FIRO-B index.

Evidence provided by Schutz (1958) supported the theory's prediction that compatible groups are more effective than incompatible groups. Reddy and Byrnes (1972) found that compatibility on the dimensions of control and affection related to performance (in terms of time to task completion) in groups of managers studied in a laboratory setting. In contrast, results failing to detect relationships between compatibility and group performance also have been reported (e.g., Hill, 1982; Moos & Spiesman, 1962; Shaw & Nickols, 1964). Hill (1982), in fact, found that incompatibility was related to the productivity of teams of systems analysts. Thus, evidence concerning relationships between need compatibilities as defined by Schutz and group task effectiveness is quite inconclusive. More recently, considerable interest has been shown in the degree of compatibility in terms of cognitive styles as assessed by the Myers-Briggs Type Indicator® assessment instrument, although there is little research evidence presently available that substantiates a relationship of such compatibility to group performance.

As Shaw's (1981) literature review attests, the nature of the social interaction in a group (who talks to whom, expressions of attraction among members) are certainly affected by the mix of group member characteristics. Effective task performance, however, is a different issue. The importance of composition, demography, and individual-group fit are not widely investigated for their connection to task performance, and when they are, the evidence often is mixed. Ability is an exception. Greater member ability leads to better group performance (Hill, 1982), and there appears to be a positive interaction effect such that groups composed of all high-ability people perform better than the sum of their abilities would predict (Tziner & Eden, 1985). One domain in which some support exists for the value of heterogeneity is in problem solving tasks, although even here the evidence is not completely consistent. Further, there is little specification of the intervening psychological processes that would mediate the effects of heterogeneity on effective performance. The development of better theory in this regard would be quite useful as a guide to future research and to organizations explicitly seeking to staff for team effectiveness.

**Group Goals and Task Performance**

The operation and effects of goals on individual task performance has been much investigated in industrial and organizational psychology. Distinct from that literature but in some ways analogous to it is a body of research and theory on goals and group performance. Research on group goals involves two general
themes. One is personal versus group goals and the reconciliation or irreconciliation of the sometimes multiple, competing objectives of a group and its various members. The other, more analogous to the individual performance goal literature, addresses the effect of group goals on performance, including reactions to successful and unsuccessful goal attainment. We will deal with these themes in order.

**Personal Versus Group Goals**

Research on conflicts between personal and group goals has been concerned mostly with inconsistencies between one member’s personal interests or goals and another’s or between one member and the group as a whole. Task performance by the group has not been a popular dependent variable in such research. Rather, such goal inconsistencies have been more frequently examined as they relate to matters of interpersonal dynamics within groups, as illustrated by the assertion by Mackie and Goethals (1987) that “intragroup life is marked by a seeking of isomorphism between individual and group goals” (pp. 150–151). The processes by which isomorphism, or goal compatibility, is sought include exercising social influence, engaging in cooperative or competitive interaction, or the dynamics of inclusion and exclusion (e.g., leaving or joining a group), according to Mackie and Goethals (1987).

Cartwright and Zander (1968) speak of person-oriented motives and group-oriented motives held by members of groups. Person-oriented motives concern personal ends or goals that can exist independent of one’s group membership and the attainment of which can be facilitated or obstructed by a group. Group-oriented motives concern attainments of the group. These two motives coexist in groups. It is the interdependence among these motives that is thought to determine such things as remaining a member of the group and expending energy in the pursuit of group goals.

In 1977, Zander summarized and extrapolated from research on group motivation and performance and summarized several points, including the following: (a) the stronger the group-oriented motives of members, the better the group performs, (b) the desire for group goal attainment often overwhelms the desire for the attainment of personal goals, and (c) the desire for group success increases as a group experiences prior success. This emphasis on the dynamics of individuals’ motivation for group success is rare among schools of thought on the determinants of effective group performance.

**Goals and Performance**

Early findings on the impact of goals on performance come from the work of Zander (e.g., Zander & Medow, 1963; Zander & Newcomb, 1967). They found, for example, that group goals can bring about high group performance, especially when performance feedback is available (Zander, 1971), regardless of the goal difficulty level. Group goal levels are more likely to rise after a success than fall after a failure, and group members evaluate their groups according to discrepancies between aspired-to goals and actual group goal attainment (Zander, 1971; Zander & Medow, 1963).

A different perspective on understanding how group goals affect performance involves the concept of tension. According to this perspective, the establishment of task-related goals creates a tension within group members, and the tension persists until it is reduced by goal attainment (Horwitz, 1954). Pritchard, Jones, Roth, Stuebing, and Ekeberg, (1988), without invoking the concept of goal-induced tension, provide a further demonstration of the positive impact of goals on group performance in an organization. Whatever the specific mediating mechanisms, research findings show that goals for groups produce performance consequences for groups much as they do for individuals (Shaw, 1981).
Recent Models of Work Group Effectiveness

To this point, we have reviewed schools of thought that have been in existence a decade or more and, for the most part, have some appreciable body of research associated with them. As we have seen, sometimes only small portions of that existing body of research directly relates to understanding the causes of effective performance in work groups. That is, dependent variables other than performance effectiveness are more frequently studied.

Recently, considerably more attention has been given to performance effectiveness as a dependent variable. In fact, there has been a burgeoning interest in work groups in organizations, leading to the appearance of several theoretical models of work group effectiveness. We turn now to these models. Because these models are recent, relatively little research has accumulated with which to assess their validity. However, as a set the models seem quite testable, at least in many of their essential components, and we expect research on the models to appear over the next few years. These models are quite eclectic, and it will become readily apparent that they owe much to the various schools of thought reviewed thus far.

We believe the appearance of these models marks an important change in the stream of research on group dynamics. More specifically, the nature of inquiry into group effectiveness has changed from, What can be learned from basic social psychological research in group dynamics that is useful for understanding performance effectiveness by groups? to What are the peculiar features of organizations that determine the effectiveness of the groups at work? This new wave in research on group effectiveness is not simply a shift from basic to applied research. The new wave is quite basic in that it is theory driven and it pursues what are believed to be fundamental determinants of group effectiveness. Newer theories tend to regard the group as whole, and place a much greater emphasis on contextual influences on group performance rather than just on intragroup factors. Related to the emphasis on contextual factors is the choice of research methods. More recent research tends to be done in the settings to which findings are meant to be generalized: organizations. Traditionally, laboratories have been the most frequent settings for group research (McGrath, 1984; McGrath & Altman, 1966). In fact, McGrath and Altman (1966) reported that only 5 percent of group research to that date was conducted in naturally occurring settings. The theoretical and methodological orientations of recent developments clearly are entwined: Newer theories emphasize contextual influences on performance, the very influences laboratory settings are designed to hold constant or minimize. Relatedly, newer theories are quite multivariate. Thus, research methods are being adopted (e.g., qualitative observation, causal modeling) that permit simultaneous examination of multiple influences.

Indeed, we believe that the popularity of multivariate model-fitting, anthropological-style methods of qualitative research, and action research that mixes qualitative and quantitative data will continue to increase in the study of groups at work. These approaches are consonant with an increased emphasis on studying naturally occurring, "real" groups over time at work. Correspondingly, experimental methods involving concocted and quasi groups will decline in the investigation of group performance effectiveness as a dependent variable. Perhaps work group effectiveness research will become its own domain apart from group dynamics research done in a more traditional, experimental sociopsychological vein. We do not advocate such a breach, we merely predict it. And we are not alone. Two social psychologists, Levine and Moreland (1990), after reviewing sociopsychological research completed during the 1980s, have this to say:
Despite all the excellent research on small groups within social psychology, that discipline has already lost its dominance in this field. The torch has been passed to (or, more accurately, picked up by) colleagues in other disciplines, particularly organizational psychology. They have no doubts about the importance of small groups and are often in the forefront of group research. So, rather than lamenting the decline of interest in groups, we should all be celebrating its resurgence, albeit in a different locale. (p. 620)

What is the shape of these more recent models of work group effectiveness?

**Input–Process–Output Foundations**

Hackman and Morris (1975) published a widely cited review of evidence concerning the traditional view that group performance effectiveness is best understood in terms of an input–process–output framework, as discussed earlier. Their conclusions, abstracted, were that (a) the group interaction process clearly is affected by the nature of inputs in terms of member skills, status differences, and so on; (b) some evidence, though scarce, confirms the view that differences in the group interaction process are indeed related to differences in group performance effectiveness; however, (c) little evidence exists to confirm the mediating role of the interaction process in the relationship between inputs and outputs. That a general, unified input–process–output theory could ever adequately account for group effectiveness was dismissed as impossible by Hackman and Morris (1975). Instead, more focused, targeted models were advocated.

Hackman and Morris (1975) proposed their own framework for understanding group performance effectiveness. This model highlighted three categories of input variables as important determinants of ultimate performance effectiveness. These categories of inputs are group composition, norms, and task design. The aspects of member interaction identified as important to performance effectiveness were use of member skill, use of appropriate task performance strategies, and member effort (amount and coordination). The relation of the interaction process, summarized in terms of the three aspects just mentioned, to performance effectiveness was not a simple one, in Hackman and Morris’ view. Rather, that relationship depends on critical task contingencies. For example, for certain tasks member effort may be very important in determining effectiveness but not for other tasks, depending, say, on the members’ expertise. Note that task plays two roles in this model. On one hand, the nature of the task is considered a moderator of the relationship between member interaction and performance effectiveness. On the other hand, the nature of a group’s task also is an initiating factor in a causal chain leading to performance effectiveness.

The emphasis on task design as an input factor that influences group effectiveness opened the door to contextual influences on work group effectiveness in theorizing grounded in previous sociopsychological research and provided one of several links to sociotechnical thought. The particulars of how the design of tasks influences work group effectiveness were elaborated in later works (e.g., Hackman, 1987; Hackman & Oldham, 1980). In essence, the design of the task is regarded as having motivational consequences for group members, primarily affecting the level of effort applied toward the group’s work. Motivating tasks are those that permit the use of varied skills, are important, are whole rather than fragmented, provide group members autonomy in carrying out their work, and are rich in performance feedback. These characteristics of motivating tasks for groups are like those postulated to be motivating for individuals working alone (Hackman & Oldham, 1980). Hackman and
Oldham (1980) further emphasized the role of the organizational context in group effectiveness. In particular, an organization's technology, human resource management practices, and control practices were identified as additional contextual factors.

Hackman's (1987) work extends the theme of contextual influences on work group effectiveness. Here reward systems, education and training opportunities, and information management are identified as aspects of an organization that are input factors influencing the level of work group effectiveness. The impact of these input factors on effectiveness is mediated by interaction process in groups. Further, the effect of interaction process on effectiveness is itself moderated by the sufficiency of material resources. Another set of input factors in the Hackman (1987) model are what he terms matters of group design, including the design of the group task, the group's composition, and the performance-related norms of the group. The Hackman (1987) model also discusses the notion of positive and negative synergy. Synergy can be thought of as energy or effort of group members that, if positive, leads to creative and innovative performance, and if negative, inhibits performance. In the Hackman model, synergy arises from the nature of the group interaction process. Data bearing on the model are reported in Hackman (1990). This book is a collection of qualitative accounts that make use of concepts from the Hackman (1987) model to explain and interpret the performance of a wide variety of work groups in organizations.

Gladstein (1984) presented an input–process–output model of group performance that draws heavily on prior research in group dynamics and was tested through multivariate model fitting. There are many specific variables within Gladstein's model, grouped into categories of determinants of effectiveness. Categories of inputs are group composition (e.g., distribution of member skills), group structure (e.g., group size), available resources (e.g., training availability), and organizational structure (e.g., rewards for performance). These input factors are thought to have both direct effects on group effectiveness and indirect effects mediated through group interaction process. The link between interaction process and effectiveness is itself regarded as dependent on characteristics of the group's task, such as task complexity or interdependence among group members.

Gladstein's (1984) model shares much with Hackman's (1987) and Nieva, Fleishman, and Reick's (1978) work in giving primacy to contextual influences on group effectiveness. However, the models assign different causal roles to the same or similar variables. For example, Gladstein's (1984) model assigns task complexity a moderating role in the group process–group outcome relationship (similar to the Hackman & Morris [1975] work). Such a variable would be an input variable, in Hackman's (1987) view. It thus appears that a shared set of factors are becoming recognized as determinants of group performance effectiveness but that disagreement exists concerning their exact operation.

A modified form of an input–process–output model of work group effectiveness is offered by Sundstrom et al. (1990). Sundstrom et al. cite three types of factors influencing team effectiveness at work: the organizational context, group boundaries, and group development. In the Sundstrom et al. model each of these factors influences and is influenced by team effectiveness. Further, organizational context influences boundary conditions and vice versa, and boundary conditions influence team group development. There is thus reciprocal causation throughout the model.

Elements of the organizational context cited as influencing effectiveness include task design, organizational culture, mission (goal) clarity, autonomy of a team, feedback, reward systems, the physical environment, and training and consultation support. Several of these elements are like certain input factors
cited by Hackman (1987) and Gladstein (1984). Boundaries largely concern the nature of the relationship of the group to its organizational context. In particular, effective work groups are seen as those characterized by an appropriate degree of differentiation from the broader organization—a point this model shares with sociotechnical theory—while at the same time being appropriately integrated in the system. The concept of team development, as used by Sundstrom et al., reflects the premise that teams change over time in how they operate and that these changes affect and are affected by the level of team effectiveness. The concept of team development in this model incorporates much of what is contained in the concept of group interaction process as used in previous literature. In the Sundstrom et al. model, such process is a potential but not a necessary cause of effectiveness: Like the Gladstein (1984) model, effectiveness in this model can be regarded as a direct, unmediated consequence of organizational conditions.

Goodman, Ravlin, and Argote (1986) examined recent models of group performance, almost all of which highlight the role of organizational context in determining work group effectiveness. Some of these models more strongly emphasize interaction process than do others. A model formulated by Nieva et al. (1978) is described by Goodman et al. (1986). In this model, team performance, the prime dependent variable, is regarded as made up of both individual and collective accomplishments and the interaction necessary to bring about those accomplishments. Antecedents of team performance include member resources, team characteristics, and task characteristics. These antecedents are themselves thought to be a product of various external demands, such as aspects of organizational structure or management practices, although the Nieva et al. model is less explicit than the work of Hackman (1987), Gladstein (1984), or Sundstrom et al. (1990) in articulating the particular aspects of the organizational context that impinge on effective team performance.

Two other models that emphasize organizational context fall in the sociotechnical school of thought reviewed earlier. Pearce and Ravlin (1987) cite the following as conditions for effective group performance: appropriate task conditions (e.g., a challenging assignment), organizational conditions (e.g., managerial support), and personnel (e.g., employees who value autonomy). These conditions, combined with factors such as a heterogeneous membership and incentives for innovative behavior, can lead to effective team performance, according to Pearce and Ravlin (1987). Kolodny and Kiggundu’s (1980) model emphasizes task and social conditions as determinants of group effectiveness. The task conditions refer to physical arrangements at work that may be highly situationally specific. The social conditions in the Kolodny and Kiggundu (1980) model are leadership, organizational arrangements for the execution of work (e.g., division of labor, personnel policies), and group characteristics. The term group characteristics, as used by Kolodny and Kiggundu, really refers to issues of member composition, such as the homogeneity or heterogeneity of members’ backgrounds, age, and the like. The impact of these task and social factors on how well groups perform their work is mediated by the interplay of leadership, group member interaction, and the technical skills of group members. Like the model of Sundstrom et al. (1990), this model points out dynamic influences among the variables of interest. Of particular interest in both models is the idea that the level of performance effectiveness attained by a group influences the leadership and organizational arrangements it subsequently experiences. A similar point is made by Hackman (1987) and Shea and Guzzo (1987b).

The work of Shea and Guzzo (1987b) proposes that group effectiveness is a consequence of three key factors: outcome interdependence, task interdependence, and potency.
Outcome interdependence exists when group members share a common fate. The greater the importance and number of consequences that follow from task performance, the greater the outcome interdependence. Thus, the extent to which organizational pay and recognition systems reward groups determines the level of outcome interdependence among members of a group and, according to Shea and Guzzo (1987b), greater outcome interdependence leads to greater effectiveness. Task interdependence refers to the extent to which group members must interact and depend on each other in order for the group to accomplish its work. Task interdependence is not regarded as a direct cause of effective group performance. Rather, it is viewed as moderating the impact of outcome interdependence. Outcomes for effective task performance can be distributed to group members noncompetitively or competitively. Building on the work of Miller and Hamblin (1963), Shea and Guzzo (1987) assert that distributions that foster competition among group members increase group productivity only when task interdependence is low. When task interdependence is high, noncompetitive distributions enhance group performance. Potency refers to a collective belief in a group that it can be effective (Guzzo, Yost, Campbell, & Shea, in press). This is essentially a motivational term, not unlike the concept of self-efficacy (Bandura, 1982) elevated to the group level. The stronger the belief that the group can succeed, the greater its effectiveness, according to Shea and Guzzo (1987a).

Like the Kolodny and Kiggundu (1980) model, the Shea and Guzzo (1987b) model posits dynamic relationships among the determinants of effectiveness. That is, past levels of effectiveness in groups alter the current sense of potency. Also, the manner in which outcomes for performance are distributed to group members can affect, over time, the degree of task interdependence in how the group carries out its work. And like all recent models of work group effectiveness, the Shea and Guzzo model emphasizes the influence of organizational context. For example, in this model contextual influences such as technology, control systems, and history influence, respectively, task interdependence, outcome interdependence, and the sense of potency. Shea and Guzzo (1987a) report empirical support for some of the model’s propositions. Elements of this model have been incorporated in a more recent theoretical account of work group effectiveness offered by Guzzo and Campbell (1990). This latter model emphasizes the role of potency as a determinant of team effectiveness as well as three other factors: (a) the extent to which the organization provides teams with resources, (b) the nature of team goals and their alignment with the broader business unit and organizational goals, and (c) the extent to which organizations reward teams for their accomplishments.

**Intergroup Relations and Task Performance**

Intergroup relations are studied at many levels of analysis. At a macrosociological level of analysis, colonialism and social movements can be viewed as expressions of intergroup dynamics (Kidder & Stewart, 1975). Race relations can be studied as a product of intergroup dynamics both at a societal (van de Berghe, 1972) and organizational (Alderfer, 1977, 1987; Brett & Rognes, 1986) level. Behavior between two individuals, too, can be understood as a product of intergroup relations (Alderfer, 1987; Tajfel, 1982).

Indeed, much of intergroup theory is predicated on the assumption that group memberships affect the behavior of both groups as collectives and their individual members. Rice (1969) contended that all interactions between individuals contain an intergroup component. That is, how two people act toward each other to some degree reflects their respective group memberships and the relations that exist
among those groups. Tajfel (1982), for example, argues that the effects of group memberships can be the overwhelming force in determining interpersonal relations. Sherif (1966) proposed that intergroup behavior occurs "whenever individuals belonging to one group interact, collectively or individually, with another group or its members in terms of their group identification" (p.12). Group identification refers to the concept that one's own identity, and thus the perception of others' identity, is defined at least in part by reference to who is "in" or "out" of the various groups existing in an environment. In addition to groups, other social referents could be individuals or institutions, such as a church. This orientation has characterized intergroup writing for 30 years (cf. Tajfel, 1982; Taylor & Moghaddam, 1987; Turner, 1987).

In addition to its concern with the impact of intergroup conflict on individual attitudes and behavior, intergroup research also largely concerns psychological processes that guide group members' behavior and perceptions in an intergroup context. Still other research concerns the amelioration of intergroup conflict.

However, there is relatively little research directly bearing on how relations between groups in organizations influence the effectiveness with which those groups perform their work. There is much, though, that implies that task performance is often impaired by adversarial relations between groups. However, we must remain open to the possibility that discordant relations among groups may at times contribute to enhanced work performance. The following sections review schools of thought on intergroup relations in organizations.

**Realistic Conflict**

The realistic conflict perspective assumes that conflict exists between groups as a result of incompatible group interests. Put simply, "real" conflicts of interest are the root cause of intergroup friction. Such a perspective has an easy applicability to organizational life in which competition between groups (departments, work crews, etc.) may exist for budget, space, personnel, prestige, and so on. The perspective emphasizes functional relations between groups and views humans as calculative and attempting to maximize their gains.

An early explorer of realistic intergroup conflict was Sherif (e.g., Sherif, 1966), particularly noted for the Robbers Cave experiments. In these studies, groups of boys at a summer camp were put in situations in which they were to be winners and losers (e.g., in contests such as tug-of-war). Such competitions had pervasive effects. In-group solidarity increased, for example, while attitudes toward and regard for the competitor group deteriorated. More aggressive boys emerged as leaders within the groups. Acts of sabotage against the other team were made. And, generally, the boys' perceptions of what was fair or deserved was strongly colored by their group memberships and experiences. Intergroup conflicts were resolved, and attitude and behavior change followed, when the groups were placed in a series of situations in which they had to cooperate in order to achieve a "superordinate goal" that, if attained, would benefit each team (e.g., restoring the water supply to the camp).

Blake, Shepard, and Mouton (1964) extended the basic ideas and principles of realistic conflict theory to intergroup relations in organizations and provided several accounts of instances in which interventions succeeded in reducing dysfunctional intergroup conflict. The interventions included training in awareness of the psychological consequences of intergroup conflict and the identification of superordinate goals. An account of intergroup relations in organizations rooted in the realistic conflict perspective is offered by Brett and Rognes (1986). Ways of resolving such conflicts, according to Brett and Rognes, include (a) designing away the necessity for relations between groups by changing the organizational structure, (b) creating lateral structures to break
down barriers between groups (e.g., liaison roles), (c) enhancing the skills of organizational members in personally managing intergroup relations, and (d) using mediators to resolve conflicts. The particular circumstances determine which of these is likely to be most effective.

Intergroup Relations in Organizational Contexts

A more organizationally centered perspective on intergroup relations comes from the work of Alderfer (1977, 1987). This perspective focuses on the group as a whole and emphasizes the importance of understanding groups as embedded in social systems in which other groups exist. This work also takes a clinical approach to research and stresses the value of applying intergroup theory in order to understand not only the relationship among groups in an organization but also the relationship between researchers and the organizational groups with whom they work (Alderfer & Smith, 1982).

Alderfer’s (1987) theory holds that both organizationally and nonorganizationally based group memberships operate in the workplace. Organizationally based groups can mirror task and hierarchical differences (Alderfer, 1987; Smith, 1982). Nonorganizationally based groups are referred to by Alderfer as identity groups. Their essential characteristic is that people join them at birth. Identity groups in organizations often are evident on the basis of gender, ethnicity, family, and generation. Individuals therefore belong to a number of groups at all times. The number and variety of group membership carried by organizational members ensures conflicts. Thus, groups in organizations may find themselves in conflict because of differences in members’ basic identities (e.g., racial identities) as well as because of such things as competition for scarce resources or ambiguous jurisdictions.

According to Tajfel (1982), the importance of one’s group identifications depends on factors such as awareness of membership, the value one places on membership, and the emotional investment in the awareness and evaluations (Tajfel, 1982; Alderfer 1987; Alderfer & Smith, 1982) extended the list of factors influencing the importance of group identifications to include the organizational context. Part of the context concerns formal management practices. For example, reward systems that stimulate competition between groups for rewards may stimulate heightened task performance but may also have adverse effects, especially when cooperation is required among groups for the work to be done or when competing groups have the opportunity to interfere with each other’s work (Tajfel, 1982; Worcel, 1979; Worcel, Andreoli, & Folger, 1977; Worcel, Axson, Ferris, Samaha, & Schweitzer, 1978). The organizational context also concerns the general patterns of behavior and experiences at work that reflect differences between groups. For example, the experience of being a black supervisor of a work group predominantly made up of whites depends on how the supervisor “carries” his or her racial group membership and how group members carry theirs. According to Alderfer (1987), the influence of intergroup relations on individuals’ affect, cognitions, and behavior often is unconscious.

In summary, this perspective recognizes the influences of group membership on the behavior of individuals. Individuals are viewed as carrying multiple group memberships with them, and interaction among individuals can be construed as intergroup interaction carried out by representatives of different groups embedded in a system populated by multiple groups. The abundance of groups and group memberships makes conflict within and between groups inevitable in organizations. Several implications of this perspective exist. One is that the resolution of trouble some interpersonal relations may rest not in effecting some sort of personal change but rather by effecting change in the relations
between the groups to which individuals belong. Additionally, a starting point for changing intergroup relations at work is an examination of one's own group, since the influence of group membership is often an unconscious process. And interventions designed to reduce the dysfunctional aspects of intergroup relations—such as interpersonal skill development, joint problem-solving by groups in conflict, and the creation of superordinate goals to unify groups—can indeed be effective, according to this perspective, as long as they are appropriate to the underlying basis (e.g., identity, hierarchy) of intergroup strife.

Cognitive Social Psychology Perspective

Social cognition is a stream of research and theorizing that seeks to understand how people "make sense of other people and themselves" (Fiske & Taylor, 1984, p. 12) by analyzing basic cognitive processes such as perceiving, storing, retrieving, responding to, and evaluating information. Applied to the topic of intergroup relations, the social cognition approach defines groups in terms of perceived social entities (not, for example, in terms of actual interdependencies or role relationships). The self and others are then categorized as members or nonmembers of such entities. Categorization affects the evaluation of and subsequent behavior toward others (Fiske & Taylor, 1984; Stephan, 1985; Turner & Giles, 1981).

Provocative evidence regarding the importance of simple in-group/out-group perceptual categorizations comes from research by Tajfel, Flament, Billig, and Bundy (1971). They found that people can form social categories on the basis of information about trivial differences between themselves and others, even in the absence of social contact or any form of exchange. Once a "we-they" distinction is perceived, evidence suggests that people tend to discriminate against out-group members and in favor of in-group members and to further perceive out-group members as inferior, adversaries, and competitive (Fiske & Taylor, 1984; Turner, 1981). Thus, the root cause of intergroup conflict is categorical perceptions, according to the social cognition perspective, and perceived social categories can be induced with minimal information and without any history of or current interaction among people.

As Turner (1981) argues, the basis of intergroup behavior is how people see themselves, not what attitudes they hold or how they feel toward others or what social relationships with others might exist. Consequently, Turner asserts that the most effective strategy for overcoming the adverse effects of intergroup conflict and discrimination is to change perceptions and identifications concerning who is in and out of the perceived social categories. Although Turner faults "classical" strategies of increasing contact and creating superordinate goals to reduce intergroup frictions, Fiske and Taylor (1984) argue that such techniques have merit. The most successful attempts to reduce the adverse consequences of intergroup dynamics may well involve a combination of factors designed to alter perceptions, behavior, and the context in which they exist.

Other Perspectives

There are many theoretical perspectives that have been invoked to explain the dynamics of intergroup relations. Taylor and Moghaddam (1987) review several of these, including those tied to Freudian perspectives, equity theory, relative deprivation theory, and other theories focused more on intergroup relations on a societal level (e.g., relations between classes). Equity and relative deprivation theories were formulated initially to deal with individual perceptions and behaviors. They have been extended, by implication, to deal with groups, although neither theory has been applied extensively to intergroup relations in organizations.
Summary

Realistic conflict theory regards intergroup conflict as a product of the goal structures under which groups operate. Research within this tradition has generated an extensive understanding of the consequences of intergroup conflict on members’ perceptions, attitudes, and behavior toward the out-group. Alderfer’s (1987) work accepts the proposition that goal structures can bring about intergroup conflict in organizations but also emphasizes the importance of other influences on intergroup relations, such as identity group differences. Alderfer also emphasizes unconscious, rather than calculative, influences of intergroup relations. The social cognition perspective emphasizes categorical perceptions as the root of intergroup conflict. The objective context in which groups exist is considerably less important in this perspective than in the others. Research within this framework has demonstrated that intergroup biases can be induced even in quite minimal social contexts.

As has been mentioned, none of these perspectives focuses on the direct impact of relations between groups on group performance effectiveness, concerning themselves instead with dynamics of cooperation and competition between groups for both intragroup and intergroup processes. Stephan (1985) summarizes some of the major findings that have implications for group task performance. These include the finding that cooperation and competition within groups often occur hand in hand with cooperation or competition between groups, intergroup competition can spur effort within competing groups, high intragroup cooperation in combination with intergroup competition usually results in a worsening of relations between groups, and cooperative actions between groups usually improves the relations between those groups, especially when the differing groups succeed in a cooperative task. Some tantalizing evidence on the effects of cooperative versus competitive relationships on performance within groups is offered by Brown and Abrams (1986, cited by Brown, 1988). In a controlled study they found that group members performed better when they believed their group was in a cooperative rather than competitive relation with another group. Does this finding generalize? Do groups embedded in a cooperative organizational context perform better than groups in other sorts of contexts? Questions such as these need to be addressed by future research to better understand how intergroup relations influence the performance effectiveness of groups in organizations.

A Partial Synthesis and Analysis

Thus far we have reviewed the theoretical cores, empirical status, and practical implications of several schools of thought that bear on group performance in organizations. We find it impossible to reduce the variation in these schools of thought to a few simple statements. However, there are some themes that cut across various schools of thought, and it is these themes that we will use in this section to contrast and consolidate elements of the various schools of thought. The six themes concern (a) group composition, (b) group development, (c) the social interaction process, (d) the nature of group tasks, (e) motivational issues in groups, and (f) contextual influences on group performance. Some of the practical implications associated with each theme also will be discussed in this section. In the final section of the chapter we will return to a brief consideration of the future of research, theory, and practice regarding groups in organizations.

Group Composition

No school of thought is indifferent to matters of group composition in the determination of performance effectiveness. However, there are
differences in the specification of which personal attributes are most important and, more generally, the relative importance of composition. Theory and research that emphasize interpersonal fit in terms of needs (Schutz, 1967), personality (Hoffman & Maier, 1961), and abilities (Tziner & Eden, 1985) clearly are theories that explicitly view group composition as an important determinant of effectiveness. Other theorists also emphasize group composition, though giving it a lesser role (e.g., Hackman, 1987). From another perspective (e.g., the work of Steiner, 1972, and others), group composition primarily determines the resources available to a group working on a task, especially an integrative task, and the concern is with the optimal utilization of available resources. From this perspective, the match among members is less important than the sum of resources they carry with them into the group.

The “right” combination of members has been very difficult to specify. Hackman and Oldham (1980) provide the following guidelines for staffing groups: Choose the members with the greatest task-relevant expertise, select or develop group members with at least moderate levels of interpersonal skill, do not overpopulate the group, and strike a balance of homogeneity and heterogeneity among members. Guzzo (1988) discussed some of the same issues in staffing groups and emphasized that fewer rather than more members are to be preferred in the interest of effectiveness and suggested that heterogeneous members can be expected to perform better on cognitive, decision-making tasks, but not necessarily on other kinds of tasks.

Issues of composition other than who or how many should be in a group include (a) who controls group membership and (b) permanence or stability of membership. Sociotechnical theory asserts that groups in organizations must have autonomy to be effective, and one of the primary expressions of autonomy is a group’s self-determination of its membership. Little is known about the consequences of self-determination because it is so rarely used in practice and because such a nontraditional approach to staffing has many possible policy complications. For example, if group members select fellow group members on the basis of likeness to themselves, will the result be a too homogeneous organization? Also, on just what grounds will selection decisions be made? Will ability dominate or will “sociometric” considerations, and with what consequences? A study by Colarelli and Boos (in press) using students compared sociometric (e.g., based on personal disclosure and social interaction) and ability bases of group membership. They found little difference in group performance as a function of basis of composition but did find that the sociometric method yielded greater within-group communication, cohesion, and satisfaction.

Group membership usually is thought of as unchanging. The reality of organizations, though, is that group membership frequently changes due to turnover, promotions, and the like. Evidence reviewed earlier suggests that groups lose their effectiveness as they age (e.g., Katz, 1982) and are less creative when membership is stable rather than changing (Ziller, 1965). As regards the composition and staffing of groups in organizations, then, it may often be useful to think of planned changes in group membership to revitalize groups and counter potential ill effects of long-term membership stability.

Group Development

A long-standing line of thinking holds that group development is essential to effective task performance. Accordingly, groups are regarded as needing to pass through stages of development to reach a “maturity” level that enables task performance to be done well. Tuckman’s (1965) work, with its catchy summary of developmental stages in terms of
forming, storming, norming, and performing, is highly representative of this approach.

An alternative view, shared by many, is that it is inappropriate to think of a fixed sequence of developmental stages in a group which, when completed, enable the group to perform effectively. Work by Gersick (1988, 1989), for example, documents rather sudden lurches from little locomotion toward task completion to rapid movement in that direction. The change is said to come at the midpoint of a group’s calendar life. Ginnett (1990) documents an example of a new team that can become effective immediately, largely due to the influence of the organizational context. McGrath (1991) too, dismisses the notion of a sequence of phases. Others, such as Altman et al. (1981), Bales (1985), and Berg and Smith (1987), argue that groups never reach a developmental plateau and instead must constantly struggle with the nonresolution of forces and paradoxes inherent to group life.

Other theoretical perspectives attend to developmental processes in groups, though with varying degrees of explicitness. Hackman (1987) is concerned with the capacity of group members to work together effectively in the future. Effective groups are thus not only good at their present task but also will be good at future tasks. Homans (1950) is concerned with adaptation in groups. From this perspective, group development is a continual process of meeting environmental demands in order for the group to sustain itself. In a sense, the notion of self-regulating work groups as offered by sociotechnical theory (e.g., Cummings, 1978) also is concerned with developmental processes, although no specific phases are cited as benchmarks of developmental processes in groups. Kolodny and Kiggundu (1980) and Shea and Guzzo (1987a) provide models that explicitly address changing relationships among the determinants of work group effectiveness over time. However, neither perspective presents an ideal endpoint or developmental plateau to be attained by groups. While most schools of thought give at least a nod to the idea that groups mature and otherwise change over time, the connections between task effectiveness and such change are rarely clear. However, it does now seem clear that newly formed groups in organizations can be expected to become immediately effective without investing in consultation or training to develop them to a performance-ready plateau.

Social Interaction Process

Interaction process refers to how group members behave and react to each other regarding such things as exchanging information, expressing feelings, forming coalitions, or supporting or rejecting a group leader. Two types of interaction among group members are those concerning expressive (affective or socioemotional) concerns and those concerning instrumental or task-related concerns. The terms expressive and instrumental are used by Bales (1953) and are at the root of his interaction process analysis (IPA) method of measuring behavior among group members. Examples of expressive interaction include showing antagonism, affection, dependency, and support toward a fellow group member or one’s group. Examples of instrumental interaction include asking for information and giving suggestions in problem-solving groups.

Schools of thought differ in the importance assigned to expressive and instrumental member interactions as precursors of effectiveness. Bion (1961) and Schutz (1967), for example, heavily emphasize expressive interactions as determinants of effectiveness, as does the group process orientation in the T-group tradition. That is, adequate socioemotional expression in groups is seen as a precondition for effective task performance (e.g., Bales, 1955; Likert, 1967; Schutz, 1967). Rarely is the association turned around: Effective task performance is not often cited as a precondition for satisfactory expressive interaction in groups. Definitions of what
is adequate social process differ according to different theories. For Schutz (1967) it concerns mutual need fulfillment by group members, while for Likert (1967) it concerns openness among members to each other and an atmosphere of trust.

Nonetheless, the view that expressive interaction is more basic or fundamental to groups than instrumental interaction underlies attempts to increase group performance by changing the style of expressive interaction among members through various team-building interventions or sensitivity training interventions. As noted earlier, the past decade has seen many theorists take issue with the idea that "proper" expressive, socioemotional interaction among group members is essential to effective task performance. The reason is that there is only sparse evidence that interventions designed to alter the expressive interaction among group members reliably enhance task performance (Eden, 1985; Herold, 1978, 1979; Kaplan, 1979; Sundstrom et al., 1990; Woodman & Sherwood, 1980). Such evidence suggests (a) the view that adequate expressive interaction is a precursor to successful task performance in groups is not tenable and, in terms of practice, (b) team-building interventions that focus on changing the manner of interpersonal interaction in groups are not a viable route to improved task performance effectiveness at work. However, the quality of expressive interaction in groups may still be very important in influencing the attitudinal and affective consequences of being in a group (e.g., liking fellow members, feelings of self-worth because of membership in a group).

Other theoretical views that emphasize the role of the interaction process in the determination of task effectiveness stress the importance of instrumental interactions. For example, the models of Hackman (1987) and Shea and Guzzo (1987a) are of this sort. Still other theories of effectiveness, especially those within the sociotechnical school of thought, explicitly emphasize both aspects of member interaction in explaining effectiveness (as do Homans, 1950; Gladstein, 1984; and Kolodny & Kiggundu, 1980).

The Nature of Group Tasks

Several schools of thought emphasize the nature of tasks groups perform as a factor influencing their effectiveness. Tasks are seen as playing an important role in determining effectiveness in at least three ways: as sources of individual member motivation, as factors moderating the link between member interaction and effectiveness, or as determinants of the instrumental interactions among group members.

Hackman and Oldham (1980) stress the motivating qualities of tasks, asserting that some tasks elicit more effort from group members than others, and that increased effort is likely to result in increased effectiveness. Tasks that elicit high effort are those that require the use of several skills by group members, are meaningful and make a difference to others, provide lots of feedback to group members, and can be performed with autonomy. Thus, the task is seen as a source of motivation for high performance. Sociotechnical perspectives on group performance also point to the design of the task as influencing motivation.

Sociopsychological research in the Steiner (1972) tradition has emphasized task demands as moderators of the payoffs of different methods of combining member input into group products. According to this perspective, for example, a strategy of adding together the inputs of group members working in parallel will be effective for some tasks but not for others, while for still other tasks group success can be attained by any one member acting alone. Simply put, processes of combining inputs must be consonant with task demands for groups to perform effectively.

Tasks as determinants of instrumental interaction within groups is given importance in
the theories of Shea and Guzzo (1987a), Nieva et al. (1978), Kolodny and Kiggundu (1980), Pearce and Ravlin (1987), and Goodman, Ravlin, and Schminke (1987), among others. These theories tend to remain rather abstract in their use of task as a determinant of within-group interaction, not specifying critical features of tasks the way Hackman and Oldham (1980) do when specifying how tasks can have motivational influences on group members. As Goodman et al. (1987) point out, though, a common underlying theme among theorists citing tasks is that degree of uncertainty in tasks is an important feature.

We lack useful typologies of tasks for understanding the group at work in organizations. Although typologies of group tasks have been constructed, they have little applicability to organizational settings because of the simplicity with which they depict tasks. While a considerable amount of work has been devoted to the description of tasks and jobs performed by individuals at work, little headway has been made toward describing group tasks apart from the extension by Hackman and Oldham (1980) of principles of individual job design to group job design.

**Motivational Issues in Groups**

In addition to the task as a source of motivation in groups as addressed by Hackman and Oldham (1980) and the sociotechnical perspective, other schools of thought cite motivational dynamics as important determinants of group effectiveness. Steiner (1972), for example, speaks of motivational deficits that inhibit group productivity. These motivational deficits might arise from too many people in a group or from the lack of individual member accountability. Motivation can be enhanced, according to Steiner, by providing rewards-based group accomplishments. Social loafing as discussed by Latane et al. (1979) also is an example of a motivational deficit that may exist in many groups because of the problem of identifying individual contributions and holding members accountable for them.

Group goals, especially if clear and difficult, also can be motivating, according to Zander (1980). Group goals are the result of overt agreement among group members concerning what they want the group to accomplish. Incentive values of success and failure that energize the behavior of group members are associated with these goals. Motives for group achievement are regarded as separate from individually oriented motives (e.g., personal glory) that might also influence member behavior.

Homans' (1950) work speaks of motivational dynamics in groups in a more diffuse way than most other perspectives. For Homans, all group members have internal states (i.e., sentiments) that give rise to activity and interaction in groups and are subsequently affected by a group's activity and interaction. These sentiments include feelings, drives, and motives. Similarity of sentiments within a group affects how groups adapt to environments and, by implication, how effective groups can be when performing tasks.

Shea and Guzzo (1987a) use the concept of potency to refer to a shared belief among members that their group can effectively carry out its work. They drew on Sayles' (1958) work showing that industrial work groups behaved consistent with their members' beliefs about the group's power. Factors affecting the sense of potential effectiveness, according to Shea and Guzzo (1987a), are such things as the availability of resources within the group and its environment, performance feedback, and the performance history of a group and its organization.

In sum, models of group performance differ in that they regard the motivation to perform effectively as deriving from several possible sources (e.g., task, rewards, goals, feedback). These models agree, however, in highlighting motivation as a central
determinant of effectiveness. The sources of motivation include the design of group tasks, goals, rewards, and a sense of potency shared among group members. It should be recognized that motivation for excellent collective (e.g., group) performance is likely to stem from many sources, some of which are calculative (instrumentality-like) and others which are based on psychological identification with a group and the internalization of group norms (Shamir, 1990).

**Contextual Influence on Group Performance**

A theme prevalent in recent models of work group effectiveness is that a work group’s environment determines its effectiveness. An early expression of this influence is found in Homans (1950), and more recent elaborations of it include Hackman (1987), Nieva et al. (1978), Gladstein (1984), Shea and Guzzo (1987a), Sundstrom et al. (1990), sociotechnical theory (e.g., Cummings, 1978, 1981; Kolodny & Kiggundu, 1980), and intergroup theory (e.g., Alderfer, 1987). For Homans (1950), the survival, and hence effectiveness, of a group is determined by how it adapts its sentiments, activities, and interactions to the demands of its environment. Sociotechnical theorists assert that group effectiveness can be attained when groups are differentiated from their environment and have control over boundary-spanning transactions. The admission of an outsider to the group is an example of a boundary-spanning transaction, as is the acquisition of raw materials. Other models of work group effectiveness assign the environment the role either of conditioning process-output links (e.g., Gladstein, 1984; Hackman, 1987) and/or directly influencing the group and its level of performance (e.g., Nieva et al., 1978; Shea & Guzzo, 1987a).

As noted earlier, newer models of work group effectiveness are far more context-specific than previous models principally derived from sociopsychological investigation. Thus, these models place a heavy emphasis on the nature of the organizational context in depicting the determinants of group effectiveness. Many features of the organization context are cited, such as reward systems (Shea & Guzzo, 1987a), human resource support systems (Hackman, 1987), managerial support (Pearce & Ravlin, 1987), organizational structure (Gladstein, 1984), and leadership (Kolodny & Kiggundu, 1980). Other possible important aspects of organizational environments for groups are discussed by Ancona (1987). Further, some theoretical perspectives (Cummings, 1978; Hackman, 1987; Homans, 1950; Pearce & Ravlin, 1987) attach importance to the degree to which groups can control transactions with their environments as a determinant of effective performance. Thus, organization environments not only impinge on groups, but groups affect their environments.

An interesting analysis of why quality circles, one form of groups in organizations, often disappear after a rather short life in American organizations is that they are not integrated into the organizational system (Ledford, Lawler, & Mohrman, 1988). According to Ledford et al. the average life of quality circles is about 1.5 years. They suggest that quality circles lead a short life and often have low impact because the organizational context does not support them (see also Barrick & Alexander, 1987; Griffin, 1988). For example, reward systems do not recognize quality circle achievement and performance appraisals do not account for quality circle performance. Other types of groups in organizations, such as autonomous work groups, are more thoroughly integrated into and supported by the organizational context, and in such cases a climate for team group effectiveness can be created (Schneider, Brief, & Guzzo, in press).

The emphasis on the environment is a notable departure from earlier theories of group effectiveness and, to some extent, coincides with a deemphasis of expressive interaction among members as a determinant of effectiveness. Further, the practical implications of an
emphasis on environmental influences are straightforward: Improvements in group effectiveness can best be obtained by changing the circumstances in which groups work. Thus, organizational reward systems can be changed to recognize team accomplishments, group and organizational goals must be actively managed to ensure that group and organizational goals are aligned, technical and human resource support systems can be adapted to promote the welfare of work groups, and so on. A diagnosis of the contextual factors facilitating or inhibiting group effectiveness should precede implementing changes in order to identify the specific changes to be made to enhance effectiveness.

A Glimpse Ahead

Many people have chronicled the history of small-group research and theory. Steiner (1974) asked what happened to the small group in sociopsychological research. He argued that research resources were devoted to individual, especially cognitive phenomena, at the expense of small groups as objects of inquiry. Goodstein and Dovico (1979) documented the decline during the 1960s and 1970s in the number of articles published in the Journal of Applied Behavioral Science that concerned groups. Zander (1979) recounts group dynamics research topics by decades from pre-1940 through the 1970s. He, too, found a drought in group research during the 1960s and early 1970s. He also found great stability in the methods used to investigate groups (the sociopsychology experiment being dominant) and in certain topics of study (group pressures on individuals, interpersonal behavior in mixed-motive situations). Zander also noted that few full-blown theories of group dynamics have appeared and that those that have appeared are “long on logic and short on researchability” (p. 280). Interestingly, Zander cited the causes of productivity in groups and the effects of group environments as topics that had received too little research attention to date.

Hackman and Morris (1978) examined developments in group research in the 1970s and ventured predictions about the shape of things to come. They predicted that clinical, idiographic, and ethnographic methods of inquiry would become more prevalent, that models of group decision making would advance in sophistication and applicability, and that teams would increasingly be used by organizations to get work done. These predictions seem to be in the process of being fulfilled, judging from prevailing organizational practices and recent journal articles and books. However, we think other changes in research methods are in the works in addition to the move toward clinical methods predicted by Hackman and Morris. As we stated earlier, we think more research on groups will involve the study of groups in naturally occurring contexts and increasingly will make use of multivariate causal modeling techniques to analyze determinants of group effectiveness. Further, we believe that the laboratory experiment will be increasingly less prevalent as a method of studying group effectiveness. Instead, field experiments of the sort by Pritchard, Jones, Roth, Stuebing, and Ekeberg (1988) and Wall et al. (1986) will become more prevalent. These are examples of studies that investigate theories while at the same time attempt to do some good in organizations being researched, such as raising productivity or enhancing the quality of life at work. In short, we believe that many future studies of work group effectiveness will be done in a way that simultaneously serves theory and practice (Lawler, Mohrman, Mohrman, Ledford, & Cummings, 1985).

Researchers on groups in organizations, we feel, are mounting an alternative paradigm to that which governs sociopsychological researchers interested in groups. Earlier we cited Levine and Moreland’s (1990) words that social psychology had passed the torch of group research on to organizational psychology. We think this is true with respect to effectiveness as
a dependent variable, but not necessarily so with respect to other phenomena, such as influence processes in groups or the perceptual biases toward outgroups. However, we do think that there is a danger of an unfortunate schism developing between social and organizational psychology. This schism is due to the divergence of both substantive focus and methodological practices. Nonorganizational group researchers may concede the issue of effective task performance to organizational researchers interested in groups, and organizational researchers may deem other topics the province of social psychology. As for methods, the psychology experiment continues to dominate small group research in social psychology, while other methods are coming to dominate organizational research on groups. The unfortunate quality of the rift is simply the loss of opportunity to meld data and theory from the two disciplines of psychology and the attendant inefficiencies in the knowledge-generation process and incoherence among theories. Perhaps the one topic area that holds the greatest potential for fruitful exchange between social and organizational researchers is intergroup dynamics. Each camp, though, will have to overcome its own in-group biases in order to collaborate effectively with the other.

What new topics will appear as centers of attention in organizational group effectiveness research? In addition to continued research on contextual influences on team effectiveness, we anticipate the appearance of three other topic areas that will be vigorously examined. One is leadership. The focus here will be on how leaders manage teams versus individuals. The skills and behaviors needed to manage teams effectively will be investigated. Hackman and Walton (1986) have made initial efforts in this direction. Second, the role of computerization and software that permits managers in different locations to act as a group in making decisions will be a topic of major interest in the near future. The focus here will be not so much on managers' reactions to the necessary software or hardware, but rather on how information is communicated, stored, and combined in the service of effective decision making. Finally, we think issues of staffing for effective team performance will be a target of research attention. That is, the identification and selection of individuals best suited for team-based organizations and best suited for membership in particular teams will be increasingly addressed.

References


