

# PROGRESS IN SMALL GROUP RESEARCH

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## INTRODUCTION

Research on small groups (1977-1980) was reviewed for this series by McGrath & Kravitz (1982). Here, we review work done since then. Rather

than selecting a limited set of issues for detailed analysis, we decided to write a more general overview. This decision reflected our view that the field, though quite vigorous, is badly fragmented, as evidenced by the failure of researchers working on related problems to acknowledge one another's work. Ironically, this unfortunate situation is due to one of the strengths of the field, namely its multidisciplinary nature. People who study small groups tend to publish in (and read) different journals, depending on their disciplines. Much of the vitality of the field is thus invisible to those within it, not to mention those outside it.

Because research on intergroup relations has recently been reviewed (Messick & Mackie 1989), we focus on processes that occur within groups. We also exclude such large-group phenomena as organizational behavior, social movements, school desegregation, mob behavior, and community social change. Work on special kinds of small groups (e.g. therapy groups, families, children's groups) is typically excluded because of its limited generalizability. Finally, we do not cover dyadic relationships. Research on such relationships has been reviewed recently by Clark & Reis (1988), and we believe that dyads are very different from larger groups.

We organized relevant work published between 1980 and early 1989 in terms of five basic aspects of small groups—their ecology, composition, structure, internal conflicts, and performance. In the following sections, we review and evaluate this work and offer suggestions for future research. Because of space limits, our citations are representative rather than exhaustive; many relevant studies could not be included.<sup>1</sup>

## THE ECOLOGY OF SMALL GROUPS

Every group occupies some setting, and every setting affects its occupants in some way. As a result, no group can be fully understood unless its setting is analyzed. Analyses of settings reveal a variety of environmental factors, ranging from the physical to the social to the temporal. Most researchers study the physical environments of groups, but some research on their social and temporal environments can also be found. And though most researchers study the effects of environmental factors on groups, attempts by groups to control those factors are sometimes studied as well.

### *Physical Environments*

The physical environments of small groups evoke a great deal of research interest. One popular research area is crowding (see reviews by Baum & Paulus 1987; Paulus & Nagar 1989). The effects of crowding are studied in residential areas, college dormitories, and prisons, as well as laboratory

<sup>1</sup>A longer version of this chapter is available from the authors.

settings. As people feel more crowded, they exhibit greater stress, worse performance (especially on complex tasks), and more negative social relations. These effects are thought to be mediated by several factors, including loss of control, cognitive overload, and behavioral constraints. Research on crowding always involves groups of subjects, yet the effects of crowding are usually measured at the individual level. Some exceptions to this trend can be found in studies of groups that form as an adaptive response to crowding (e.g. Gormley & Aiello 1982; Webb et al 1986). Apparently some groups can protect their members from the effects of crowding by minimizing any loss of control, cognitive overload, or behavioral constraints.

A related area of research involves small groups that work in such "exotic" environments as outer space, underground or underwater, and combat (see Harrison & Connors 1984 for a review). These environments are generally dangerous, impoverished, and confining. Most researchers study how individuals respond to such environments, but some studies of group responses are done as well. These studies show that stronger leadership, increased cohesiveness, and greater conformity pressures are all common among these groups. Groups that work in such environments apparently try to eliminate or control any internal problems so that their external problems can be dealt with more effectively.

Research on exotic environments is often atheoretical, but an influential paper by Staw et al (1981) may help to guide future studies. Staw and his colleagues argue that individuals, groups, and organizations all respond to threat by becoming more "rigid." This rigidity involves a restriction in information processing (e.g. narrower attention, reduced communication), as well as a constriction in control (e.g. reliance on tradition, centralized power). Only a few researchers (e.g. Argote et al 1988; Gladstein & Reilly 1985) have tested these ideas, but their results are promising.

Another area of research on physical environments involves small groups that work in factories or offices (see Sundstrom 1986 for a review). Researchers who study these groups assume that working conditions affect job satisfaction, which in turn affects worker productivity. Such aspects of factories and offices as temperature, lighting, floor space, and noise indeed seem to affect workers (e.g. Oldham & Rotchford 1983). Most researchers focus on individual rather than group reactions to working conditions, despite the fact that work is often performed in small groups. Perhaps judgments about working conditions are made collectively rather than individually. Several theorists (e.g. Salancik & Pfeffer 1978) have argued that social comparison processes influence workers' opinions about whether their jobs are interesting, their salaries are adequate, and so on. It would not be surprising if judgments about the work environment were affected by social comparison processes as well.

The computerization of offices is leading researchers to study the impact of technology on work groups (see reviews by DeSanctis & Gallupe 1987; Kiesler et al 1984). A variety of computer systems are studied, including (a) simple word-processing or accounting programs, (b) complex collaborative writing/editing programs, (c) electronic mail, bulletin boards, or meeting rooms, and (d) group decision support systems. The clearest evidence involves electronic communication, which seems to affect work groups by reducing overall communication, equalizing participation levels, weakening status systems, emphasizing informational rather than normative influence, and encouraging certain forms of deviance (Hiltz et al 1986; McGuire et al 1987; Siegel et al 1986). There is little evidence that electronic communication improves group productivity.

The research discussed thus far focuses on how the physical environment affects small groups. There are also several ways in which a group might control its environment. Many groups, for example, are mobile enough to seek out pleasant environments and avoid unpleasant ones. Some groups can alter their environments to make them more pleasant. Finally, all groups can interpret their environments in ways that make them seem more or less pleasant.

Few researchers study how small groups move into and out of environments, though several observers (e.g. Paulus & Nagar 1989) acknowledge the importance of such behavior. A more popular research area is how small groups try to change their environments. Most of this research involves territoriality (see Taylor 1988 for a review). Research on group territories can be divided into two general categories. Many groups, such as neighborhood groups (Greenbaum & Greenbaum 1981), youth gangs, recreational groups (Smith 1981), and sports teams (Varca 1980), establish territories and then defend them against outsiders. Groups that are more homogeneous, stable, and cohesive, and whose sense of social identity is stronger, are more likely to be territorial. Some groups also apportion their territory among members, usually on the basis of status. Territoriality of this sort can be observed within families (Sebba & Churchman 1983), work groups (Konar et al 1982), and even college classes (Haber 1982).

Territoriality is alleged to serve many purposes for small groups. When a group establishes a territory and then defends it against outsiders, the group can (a) protect valuable resources, (b) improve living/working conditions, (c) gain a sense of privacy, (d) control social interactions, (e) become more cohesive, and (f) express its social identity. When certain members take or are given special areas of a group's territory for their own, they can enjoy some of these same benefits at a more personal level. However, there is no clear evidence that territoriality actually produces any of these benefits for either groups or their members.

Several theorists (e.g. Stokols 1981; Stokols & Shumaker 1981) are beginning to analyze how small groups interpret various aspects of their physical environments. Stokols argues that when a group occupies a place for a long time and conducts many activities there, that place acquires special meanings that are shared among group members. These meanings may be functional, motivational, or evaluative in nature, and can produce "place dependence" and other important consequences. These ideas are intriguing, but largely untested as yet.

### *Social Environments*

Fewer researchers study the social environments of small groups. The most popular research area is clearly intergroup relations. We do not discuss this area in detail, but it is worth noting that research on intergroup relations often reflects two simplistic assumptions. First, many researchers seem to assume that groups relate to one another in a social vacuum. Most studies focus on just two groups, each completely separate from the other. Yet nearly all groups are bound together in some way, because they share members, have developed "weak ties" (cf Granovetter 1973), or are embedded within the same social network. Also, other groups or individuals often intervene in intergroup relations when they believe that their own outcomes can be affected. As a result, intergroup relations are complex, involving many actors related to one another in a variety of ways.

Many researchers also seem to assume that intergroup relations are always competitive, yet there is considerable evidence of cooperation among small groups. Sometimes this cooperation is indirect, as when one group imitates others by importing their procedures (cf Feldman 1984), or uses other groups for the purpose of social comparison (e.g. Levine & Moreland 1987). More direct forms of cooperation are also possible, as when groups exchange valuable resources, form alliances to attain common goals, or merge to form new groups. These and other noncompetitive relations among small groups deserve more research attention.

Another area of research on social environments involves small groups embedded within large organizations. Most of this research focuses on work groups in business corporations (e.g. Alderfer & Smith 1982; Ancona 1987), but some studies on local chapters of social movements can also be found (e.g. Fine & Stoecker 1985; Lofland & Jamison 1984). Organizations provide a setting within which informal groups can grow (e.g. Fontana 1985; Tichy 1981), and the health of a small group often depends on the success of the organization in which it is embedded (Greenhalgh 1983; Krantz 1985); but even a small group embedded within a large organization can try to control its environment. Ancona argues that work groups adapt to corporate settings through such activities as negotiation (bargaining for resources), scanning

(acquiring information), profile management (impressing others), and buffering (defense). She finds that special roles (e.g. ambassador, scout, guard) associated with these activities develop within work groups and that groups performing these activities more effectively are more successful (Ancona & Caldwell 1988).

All groups are embedded within a culture. Some of the variability among groups may thus reflect cultural differences, and some of the changes that groups undergo may reflect cultural trends. Evidence regarding these matters is available (e.g. Mann 1980; Nagao & Davis 1980), but too little is yet known to reach any firm conclusions. Cultural influences on small groups clearly deserve more research attention.

A third area of research on social environments involves small groups that share one or more members. A single person can belong to many different groups. This produces interdependence among those groups, because experiences in one group can affect that person's behavior in all the others. Many examples of this phenomenon can be found in families. Bronfenbrenner (1986) notes that child development, which seems to occur primarily within the family, can also be affected by other groups to which children and their parents belong. Sometimes two groups overlap so much that they are almost inseparable. Family businesses, for example, are both strengthened and weakened by the merging of family and business affairs. As a result, they must evolve special procedures for regulating the boundary between those two worlds (Davis & Stern 1980).

Finally, small groups are often influenced by people who are not actually group members, such as prospective and ex-members (Levine & Moreland 1985), friends and relatives (Stark & Bainbridge 1980), customers or clients (Greer 1983; Jorgensen & Jorgensen 1982), and enemies (Erickson 1981; Reitzes & Diver 1982). The mere presence of such persons can influence a group, as when group members close ranks to confront an enemy. More direct forms of influence are also possible, as when people are recruited into groups by their friends.

### *Temporal Environments*

Research on the temporal environments of small groups is more common, though by no means abundant. The most popular research area is group development. Because most relevant studies focus on therapy, training, or self-analytic groups, we will not discuss them here (for reviews see Lacoursiere 1980 or Moreland & Levine 1988). We believe, however, that several points regarding such research are worth making. First, many studies are difficult to evaluate because they involve qualitative analyses of a few groups (often only one) in which the researcher was an active participant. As a result,

their internal validity can be questioned. Second, the theories that these studies test are not always clear about such issues as the number of stages through which groups develop, the behaviors exhibited by group members during those stages, the rate at which group development occurs, and so on. Even when quantitative data are collected, such theories may be difficult to confirm or disconfirm (cf Cissna 1984), because they can account for almost any pattern of results. Finally, most theorists argue that group development is a recapitulation of the childhood experiences of individual group members. Other factors that might affect group development, such as (a) the beliefs and expectations that current members share about their group (Long 1984), (b) the arrival of new group members or the departure of old ones (Moreland & Levine 1988), and (c) changes in the group's physical or social environment (Gersick 1988), are rarely acknowledged.

One promising trend in research on group development is a recent focus on task-oriented groups (e.g. Gersick 1988; Insko et al 1980, 1982, 1983; Katz 1982). Insko and his colleagues, for example, created small work groups and then changed their composition by periodically replacing "oldtimers" with "newcomers." The groups exhibited marked increases in productivity over time, reflecting the acquisition and transmission by group members of knowledge about the task (cf Argote et al 1990). As time passed, leaders were more likely to emerge in the groups as well, usually because of seniority. Gersick observed a peculiar pattern of development in natural work groups. When given a job to do within specified time limits, group members started to work immediately, without much strategic analysis. But after about half of their allotted time was gone, they paused to make strategic changes and then worked hard to finish the job on time. Finally, Katz found that as work groups grew "older," they often refused or neglected to consult key information sources both inside and outside their organizations. This insularity limited their performance, especially on more complex tasks.

The goal of most research on group development is to learn why and how small groups change over time. It is important to remember, however, that every group operates at some developmental level and that its level of development can affect many other aspects of the group. Moreland & Levine (1988), for example, describe several ways in which the socialization of new members and the resocialization of marginal members might vary among groups at different developmental levels. And several studies (e.g. Greene & Schriesheim 1980) show that the effectiveness of a leader's style depends on a group's developmental level. All of this suggests that researchers should be cautious about interpreting their findings without considering the developmental levels of the groups they are studying.

Another area of research on temporal environments involves group forma-

tion and termination. Several studies of group formation can be found (cf Farrell 1982; Hogg 1987; Wicker & King 1988). In a review and analysis of this area, Moreland (1987) argues that group formation should be viewed as a process of social integration. Several forms of social integration (environmental, behavioral, affective, cognitive) seem to produce small groups; the challenge is to discover how these processes work together to create a particular group. Research on group termination is less common, though several studies can be found (e.g. Greenhalgh 1983; Krantz 1985; Wicker & King 1988). Many of these focus on the emotional consequences of group termination. Sutton & Zald (1985), however, take a somewhat broader approach, arguing that the demise of social systems (e.g. couples, organizations, communities) involves (a) attributional negotiations regarding who is to blame, (b) "disbanding" activities aimed at ending old relationships with fellow group members, and (c) "reconnecting" activities aimed at beginning new relationships with members of the group and/or outsiders. Insofar as these activities proceed smoothly, distress over the termination of a group can be minimized.

A rather new area of research on temporal environments involves the effects of time limits or deadlines on work groups (e.g. Isenberg 1981; Kelly & McGrath 1985; McGrath et al 1984). One particularly interesting phenomenon, discovered by McGrath and his colleagues, is "behavioral entrainment." When a work group is given a specific amount of time to do a job, its members initially adjust their behavior to "fit" whatever time is available to them. If time is scarce, for example, then group members work harder, worry less about the quality of their output (on maximizing tasks), and focus on task rather than social or emotional issues. If more time becomes available, then those workers ought to relax, but in fact they continue to work as though time were still scarce. The practical implications of this phenomenon are considerable and worthy of further investigation.

Although the passage of time affects small groups in many ways, groups are not helpless time travelers. There is some evidence that they try instead to control the passage of time. For example, McGrath & Rotchford (1983) argue that organizations (and presumably the work groups embedded within them) face three general temporal problems: uncertainty, conflicts of interest, and scarcity. They solve these problems through scheduling, synchronization, and allocation (respectively). Subtler approaches to temporal issues can be found in other kinds of groups. Stokols & Jacobi (1984), for example, believe that social groups vary in their "temporal orientations" (traditional, present-focused, futuristic, coordinated) and that the behavior of group members often depends on these orientations. Several researchers (e.g. Jacobi & Stokols 1983) are studying the role that traditions and periodic rituals can play in strengthening small groups.



## THE COMPOSITION OF SMALL GROUPS

Because the members of a small group are its most important resource and events within a group often reflect the people who belong to it, many researchers study the composition of small groups. Some researchers regard group composition as a causal factor, whereas others regard it as a contextual factor or as a consequence. Some researchers focus on the size of a group, whereas others focus on the demographic characteristics, abilities, opinions, or personalities of its members. Finally, researchers measure group composition in several ways. Some prefer measures of central tendency, whereas others prefer measures of variability or study special configurations of group members.

### *Composition as a Cause*

Most researchers regard group composition as a causal factor that can affect many other aspects of group life. One area of relevant research involves the effects of group size. As a group grows larger, it also changes in other ways, generally for the worse. People who belong to larger groups are less satisfied with group membership, participate less often in group activities, and are less likely to cooperate with one another (e.g. Kerr 1989a; Markham et al 1982; Pinto & Crow 1982). There is also more misbehavior in larger groups, perhaps because group members feel more anonymous or are less self-aware (e.g. Latane 1981; Prentice-Dunn & Rogers 1989). Finally, although larger groups are potentially more productive, coordination problems and motivation losses often prevent them from achieving that potential (e.g. Albanese & Van Fleet 1985; Gooding & Wagner 1985; Harkins & Szymanski 1987).

Another area of research involves the demographic characteristics of group members, such as age and sex. Pfeffer (1983), for example, argues that variability in age can create conflict within work groups, because differences in training and experience lead workers of different ages to disagree with one another about their jobs. Turnover is indeed greater in work groups whose members vary more widely in age (e.g. Wagner et al 1984). Reviewing the results of many studies comparing the performance of male and female groups, Wood (1985) found that male groups generally perform better than female groups. She claimed, however, that a group's success really depends on how well the interaction style of its members fits the requirements of their task. Male groups should thus do better when agentic activities (e.g. giving opinions and suggestions) are required, whereas female groups should do better when communal activities (e.g. being friendly and agreeing with others) are required (cf Wood et al 1985).

The abilities of group members are the focus of many studies on the effects of group composition (e.g. Bantel & Jackson 1989; Tziner & Eden 1985).

Most of these studies reflect a pragmatic desire to create successful groups by selecting people who can work together productively (cf Foushee 1984; Harrison & Connors 1984). Tziner & Eden, for example, studied the effects of soldiers' ability levels on their performance in tank crews. Every crew contained three soldiers, who were either high or low in general ability. The results revealed that the more high-ability soldiers a crew contained, the better it performed. There were some interesting interactive effects of ability on performance as well. For example, crews whose members were all high in ability performed better than expected, whereas crews whose members were all low in ability performed worse than expected.

Research on the effects of group composition also focuses on the opinions of group members. There is considerable evidence, for example, that the distribution of opinions among group members can influence their decision-making, especially when certain social decision schemes are used (see Stasser et al 1989a for a review). There is also some recent interest in "scientific jury selection," a procedure that lawyers can use to saturate juries with people who favor their positions. Although this procedure raises some controversial legal and ethical issues, only a few studies of scientific jury selection can be found (e.g. Patterson 1986), and their results suggest that its impact on jury decision-making may be weak.

Finally, some research on the effects of group composition involves the personalities of group members (e.g. DeBiasio 1986; Driskell et al 1987). Research of this sort is especially popular among clinical psychologists, who want to create more effective therapy groups by selecting clients with particular disorders (cf Erickson, 1986). Some therapists favor homogeneous therapy groups, which engender feelings of warmth and acceptance that many clients need. Other therapists favor heterogeneous groups, which engender conflicts that (though painful) often produce personal growth in clients. Unfortunately, the available research evidence does not reveal which kinds of therapy groups are best.

Research on the effects of group composition is often atheoretical, but some theoretical development is under way. Mullen (1983, 1987), for example, argues that the proportion of group members who possess a particular characteristic (of any sort) is a key factor in producing many compositional effects. As that proportion grows smaller, each person who possesses the characteristic becomes increasingly self-aware. That awareness leads the person to compare his or her current behavior with salient behavioral standards. If the results of those comparisons are negative (as they often are), then the prospects for significant self-improvement are assessed. When those prospects seem good, the person tries harder to match the behavioral standards, but when those prospects seem poor, the person withdraws from the

situation. Mullen and his colleagues use this theory to reanalyze the results of previous research on many topics, such as productivity in work groups (Mullen & Baumeister 1987).

### *Composition as a Context*

Some researchers regard the composition of a small group as a social context within which other psychological phenomena unfold. Group composition moderates those phenomena, rather than causing them directly. Schragger (1986) studied the effects of academic ability on the college grades of freshmen living in various group settings (e.g. fraternity houses, residence halls). Although these effects were generally positive, their strength varied with the social climates of the groups. The more emphasis a group placed on traditional academic values, the more impact a student's academic ability had on his or her college grades. Wright et al (1986) studied the behavioral determinants of popularity in children's peer groups. They found that popularity often depends on the match between a child's own behavior and the behavior of his or her peers. Aggressive children, for instance, were very unpopular in groups where aggression was rare, but not in groups where aggression was common. Finally, several studies show that the effectiveness of various leadership styles depends on the characteristics of followers (e.g. Schriesheim 1980). And Simonton (1985) offers some intriguing analyses of how the relative intelligence of leaders (compared to their followers) can affect the amount and type of influence they exert.

Contextual effects may play an important role in the behavior of males and females in mixed-sex groups. Several reviews of this area are available (e.g. Anderson & Blanchard 1982; Dion 1985; Eagly 1987; Martin & Shanahan 1983). The sex differences observed in such groups are generally weak (e.g. Mabry 1985), can be eliminated or even reversed by situational factors (e.g. Wood & Karten 1986), and may have more to do with gender than with sex (e.g. Porter et al 1985). Nevertheless, the available evidence suggests that in mixed-sex groups, males are (a) more active and influential than females, (b) more likely than females to engage in agentic activities, but less likely to engage in communal activities, and (c) more concerned than females about resolving issues of status, power, and wealth.

It may seem odd to claim that sexual heterogeneity in small groups is a contextual rather than a causal factor in social behavior. Yet most researchers believe that membership in a mixed-sex group simply reminds people of their conventional sex roles, which in turn leads them to adopt those roles, either through personal choice or through processes of behavior confirmation. As the proportions of males and females in a group diverge, sex roles should become even more salient, thereby strengthening sex differences in social

behavior (cf. Mullen 1983). Many researchers, intrigued by the work of Kanter (1977), study groups containing a single "token" member. Kanter claimed that token females experience a variety of problems in work groups, ranging from social isolation to role entrapment to powerlessness. Several studies seem to support her claims (e.g. Izraeli 1983; Lord & Saenz 1985; South et al 1982), but the level of support is sometimes weak. A few studies indicate that token males do not experience the same problems as token females (e.g. Craig & Sherif 1986; Crocker & McGraw 1984). Also, token females who have higher status in the group (e.g. Fairhurst & Snavely 1983), or who adopt certain behavioral styles toward males (e.g. Ridgeway 1982), are less likely to experience the problems that Kanter described.

For some psychologists, the contextual effects of group composition are a potentially confounding factor that must be eliminated or controlled by procedural or analytical means. These attitudes are changing, however, as papers appear describing how studies of small groups can be designed to allow contextual effects to emerge (e.g. Rousseau 1985) and how the results of those studies can be analyzed to reveal the nature and extent of those effects (e.g. Blalock 1984; Kenny 1985). As research on group composition becomes more sophisticated, contextual effects are likely to be more appreciated.

### *Composition as a Consequence*

A few researchers regard the composition of a small group as the product of other factors. Their work focuses, of course, on natural groups, whose composition can vary more or less freely. Studies on the sizes of natural groups suggest that people strongly prefer smaller groups. Burgess (1984), for example, observed casual groups of people at shopping malls, airports, amusement parks, and so on. No groups containing more than seven persons were observed, and about 90% of the groups were either dyads or triads. McPherson (1983) surveyed people about the voluntary associations to which they belonged. Groups of this sort were much larger, some containing several hundred members, but about 70% of the groups contained fewer than ten members, and less formal groups tended to be smaller. Why people prefer smaller groups is unclear. Burgess suggests that small groups maximize the advantages of group membership for inclusive fitness, whereas McPherson suggests that competition among groups for members of different types constrains how large those groups can become. As we noted earlier, larger groups also suffer from many problems that might lead people to avoid them.

Natural groups can also vary in the characteristics of their members. Many studies show that people who belong to the same group generally resemble one another (e.g. Magaro & Ashbrook 1985; McPherson & Smith-Lovin 1986). This homogeneity, which may involve any characteristic, can be attributed in part to the process of group formation. Groups usually form

among similar people (e.g. Feld 1982; Fontana 1985), but other processes can contribute to homogeneity among group members as well. These processes include the entry and subsequent socialization of new group members and the resocialization and subsequent exit of marginal group members.

Entry into most small groups depends on the motivation of the person and the group. People are often drawn to groups whose members seem similar to themselves (e.g. Royal & Golden 1981), and groups are often drawn to people who seem similar to their members. In fact, many groups recruit new members primarily through social networks of friends and relatives (e.g. Stark & Bainbridge 1980). The level of homogeneity within a group clearly increases when entry decisions (by either party) are based on interpersonal similarities. Once someone enters a group, the process of socialization begins (e.g. Cushman 1986; Vaught & Smith 1980). Attempts are made by newcomers and oldtimers to alter one another in ways that make them more compatible. Successful socialization often increases homogeneity within the group even further.

Although group members may be similar in many ways, their relationships can become strained. When conflicts arise and cannot be easily resolved, the process of resocialization begins (e.g. Levine 1989). Full and marginal members of the group attempt to alter one another in ways that will restore their compatibility. Successful resocialization helps to preserve group homogeneity, but if resocialization fails, then marginal members leave the group. Exit from most small groups depends on a person's motivation to quit the group and the group's motivation to eject him or her. People are often repelled by groups whose members seem different from themselves (e.g. Bouma 1980), and groups are often repelled by people who seem different from other members (e.g. Brinkerhoff & Burke 1980). Once again, the level of homogeneity within a group increases when exit decisions (by either party) are based on interpersonal differences.

Researchers who study such processes as entry, socialization, resocialization, and exit in small groups often work in isolation from one another. However, a general model of group socialization proposed recently by Moreland & Levine (1982, 1984, 1989) may help to integrate their work. The model explains temporal changes in individual-group relations in terms of three basic processes—evaluation, commitment, and role transition. According to the model, the group and each of its members engage in an ongoing evaluation of the rewardingness of their own and alternative relationships. On the basis of these evaluations, feelings of mutual commitment arise. These feelings change in systematic ways over time, rising or falling to previously established decision criteria. When a decision criterion is crossed, a role transition takes place, the person enters a new phase of group membership, and the relationship between the group and the person changes. Evaluation

proceeds, along different dimensions, producing further changes in commitment and other role transitions. Moreland & Levine use their model to explore several aspects of small groups, including group development (Moreland & Levine 1988) and innovation (Levine & Moreland 1985). There have been few empirical tests of the model as yet, but the results so far (e.g. Moreland 1985; Pavelchak et al 1986) seem promising.

## THE STRUCTURE OF SMALL GROUPS

In order to achieve their common goals, the members of a small group must establish and maintain productive interpersonal relationships. The structure of a group is the pattern of relationships that emerges among its members. Many aspects of group structure can be studied, but most researchers focus on status systems, norms, roles, or cohesion. Although researchers who study different aspects of group structure seldom collaborate, they often struggle with the same issues, such as (a) the proper conceptualization and/or measurement of group structure, (b) the psychological processes that produce group structure, and (c) the effects of structure on a group and its members.

### *Status Systems*

Status systems reflect the general pattern of social influence among group members. Several methods for measuring status are available. Some researchers observe the nonverbal behavior of group members (e.g. Harper 1985). People with higher status are more likely than others to stand up straight, maintain eye contact, speak in a firm voice with few hesitations, and be physically intrusive. Other researchers record group members' verbal behavior (e.g. Skvoretz 1988; Weisfeld & Weisfeld 1984). People with higher status speak more often than others, are more likely to criticize, command, or interrupt others, and are spoken to more often than others. Status is sometimes measured by asking group members who is more popular, seems more capable, or has more influence on the group (e.g. Ridgeway 1981; Strodtbeck & Lipinski 1985). Finally, a few researchers assess how much influence group members actually exert on one another (e.g. Bottger 1984; Ridgeway 1987). As most of these methods suggest, status is generally treated as an individual rather than a group characteristic.

A major issue is how status systems are produced within small groups. Status was once viewed as a reward that people earned by helping a group to achieve its goals, making personal sacrifices on behalf of the group, or conforming to group norms. These behaviors are indeed important sources of status (e.g. Bottger 1984; Insko et al 1982; Weisfeld & Weisfeld 1984), but there is also some evidence that status systems develop very quickly, perhaps within minutes after most groups are formed (e.g. Barchas & Fisek 1984). It

seems unlikely that people could earn status (by whatever means) in so little time, so other psychological processes must be capable of producing status systems. Apparently, these alternative processes require little or no interaction among group members.

There are two major theoretical explanations for the rapid development of status systems within small groups. The "expectation states" theorists (e.g. Berger et al 1980) argue that group members, soon after meeting one another, form expectations about each person's probable contributions to the achievement of group goals. These expectations are based on personal characteristics that people purposely reveal to one another (e.g. intelligence, training) or that are readily apparent (e.g. sex, age). Personal characteristics more relevant to the achievement of group goals have more impact on expectations, but even irrelevant ones are evaluated. People who possess more valuable characteristics evoke more positive expectations and are thus assigned higher status in the group. Initial status assignments can be modified as actual contributions to the achievement of group goals are observed and evaluated, but people whose initial status assignments are unfairly low often have trouble proving their worth to other group members later on (e.g. Ridgeway 1982).

A second explanation for the rapid development of status systems within small groups is offered by "ethological" theorists (e.g. Mazur 1985) who argue that group members, soon after meeting one another, assess the strength of each person by evaluating his or her appearance and demeanor. These evaluations are based on a variety of personal characteristics, including size, musculature, and facial expression. People who seem especially weak or strong are assigned low or high status (respectively) at once; everyone else engages in brief dominance "contests." These contests, which are often quite subtle (e.g. staring at someone until he or she looks away), produce "winners" and "losers" who are assigned status accordingly. Again, initial status assignments can be modified as time passes and further information about group members becomes available.

The views of both expectation-states theorists (Berger & Zelditch 1985) and of ethological theorists (Dovidio & Ellyson 1985; Keating 1985) have received empirical support. Which group of theorists, then, offers the "best" explanation for the development of status systems? An initial study by Lee & Ofshe (1981) claimed a victory for the ethological theorists, but that claim evoked considerable controversy and led other researchers to perform similar studies (e.g. Mohr 1986; Tuzlak & Moore 1984). Most of these researchers claimed victories for the expectation-states theorists. The whole debate is far from settled, though a recent attempt by Ridgeway (1984) to integrate the two theoretical perspectives seems promising and has some empirical support (Ridgeway 1987).

Many researchers who study status systems are intrigued by their possible

effects. For example, a person's status often affects his or her relations with other group members. People with higher status have more opportunities to exert social influence, try to influence other group members more often, and are indeed more influential than people with lower status (e.g. Gray et al 1982; Skvoretz 1988; Weisfeld & Weisfeld 1984). A person's status can also affect how he or she is evaluated by others. Even when they behave in similar ways, people with higher status are often evaluated more positively than people with lower status (e.g. Humphrey 1985; Sande et al 1986). Finally, a person's status can affect his or her self-evaluations. People with higher status often have more self-esteem than people with lower status (e.g. Moore 1985; Sande et al 1986). It is noteworthy that the effects of status systems are usually studied at the individual rather than the group level, even though such systems are supposedly adaptive for small groups.

### *Norms*

Norms are shared expectations about how the members of a group ought to behave. A group's norms can be measured in a variety of ways. By simply observing the behavior of group members, researchers can often make inferences about that group's norms (e.g. Graves et al 1982; Watson 1982). Behavioral regularities are interpreted as conformity to group norms, whereas behavioral irregularities (especially when they evoke strong reactions) are interpreted as deviance from those norms. Another, more popular method is to ask a group's members to describe its norms (e.g. Argote 1989; Henderson & Argyle 1986). Although people may disagree about group norms, recent analyses (e.g. Jacobsen & Van der Voordt 1980; Rossi & Berk 1985) suggest that the patterns of consensus and dissensus among group members can be meaningful. Finally, the most common method is to ask each member of a group about his or her personal expectations for the behavior of others (e.g. McKirnan 1984; O'Reilly & Caldwell 1985). These responses are then aggregated, using procedures developed by Jackson (1965), McKirnan (1980), and others, to produce statistical indices that capture many important aspects of the group's norms. As most of these methods suggest, norms are generally treated as group rather than individual characteristics.

Research on group norms often takes place in laboratory settings. Some researchers who study laboratory groups are interested in allocation norms (see Komorita 1984b for a review). Several norms of this sort (e.g. equity, equality, needs) can be identified, and much is known about both their causes and effects. Other laboratory researchers are interested in decision-making norms (see Miller 1989 for a review). Several norms of this sort (e.g. unanimity, majority rules) can be identified as well, and though their causes are not yet clear, much is known about their effects. Researchers who study groups in natural settings find a wide variety of norms there, some of which



emerge in nearly every group. These generic norms involve (a) sharing the rewards or costs of group membership, (b) preventing conflicts among group members, (c) regulating contacts with outsiders, and (d) expressing a group's core values.

How are norms produced within small groups? Several theoretical perspectives regarding this issue can be found (e.g. Bettenhausen & Murnighan 1985; Feldman 1984; Opp 1982). Feldman, for example, argues that the initial patterns of behavior in a group often solidify into norms. Norms can also be imported from the surrounding social environment, mandated by a group's leader, or created in response to critical events in a group's history. Opp argues that norms can arise through institutional, voluntary, or evolutionary processes. Institutional norms are mandated by a group's leader or by external authorities. Voluntary norms are negotiated among group members, often in order to resolve conflict. Evolutionary norms arise when behaviors that satisfy one person are learned by others, causing them to spread throughout a group. The resulting pattern of behavior generates expectations, at first about how people are likely to behave and then later about how people ought to behave. Finally, Bettenhausen & Murnighan argue that norms arise through cognitive processes. People bring to a group scripts that specify proper behavior in various situations. These scripts are activated whenever someone classifies a new situation as similar to others that he or she has already encountered. The speed with which norms develop and the amount of negotiation they require depend on the extent to which group members share scripts and classify situations in the same way.

Studies of the effects of norms on groups and their members usually focus on conformity and deviance (see below), but there is also some research on how norms affect group performance. Obviously, performance is enhanced when the norms within a group regarding effort, efficiency, quality control, and so on are positive rather than negative, but even positive work norms are not enough to guarantee success. Several studies suggest that the intensity of those norms, the level of normative consensus among group members, and the group's cohesion may all be important factors as well (e.g. Argote 1989; O'Reilly & Caldwell 1985).

## *Roles*

Roles are shared expectations about how a particular person in a group ought to behave. There are several ways in which roles can be measured. Some researchers study formal roles (e.g. therapist, foreman, team captain) or informal roles with objective referents (e.g. newcomer, parent). Measurement issues scarcely arise in these studies. Most researchers, however, study informal roles that are more subjective. One method for measuring these roles is to observe group members, searching for people who exhibit idiosyncratic

patterns of behavior (e.g. Eagle & Newton 1981). Zurcher (1983) offers some excellent suggestions for field studies of roles, and the development of SYMLOG (cf Isenberg & Ennis 1981) allows observers to measure the roles of any group on the same general dimensions (friendly/unfriendly, dominant/submissive, instrumental/expressive). Another method is to ask people to describe the roles in their group and to identify who plays them (e.g. Ancona & Caldwell 1988; Rees & Segal 1984). Often special informants (leaders) are used for this purpose, thereby avoiding problems posed by disagreements among group members about their roles. Finally, the most common method is to ask each group member to describe the role(s) he or she plays (e.g. Jackson & Schuler 1985). These descriptions are usually taken at face value; corroboration from other group members is seldom obtained. As most of these methods suggest, roles are generally treated as individual rather than group characteristics.

A few roles can be found in nearly all groups, and these are especially interesting to researchers. One common role is that of leader. We will discuss leadership in more detail below, but it is worth noting here that group members often share prototypes of the ideal leader, and their evaluations of a leader can depend on the prototypicality of his or her behavior (Lord 1985). Another role that can be found in most groups, at one time or another, is that of newcomer. Moreland & Levine (1989) argue that newcomers are expected to be anxious, passive, dependent, and conforming, and that those who play this role more effectively are more likely to be accepted by oldtimers. Several researchers are interested in how newcomers cope with their difficult situation (see Moreland & Levine 1989 for a review). A final example of a common role is that of scapegoat. Socioanalytic theorists (e.g. Wells 1980) argue that group members are often unable to integrate their positive and negative qualities into coherent and/or acceptable self-images. To resolve these internal conflicts, they project their negative qualities onto a scapegoat. The scapegoat thus provides a valuable service for the group—a service that no one in the group may fully understand.

Much research on roles involves the special conflicts they can create for groups and their members. Some of these conflicts arise from the process of role assignment, when decisions are made about who should play which roles. Moreland & Levine (1982) describe some of the tactics that group members use to maneuver themselves and one another into (or out of) various roles. Once someone begins to play a role, other conflicts can arise. A person may lack the knowledge, ability, or motivation to play a role effectively, or discover that it is inconsistent with roles he or she already plays. Group members may also disagree about how a role should be played or who should play it. Studies of role conflicts in work groups (see Jackson & Schuler 1985 for a recent review) reveal increased tension and decreased productivity

within such groups whenever role conflicts arise. Role conflicts can sometimes be resolved by changing a role in suitable ways. Such role innovation depends on several factors, including the self-confidence of the person playing the role, the level of consensus among other group members about how the role should be played, and the importance of the role for the group (cf Brett 1984; Nicholson 1984). Finally, role transitions are often a source of conflict for groups and their members. Moreland & Levine (1984) describe and suggest solutions to some of the problems that arise as people move from one role to another. And there are many studies of job changes, which involve role transitions within the same work group or between work groups of the same sort (cf Brett, 1984).

Little is known about the psychological processes that produce roles within small groups, although some speculation can be found (e.g. Diamond & Allcorn 1986). Researchers are more interested in the effects of roles, but most of their work involves the impact of role-playing on mental health and the incorporation of roles into the self-concepts of those who play them. Few researchers study the effects of roles on a group, though there is some evidence that role differentiation is associated with improved group performance (e.g. Roger & Reid 1982).

### *Cohesion*

Finally, many researchers who study the structure of small groups focus on cohesion. Most of their work involves military units, sports teams, or therapy groups, and is aimed at making those groups more successful by strengthening their cohesion. The main issue for these researchers is how the cohesion of a group should be conceptualized and/or measured. Unfortunately, there is much confusion regarding that issue (cf Drescher et al 1985; Evans & Jarvis 1980). Some of this confusion arises from the fact that cohesion is studied under different guises, including "solidarity," "morale," "climate," and "sense of community." Another source of confusion is that cohesion itself appears to be a complex construct. Several factor analyses of cohesion measures can be found (e.g. Carron et al 1985; Gal & Manning 1987; Stokes 1983). The results of these analyses vary considerably from one study to another but generally reveal a variety of factors. Finally, confusion about cohesion often arises because the same phenomenon (e.g. self-disclosure) can be regarded as a cause for, an effect of, or a measure of cohesion.

Researchers use many different methods for measuring cohesion. A few try to measure cohesion by observing the nonverbal behavior of group members (e.g. Piper et al 1983; Tickle-Degen & Rosenthal 1987). Members of cohesive groups are more likely than others to stand or sit close together, focus their attention on one another, show signs of mutual affection, and display coordinated patterns of behavior. Some researchers also record the verbal

behavior of group members (e.g. Eder 1988; Owen 1985). Members of cohesive groups are more likely than others to participate actively in conversations, engage in self-disclosure or collaborative narration, and develop a special argot. A more common (and traditional) method for measuring cohesion is to ask people to evaluate one another and/or their group. Their responses are then aggregated to produce a single index of cohesion (e.g. Keller 1986; Manning & Fullerton 1988). A final method is to transform cohesion into a kind of commitment. Several researchers (e.g. Carron et al 1985) now measure cohesion by asking people to describe their personal feelings about a group and its members. Their responses are not aggregated, but are simply used as predictors of personal behavior. This method clearly differs from the others by leading researchers to treat cohesion as an individual rather than a group characteristic.

How is cohesion produced in small groups? Several factors may be important. First, simply assembling people into a group is enough to produce some cohesion (Hogg 1987), and the more time people spend together, the stronger their cohesion becomes (e.g. Manning & Fullerton 1988). Second, cohesion is stronger in groups whose members like one another (e.g. Piper et al 1983; Stokes 1983). Anything that produces such liking (e.g. propinquity, competence, real or perceived similarity) can thus strengthen group cohesion. Third, groups that people find more rewarding tend to have stronger cohesion (e.g. Ruder & Gill 1982; Stokes 1983). A group can be rewarding because people enjoy its activities, approve of its goals, or believe that membership will be useful to them in other contexts. Groups are naturally more rewarding when they succeed rather than fail, though some groups can preserve (if not strengthen) their cohesion even when they fail (e.g. Brawley et al 1987). Finally, leaders can often strengthen group cohesion by encouraging feelings of warmth and acceptance among followers, or simply by serving as targets for projective identification (e.g. Piper et al 1983; Smith 1983).

Cohesion can have many effects on a group and its members. One helpful effect of cohesion is that a group becomes easier to maintain—members of cohesive groups are more likely than others to participate in group activities, stay in the group themselves and convince others to join, and resist attempts to disrupt the group (e.g. Brawley et al 1988; Carron et al 1988). Cohesion also increases conformity to group norms (e.g. O'Reilly & Caldwell 1985; Rutkowski et al 1983). This effect can be helpful when deviance endangers the group, or harmful when innovation is required. Janis (1982), for example, claims that “groupthink” often arises when highly cohesive groups place too much emphasis on conformity. Although the evidence supporting this claim is weak (cf McCauley 1989), it is clear that conformity pressures within cohesive groups could become harmful.

Many studies suggest that cohesion affects group performance (e.g. Keller

1986; Miesing & Preble 1985). However, most of these studies involve correlational rather than experimental designs, making it difficult to ascertain whether (a) cohesion improves performance, (b) successful performance strengthens cohesion, or (c) both effects occur. A few studies involving causal modeling of the relationship between cohesion and performance are available (e.g. Landers et al 1982; Williams & Hacker 1982), but their results are inconclusive. When cohesion is manipulated experimentally, its effects on performance can be interpreted more clearly. These effects are complex; they depend on such factors as the abilities of group members (Tziner & Vardi 1983), the leader's style (Tziner & Vardi 1982), the type of task the group is performing (e.g. Carron & Chelladurai 1981; Zaccaro & McCoy 1988), or which aspect of group cohesion is assessed.

## CONFLICTS WITHIN SMALL GROUPS

Conflict arises when group members believe that their goals cannot be achieved simultaneously (Pruitt & Rubin 1986). Conflict can involve many issues, including the distribution of physical resources, access to information, and the power to make decisions. Although conflict sometimes fosters innovation and thereby enhances individual and group welfare (Levine & Moreland 1985; Nemeth & Staw 1989), it often has serious negative consequences, including interpersonal hostility, reduced performance, and even group dissolution. Group members thus devote considerable time and energy to controlling whatever conflict occurs.

### *Social Dilemmas*

An important form of conflict occurs when individual group members engage in behavior that would have negative consequences if everyone engaged in it. These social dilemmas can be either "collective traps" or "collective fences." In traps, behaviors that are rewarding to individuals yield negative outcomes when exhibited by enough people. In fences, behaviors that are costly to individuals yield negative outcomes when avoided by enough people. Both collective traps and fences may involve temporal delay between positive and negative consequences. Several paradigms are used to investigate behavior in social dilemmas. Four of the most important are N-person prisoner's dilemma (NPD) games, replenishable resource traps, public goods provisions, and delay fences, in which the group's goal is to maintain, rather than provide, a public good (Messick & Brewer 1983).

Research on social dilemmas is done by investigators from several disciplines, including social psychology, political science, sociology, and economics. Several reviews of the psychological research can be found (e.g. Messick & Brewer 1983; Orbell & Dawes 1981). Two classes of solutions to

social dilemmas are commonly distinguished. Individual solutions involve changing the behaviors of individual group members, whereas structural solutions involve removing the dilemma through group action. Although this distinction is useful, it is not always clear why a particular variable (e.g. opportunity for communication) belongs in one category (individual) rather than the other (structural).

Research on individual solutions suggests that group members' social values and motives influence their behavior in dilemma situations (e.g. Liebrand 1986). Rapoport's work on the provision of step-level public goods also treats altruism and other social values as potentially important determinants of behavior (e.g. Rapoport 1987). The effects of culture and gender on dilemma behavior are investigated by some researchers as well (e.g. Stockard et al 1988; Yamagishi 1988).

Communication among group members can increase cooperation in social dilemmas (e.g. Orbell et al 1988). Dawes and his colleagues believe that discussion facilitates cooperation by promoting group identity and/or providing an opportunity for members to make promises that they will cooperate (though these promises are only binding if everyone makes them). Caporael et al (1989) bolster their group identity explanation of dilemma behavior by citing evidence against egoistic incentive explanations. The notion that group identity can facilitate cooperation in dilemmas is consistent with work by other investigators (e.g. Kramer & Brewer 1986).

Finally, in a series of studies using resource dilemmas, Messick and his colleagues identified three factors that affect group members' harvest decisions, which represent an individual-level solution to a dilemma. These factors are a desire to accumulate the resource (i.e. self-interest), a desire to use the resource responsibly, and a desire to conform to an implicit group norm (e.g. Samuelson & Messick 1986; Samuelson et al 1986).

Research on structural solutions to dilemmas focuses on the impact of such variables as the payoff system (e.g. Dawes et al 1986), how cooperative and competitive decisions are framed (e.g. Rutte et al 1987), group size (e.g. Kerr 1989a), and social norms (e.g. Kerr 1989b). In his social-dilemma analysis of motivational losses in work groups, Kerr suggests several structural solutions to this type of social fence (Kerr 1986).

When will group members give up individual control over resources in favor of structural solutions involving collective action (e.g. privatization of resources, election of a powerful leader, development of a punishment system)? Messick and his colleagues find that structural solutions are preferred when the group is inefficient in dealing with the common resource and free access to the resource produces large inequities in members' outcomes (e.g. Samuelson & Messick 1986; Samuelson et al 1986). Yamagishi (1986) offers a "structural goal/expectation" theory, which assumes that structural solutions

to dilemmas are adopted when group members develop the goal of mutual cooperation, understand the effectiveness of structural solutions, and realize the difficulty of attaining this goal through elementary cooperation alone (e.g. Yamagishi 1988).

Social-dilemma studies, which ostensibly pit self-interest against group interest, generally involve rather pallid groups. For example, group members are strangers, role and status structures are not allowed to develop, the group is expected to exist for only a short period, and all members have equal wealth and power. Although shortcomings of the typical social-dilemma paradigm are recognized (e.g. Messick & Brewer 1983; Yamagishi 1986), investigators rarely make serious efforts to eliminate them. The failure to devote more attention to power differences among group members is particularly interesting, since a common structural solution to dilemmas is the appointment of a powerful leader who makes allocation decisions for the group.

### *Power*

Power involves the ability to influence or control other people. The possession of power clearly allows people to resolve conflicts to their own advantage, but it can have other effects as well. According to Shaw (1981), compared to low-power group members, those with high power exert more control over group activities, are better liked, receive more deferential behavior, and are more attracted to the group. The exercise of power can also affect a member's tension level (e.g. Fodor 1985) as well as his or her self-evaluations and evaluations of others (Kipnis 1984).

Several studies focus on the tactics that group members use in attempting to influence one another. In some studies, the behavior of group members is observed during interaction (or simulated interaction) with subordinates, peers, and/or superiors (e.g. Instone et al 1983; Steckler & Rosenthal 1985). In other studies, group members are asked to describe the influence tactics they employ (e.g. Kipnis & Schmidt 1983). The relative status of group members affects the influence tactics they use as well as their overall motivation to exert control (e.g. Ford & Zelditch 1988). Finally, some studies focus on how group members respond to others' exercise of power (e.g. Podsakoff & Schriesheim 1985).

Various theoretical perspectives on the distribution of power are available (e.g. Cobb 1984). Those based on Emerson's power-dependence theory are the most prevalent (Cook 1987). The basic idea of Emerson's theory is that the power of A over B is equal to B's dependence upon A, which varies positively with the value of the resource that A provides for B and negatively with the availability of this resource outside the A-B relationship. The theory also asserts that power imbalance produces asymmetrical exchange between actors, which moves toward an equilibrium. One set of studies focuses on

power use in dyads (e.g. Molm 1987), while another involves larger exchange networks, which are viewed as sets of linked dyadic relationships (e.g. Cook et al 1983). The power-dependence perspective helps us to understand several aspects of group process, including bargaining (e.g. Bacharach & Lawler 1981; Hegtvædt & Cook 1987) and coalition formation (e.g. Cook & Gillmore 1984).

### *Bargaining*

Bargaining situations run the gamut from simple to complex. In the simplest case, two persons are not allowed to communicate with one another and receive payoffs based on their independent choices to cooperate or defect. In the most complex case, several persons are allowed to communicate freely and receive payoffs based on their joint agreements. We do not review research on two-person bargaining unless the impact of the larger social environment is explicit. Several excellent discussions of "pure" two-party bargaining are available (e.g. McClintock et al 1983; Pruitt 1981; Pruitt & Rubin 1986).

Two areas of research on dyadic bargaining involve the effects of third parties on participants' behavior. One research area concerns representative bargaining, in which each bargainer represents the interests of constituents. McGrath (1984) provides a typology of different relationships between representatives and their constituents, noting, for example, that a representative may or may not be a member of his or her own constituency. Carnevale (1985), who studies representatives belonging to their constituent groups, distinguishes between feeling responsible for representing the constituency, feeling accountable for the outcome of representation, and feeling under surveillance for both the process and outcome of representation. He finds that surveillance and accountability produce different effects and that the impact of accountability is mediated by such factors as the competitive/noncompetitive definition of the situation and the representative's relationship with his or her constituency (e.g. Ben Yoav & Pruitt 1984). Recent research by Insko and his colleagues on individual versus group competition is also relevant to representative bargaining (Insko et al 1987). A second research area concerns the role of outsiders (e.g. mediators, arbitrators, fact finders) who try to reduce conflict between bargainers. Studies on this topic investigate third-party intervention in diverse contexts, ranging from disagreements between college students in the laboratory to disputes between heads of state (e.g. Rubin 1981; Welton & Pruitt 1987).

Several useful analyses of third-party intervention are available (e.g. Carnevale 1986). The work of Rubin & Pruitt (Pruitt & Rubin 1986; Rubin 1981) is particularly helpful. They differentiate third-party roles on several dimensions (e.g. formal vs informal, invited vs noninvited, impartial vs partial)



and discuss three tactics that third parties can use to intervene successfully: modifying the physical and social structure of the conflict, changing the issue structure, and increasing the motivation of bargainers to reach agreement. Finally, Rubin & Pruitt emphasize that third parties do not always facilitate conflict resolution and sometimes unintentionally exacerbate conflict (e.g. by forming a coalition with one of the bargainers or suggesting inadequate solutions). Third parties also occasionally seek to create conflict they assume might be useful (e.g. van de Vliert 1985).

Research on bargaining is sometimes done in group (as opposed to strictly dyadic) settings. Some of this research concerns organizations, where the larger social context influences what happens between the bargainers (e.g. Lewicki et al 1986). An important issue in organizational (as well as other) settings is the impact of bargainers' concerns about justice and fairness on their use of power and reactions to various allocation schemes (e.g. Hegtvedt & Cook 1987). Other research deals with "group negotiation," which occurs when three or more people (representing their own interests) seek to resolve conflicting preferences (e.g. Bazerman et al 1989). Bazerman and his colleagues claim that integrative agreements are harder to achieve in larger groups than in dyads because larger groups impose greater information-processing demands on their members, have more complex interpersonal dynamics, and often use negotiation management techniques that have negative consequences. Research on the effects of such variables as agendas and decision rules provides some support for these claims (e.g. Thompson et al 1988).

### *Coalition Formation*

Group conflicts can sometimes be resolved through coalition formation, when two or more members agree to cooperate in order to obtain a mutually desired outcome. Both coalition formation and two-party bargaining are studied extensively; but whereas research on two-party bargaining is often criticized as atheoretical, research on coalition formation is positively theory ridden. Experiments often attempt to test hypotheses derived from competing theories, and reviews of coalition formation research are typically organized around theoretical controversies.

Coalition formation is studied by researchers from several disciplines using a variety of methodologies. We focus on social psychological research, which tests descriptive theories that predict which coalitions will form and how coalition members will divide rewards. All of these theories assume that group members seek to maximize a divisible reward (e.g. money, points). Summaries of this work can be found in Komorita (1984a). Those interested in game theoretic models should consult reviews by Kahan & Rapoport (1984) and Wilke (1985).

Five theories (minimum resource, minimum power, weighted probability, bargaining, equal excess) are relevant to *simple* games, where all coalitions are defined as either "winning" or "losing." These games can be studied with and without the assignment of resource weights to group members. Such weights are important because they influence both the number and sizes of minimal winning coalitions (strategic function) and the division of reward within coalitions (normative function). Research on simple games provides more support for weighted-probability, bargaining, and equal-excess theories than for minimum-resource and minimum-power theories. However, the relative accuracy of the former three theories is not yet clear (e.g. Komorita & Nagao 1983; Kravitz 1987; Nail & Cole 1985). These three theories all involve comparisons between alternatives, but they differ in other ways (e.g. emphasis on strategic versus normative function of resources, static versus dynamic predictions).

Some theories (bargaining, equal excess, Shapley-*w*) are relevant to *multi-valued* games, where winning and losing coalitions are not defined and the values of various possible coalitions may differ. With a few exceptions, such games are studied without the assignment of resource weights to group members. Research on multivalued games provides a murky theoretical picture (e.g. Komorita & Miller 1986; Miller & Komorita 1986a; Miller & Wong 1986). Although equal-excess theory seemed ascendant a few years ago (Komorita 1984a), the situation today is less clear. Perhaps new work on process theories will be helpful in revealing the mechanisms underlying coalition formation in multivalued games (cf Komorita & Ellis 1988).

Most research on coalition formation is experimental and involves highly contrived, artificial settings. When more naturalistic studies are conducted, a number of interesting issues emerge that coalition researchers often neglect in their quest for elegant mathematical models. Some studies are done, for example, on how leader behavior affects the formation of "revolutionary coalitions" among subordinates (Lawler 1983), how family coalitions maintain existing status relationships between parents and children (Bonacich et al 1985), and how the presence of agendas and decision rules affects coalition behavior in negotiating groups (Thompson et al 1988).

Several commentators note weaknesses in social psychological and game theoretic analyses of coalition formation and suggest new directions for theory and research. For example, Cook & Gillmore (1984) criticize social psychological theories on several grounds, including the assumption that actors have full knowledge of the objective characteristics of the game, the emphasis on intra-coalition dynamics to the exclusion of the larger social context, and the failure to consider past and future relations between actors. They advocate a power-dependence approach to explain the emergence of coalitions in ongoing social exchange networks and to clarify links between coalition mobiliza-

tion and the distribution of power in these networks. Researchers interested in coalitions within organizational contexts (e.g. Murnighan 1986) offer several other good suggestions. Miller & Komorita (1986b), for example, describe many aspects of organizations that are not considered in most laboratory research on coalitions. These include the presence of earned (as opposed to assigned) resources, restrictions on information and communication, the ideological nature of coalition payoffs, the probabilistic nature of coalition success, and the fact that coalitions are not always necessary for winning. They conclude that coalition formation research would benefit from less emphasis on theory testing. We believe that the problem is not theory testing per se, but rather the narrow scope of the theories that are being tested.

### *Majority and Minority Influence*

In some groups, people begin their relationship on an agreeable basis but later split into coalitions, or factions, to secure access to valued resources. In other groups, people begin their relationship as members of factions that disagree about some issue; groups often contain two such factions differing in size (i.e. a majority and a minority). These factions attempt to influence one another in a variety of ways. Majority and minority influence are the focus of much theoretical and empirical work, several reviews of which are available (e.g. Levine 1989; Levine & Russo 1987).

Majority and minority influence are relevant to conflict for two reasons. First, group members are usually not seeking to reach a joint decision that is binding on everyone, as in the decision-making research discussed below. Second, research on majorities and minorities is heavily influenced by Moscovici's (1985) position that conflict and behavioral style, rather than dependence and uncertainty reduction, are the critical determinants of social influence. In particular, Moscovici has focused attention on social change (innovation), which he believes often occurs when a minority creates conflict with a majority.

Much of the research on majority and minority influence reflects a controversy about whether the two kinds of influence are mediated by a single psychological process (e.g. Doms & Van Avermaet 1985; Latane & Wolf 1981; Tanford & Penrod 1984) or by two different processes (e.g. Maass et al 1987; Moscovici 1985; Mugny 1982; Nemeth 1986). Unfortunately, relatively few studies actually explore the impact of majority and minority pressure on psychological processes, and the results of these studies are mixed (e.g. Mackie 1987; Nemeth & Kwan 1985). Recently, two thoughtful analyses indicate that the "either-or" character of the one-process versus two-process debate is deceptive and that the truth may be more complex (and more interesting) than either position implies. Chaiken & Stangor (1987) argue that multiple cognitive processes (e.g. heuristic processing, message- and issue-

relevant thinking) may underlie both majority and minority influence, and that the motives operating in a social-influence setting constrain the cognitive process(es) that occur there. Kruglanski & Mackie (1989) describe several criteria for assessing the validity of one-process versus two-process explanations, review research using these criteria, and find support for a weak version of the two-process position. They suggest that researchers abandon the debate and concentrate on identifying which differences between majorities and minorities affect their ability to exert influence.

Although Moscovici's position has been dominant during the last few years, other theoretical approaches shed important light on majority and minority influence (e.g. Kaplan 1987; Stasser et al 1989a; Turner et al 1987). Research indicates that a number of situational variables affect majority and minority influence. Majority influence is affected by such factors as the majority's size (e.g. Insko et al 1985), the extremity of the majority's position (e.g. Campbell et al 1986), the majority's perceived competence (e.g. Mugny 1985), and exposure to dissenters from the majority position (e.g. Kerr et al 1987). Minority influence is affected by such factors as the extremity and consistency of the minority's position (e.g. Levine & Ruback 1980; Nemeth & Brilmayer 1987), the level of social support for the majority's position (e.g. Doms & Van Avermaet 1985), the minority's "idiosyncrasy credits" (e.g. Lortie-Lussier 1987), and the social categorization of the majority and minority (e.g. Clark & Maass 1988).

As all of this indicates, a good deal of theoretical and empirical attention is devoted to majority and minority influence in laboratory groups. Several theorists are now beginning to consider innovation outside the laboratory. Gerard (1985) discusses the factors that lead dissident minorities in real-world settings to adopt consistent behavioral styles. Levine & Moreland (1985) use their group-socialization model to explain innovation on the part of prospective, new, full, marginal, and ex-members of groups. And Nemeth & Staw (1989) discuss the trade-offs between social control and innovation in small groups and organizations.

## THE PERFORMANCE OF SMALL GROUPS

Although conflicts in small groups are important, there is also considerable cooperation among members who have common motives and interests, work together to produce a group product, and share the resulting rewards. Group performance is the process and outcome of members' joint efforts to achieve a collective goal. Research on group performance can be divided into three general topics: leadership, productivity, and decision-making.

### *Leadership*

Leadership is a universal aspect of human groups (Hollander 1985), perhaps because group performance is facilitated by the exercise of organizational,

directive, and motivational functions. Leadership is studied by researchers from many fields (e.g. Graumann & Moscovici 1986; Hunt et al 1988). Research on leadership can be organized in terms of three major theoretical orientations (Chemers 1987): leader-oriented approaches, transactional and exchange approaches, and cognitive approaches.

Some leader-oriented approaches focus on the relationship between a leaders' personality or behavior and various situational factors. The best known example is Fiedler's (1978) contingency theory. Reviews of relevant research yield some support for Fiedler's position (e.g. Chemers 1987; Peters et al 1985), and contingency theory continues to generate new work (e.g. Chemers & Ayman 1985; Rice et al 1982). Of particular interest is research by Fiedler and his colleagues on the role of stress and intelligence in leadership (e.g. Chemers et al 1985; Fiedler & Garcia 1987). Two additional contingency theories are House's (1971) path-goal theory and Vroom & Yetton's (1973) normative decision theory. Neither of these theories is studied as often as Fiedler's theory, but both provide useful perspectives on leadership (e.g. Field 1982; Fry et al 1986; Schriesheim & DeNisi 1981).

In addition to research on these three contingency theories, a substantial amount of work focuses on aspects of leader behavior. Researchers explore how the performance of followers is affected by a leader's rewards and punishments (e.g. Podsakoff & Todor 1985), role clarification and discipline (e.g. Yukl & Van Fleet 1982), and democratic decision-making (e.g. Weiss & Friedrichs 1986). Related work on the impact of leaders' personality characteristics is also being done (e.g. Strube et al 1989). Several theoretical papers analyze leader behavior and follower performance. Some of these analyses involve particular kinds of groups, such as business organizations (e.g. Hackman & Walton 1986) and military units (e.g. Henderson 1985). Other analyses are more general (e.g. Griffin 1987). Of particular interest is recent work on transformational, or charismatic, leadership (e.g. Conger & Kanungo 1988).

Transactional and exchange theories of leadership emphasize the development and maintenance of leader-member relations through the exchange of valued resources (Hollander 1985). Leader legitimacy is important, because it is the basis for leaders' authority over their followers. Leaders often obtain legitimacy through appointment or election. Legitimacy gained in these two ways has different effects on leader-follower relations (e.g. Ben-Yoav et al 1983). Legitimacy can also be obtained by exhibiting commitment to group goals and competence on group tasks (e.g. Price & Garland 1981); leaders often use impression-management techniques to convince followers of their commitment and competence (cf Leary et al 1986).

Not all leaders are appointed or elected; some "emerge" during the course of group interaction (Schneier & Goktepe 1983). Research on emergent leadership suggests that several factors can affect a member's perceived right

to exert influence. These include individual-difference factors, such as personality traits (e.g. Kenny & Zaccaro 1983) and sex (e.g. Geis et al 1985). Other determinants of emergent leadership are verbal participation rate (e.g. Stein & Heller 1983) and seniority (e.g. Insko et al 1982). Related to leadership emergence is leader succession; several useful analyses of succession in organizational contexts are available (e.g. Hall 1986).

Perhaps the best-known exchange perspective on leadership is the vertical dyad linkage (VDL) theory proposed by Graen and his colleagues (e.g. Dansereau et al 1975). They assert that leaders develop different exchange relationships with different followers and hence treat them in different ways. Although some aspects of the theory are controversial (e.g. Vecchio & Gobdel 1984), dyadic leader-follower relations are clearly an important component of leadership (e.g. Crouch & Yetton 1988; Dienesch & Liden 1986). Other work also supports the importance of reciprocal relations between leaders and their followers (e.g. Griffin et al 1987).

Cognitive theories of leadership focus on followers' and leaders' thoughts and feelings about one another. We have already described some work on followers' cognitions in our discussion of emergent leaders. Other research deals with elected or appointed leaders. Evidence suggests that reactions to such leaders (by followers or even outsiders) are influenced by a variety of factors, including the leader's style (e.g. Tjosvold et al 1983) and the group's level of success (e.g. Larson et al 1984). Work by Lord and his colleagues on implicit leadership theories, which are relevant to emergent as well as to appointed and elected leaders, is especially interesting. People apparently possess shared beliefs about leaders' behaviors and traits, which affect how they encode leader information, form perceptions of leaders, and recall relevant information (e.g. Lord 1985; see also Rush & Russell 1988). Finally, leaders' thoughts and feelings about followers are also studied extensively. Much of this work was stimulated by Green & Mitchell's (1979) argument that information about followers' behavior triggers attributional responses from leaders, which in turn affect how they evaluate their followers. Although not without its critics, the leader-attribution perspective has a good deal of empirical support (e.g. Ashkanasy 1989; Gioia & Sims 1986).

Although some argue that the concept of leadership has been romanticized and overemphasized (e.g. Meindl et al 1985), interest in the topic remains high. The vitality of the field contradicts the disenchantment that afflicts some observers, and we agree with Chemers (1987) that "leadership research can drive toward a bright future, if only the perennial mourners would move the hearse out of the road" (p. 272).

### *Productivity*

By group productivity we mean tangible outcomes of group members' activities that can be evaluated in terms of quality. We do not discuss work on how

the mere presence of others affects individual performance. Readers interested in this topic can consult one of several reviews dealing with social facilitation (e.g. Geen 1989).

Theoretical analyses of group productivity focus on work groups in organizational settings. This is not surprising, given current interest in organizations and the widely held assumption that work groups are a major determinant of organizational effectiveness. Several interesting analyses of group productivity in organizations are available (e.g. Gladstein 1984; Hackman 1987), but Goodman and his colleagues (Goodman et al 1986, 1987) criticize current models of group productivity for being too general and difficult to test. They urge theorists to develop more specific models, to define group effectiveness more carefully, and to consider new ways in which effectiveness is influenced by a group's task and technology, cohesiveness, and norms. Research indicates that these and other factors can indeed affect group productivity. As we mentioned earlier, group performance depends, at least in part, on the abilities and personalities of group members and the size and cohesiveness of the group. The group's task, technology, and reward structure are also important, as are the quantity and quality of intermember communication and the behavior of the group leader.

A good deal of research on group productivity has sought to clarify "social loafing"—the tendency of group members to expend less effort when working together than when working alone. Social loafing is a robust phenomenon that occurs on both physical tasks, such as shouting (Williams et al 1981), and cognitive tasks, such as brainstorming (Harkins & Petty 1982). Although easy to produce in the laboratory, social loafing is not inevitable when people work together. Loafing can be reduced or eliminated by increasing the identifiability and uniqueness of members' contributions to a task (e.g. Harkins & Petty 1982; Kerr & Bruun 1981), the ease with which those contributions can be evaluated (e.g. Harkins & Szymanski 1987), members' involvement in the task and accountability for their work (e.g. Brickner et al 1986; Weldon & Gargano 1988), and task attractiveness (e.g. Zaccaro 1984). Finally "free-rider" and "sucker" effects are other possible explanations for reduced motivation in groups (e.g. Kerr 1983; Kerr & Bruun 1983).

Because motivation and coordination losses often inhibit group productivity, various strategies have been suggested for helping groups to function more effectively. Besides some general techniques applicable to a wide range of groups and settings (e.g. Hackman 1987), several specific techniques have been suggested. Although none of these is a panacea, each appears to be useful in some situations. Three techniques involve substantial changes in how work groups function. Team development encompasses a range of activities (e.g. problem identification, sensitivity training, role analysis) designed to increase group members' interpersonal and task skills (e.g. Buller

1986). Quality circles, popularized by the Japanese, involve regular meetings in which group members discuss production problems and solutions to these problems (e.g. Marks et al 1986). Autonomous work groups allow members who work on interdependent tasks to control the management and execution of these tasks (e.g. Goodman et al 1988). Autonomous work groups are compatible with sociotechnical systems theory, which holds that group self-regulation improves both morale and productivity (e.g. Guzzo et al 1985). A closely related perspective, contingency theory, claims that performance can be improved by tailoring group structure and process to the demands the group faces (e.g. Schoonhoven 1981).

Two other techniques involve attempts to increase the effort group members devote to a task. In participative goal setting, members decide together on their production goals (e.g. Pearson 1987). Interest in this technique stems from the team development and autonomous work group approaches and from research on the relationship between goals and individual performance (see Locke et al 1981). Other work suggests that agreement between members' individual and collective goals may facilitate group performance (Mackie & Goethals 1987). Task design can also make groups more productive. Tasks were once assumed to have objective attributes (e.g. autonomy, feedback, variety) that affected group members' motivation directly. Group productivity could thus be enhanced by appropriate changes in critical task attributes. This approach is now being challenged, and to a large extent replaced, by Salancik & Pfeffer's (1978) social information processing (SIP) model, which emphasizes task perceptions based on information obtained from other people (e.g. Griffin 1987). According to the SIP model, methods designed to enhance productivity must influence group members' *perceptions* of their task, rather than (or in addition to) its objective characteristics.

Of course, groups do not typically cease to exist once they create a product. Instead, members often reflect on the quality of the product and the process by which it was created, and these reflections affect their feelings and behaviors. Many studies focus on the attributions that members make for a group's success or failure. These attributions often reflect two forms of bias (Leary & Forsyth 1987). Egocentric, or self-serving, bias occurs when members attribute group success to their own contributions but attribute failure to other causes (e.g. Miller & Schlenker 1985). Sociocentric, or group-serving, bias occurs when members attribute group success to the contributions of the entire membership, but attribute failure to other causes (e.g. Adams et al 1985). Several explanations for egocentric and sociocentric biases have been offered (e.g. information processing, self-esteem, self-presentation), and all appear to have some validity. A more complex typology of possible attributions for group performance is offered by Zaccaro et al 1987. Finally, it is important to



note Wicklund's (1989) work on the appropriation of ideas, which sheds light on responsibility attribution for "intellectual" products.

As Leary & Forsyth (1987) point out, outcome attributions can have important implications for group processes. One such process is the allocation of rewards and costs among group members. These allocations can be made by group members themselves or by outsiders. Research on the allocation process indicates that the use of particular allocation rules (e.g. equity, equality, need) is determined by group factors, such as success and morale (e.g. Elliott & Meeker 1986); recipient factors, such as performance and need (e.g. Tindale & Davis 1985); and allocator factors, such as motives and values (e.g. Stake 1983). As noted earlier, allocations of rewards and costs can often affect status, conflict, and leadership in groups.

Several theoretical analyses of the causes and consequences of allocation decisions in groups can be found (e.g. Komorita 1984b). All are based, at least in part, on comparisons between the outcomes of different group members. In an effort to provide an integrated perspective on outcome comparisons in group contexts, Levine & Moreland (e.g. 1987) offer a model based on the identities of the source and target of comparison (self/self, self/other, group/group), their group identifications (intragroup, intergroup), and the time period(s) during which the outcomes under consideration occur (intratemporal, intertemporal). Using that model, they offer predictions about when different comparisons are made, how the results of multiple comparisons are integrated, and what consequences different comparisons can have.

### *Decision-Making*

An important aspect of group performance is decision-making. Groups frequently struggle for consensus on issues that affect the welfare of their members and/or outsiders. Both the process and outcome of decision-making are influenced by the kind of task the group is working on. These tasks include generating plans, generating ideas, solving problems with a correct answer, deciding issues with no correct answer, and resolving conflicts of viewpoint (McGrath 1984). General reviews of research on group decision-making are available (e.g. Brandstatter et al 1982), as are reviews dealing with specific kinds of groups, such as juries (e.g. Stasser et al 1982) and organizations (e.g. Guzzo 1982).

Many investigators attempt to describe the process of group decision-making. Some of these descriptions are qualitative, whereas others are quantitative. In the former category, efforts are often made to assess the accuracy of Bales & Strodtbeck's (1951) three-stage model of group decision-making (orientation, evaluation, control). Research provides little support for that model (e.g. Hirokawa 1983). Other qualitative models are also available,

including Poole's structurational model (e.g. Poole et al 1985) and Burnstein & Berbaum's (1983) model of decision-making by high-level governmental groups. The latter is particularly interesting because it deals with groups that exist for relatively long periods and make life-or-death decisions.

Three of the most important quantitative theories of group decision-making are the social decision scheme (SDS) model, the social transition scheme (STS) model, and the social interaction sequence (SIS) model (see Stasser et al 1989a). These models differ in important ways. For example, SDS focuses on a group's final decision, STS focuses on transitions from one configuration of member preferences to another, and SIS focuses on changes in members' preferences and subjective certainty levels. Nevertheless, all three models combine individual preferences or dispositions to yield group outcomes. These models are useful in analyzing several aspects of group decision-making, including majority influence (e.g. Davis et al 1988) and the role of individual differences (e.g. Kirchler & Davis 1986). Laughlin and his colleagues also use the SDS and STS models to clarify group decision-making on intellectual tasks (e.g. Laughlin & Futoran 1985).

Computer simulation represents an important trend in quantitative models of group decision-making. The SIS model uses computer simulation, as do such models as JUS (Hastie et al 1983) and DISCUSS (Stasser 1988). Simulations are useful for two reasons: They can account for a large amount of existing data on group decision-making, and they raise interesting issues for future research. Stasser (1988), for example, suggests that minorities facilitate group performance by helping to uncover "hidden" information.

The quality of group decision-making is an issue that intrigues many researchers. Some of their work involves comparisons between individual and group performance (see Hill 1982). For example, Laughlin and his colleagues demonstrate that groups are superior to individuals on induction tasks, because groups are able to recognize correct hypotheses once they are proposed (e.g. Laughlin & McGlynn 1986). Their work on collective induction also clarifies majority and minority influence on tasks that have intellectual characteristics. More attention is also being paid to differences between group and individual memory (e.g. Clark & Stephenson 1989; Wegner et al 1985).

Other research on the quality of group decision-making focuses less on individual-group comparisons and more on factors that affect the process and outcome of group discussion. One such factor is the decision rule that a group adopts for combining members' individual preferences. Several studies show that groups implicitly use different decision rules on different types of tasks (Laughlin & Ellis 1986). Other studies show that explicitly adopted decision rules have important effects on both the process and outcome of decision-making (see Miller 1989). A second factor is the bias introduced into group

decisions by members' failure to exchange unshared information. The exchange of such information is generally associated with better group decisions (e.g. Vinokur et al 1985). However, Stasser and his colleagues (e.g. Stasser et al 1989b) find that group discussion is often ineffective for disseminating unshared information. Instead, discussion is dominated by information that members share and that supports their existing preferences.

The failure of group members to exchange information is a major component of "groupthink," defined as extreme concurrence-seeking that produces poor group decisions. According to Janis (1982), several factors (e.g. high group cohesiveness, directive leadership, external threats) lead to symptoms of groupthink (e.g. illusions of invulnerability, pressure on dissenters), which in turn harm decision-making (e.g. by restricting the consideration of alternatives). The groupthink notion is intuitively appealing, and Janis offers many insights into the operation of some historically important policy groups. Unfortunately, the theory has certain conceptual limitations and (as we noted earlier) weak research support.

One alleged outcome of groupthink is the propensity to make risky decisions. For many years, this propensity was termed the "risky shift." But current research focuses on group polarization (the tendency of individuals' opinions to be more extreme after discussion than before) and group choice shifts (the tendency of group decisions to be more extreme than the average of members' initial opinions). Although polarization and choice shifts may be mediated by somewhat different mechanisms (Hinsz & Davis 1984; McGrath 1984), most reviewers treat them together. The available evidence suggests that persuasive argumentation and social comparison are the best general explanations for polarization and choice shifts (Isenberg 1986). These effects can also be analyzed by means of social combination models (e.g. Crott et al 1986), variable perspective theory (Ono & Davis 1988), and social identification theory (e.g. Mackie 1986).

Because so many problems can plague group decision-making, several techniques have been developed to help groups make better decisions. Some of these are simply computational schemes for combining members' preferences in ways that enhance group accuracy (e.g. Shapley & Grofman 1984). Other techniques involve some form of intervention in the group's activities. Perhaps the best-known intervention is brainstorming, in which group members are encouraged to suggest new ideas in a criticism-free environment. Unfortunately, brainstorming seems to be ineffective—nominal groups generally perform better than real groups (Diehl & Stroebe 1987). Recent research suggests that productivity loss in brainstorming groups is due to production blocking rather than "free riding" or evaluation apprehension (Diehl & Stroebe 1987) and that systematic relationships exist between vocal parameters of group discussion and the production of ideas (Ruback et al

1984). Research is being done on several other intervention techniques, including the Nominal Group Technique (Bartunek & Murnighan 1984), the Delphi process (e.g. Erffmeyer & Lane 1984), and applications of Social Judgment Theory (e.g. Cook & Hammond 1982). All of these techniques have strong advocates, but the boundary conditions for their effectiveness have not been established.

Participation in decision-making can affect how group members think and behave afterwards. Several studies show, for example, that initial group decisions influence subsequent decisions and that experienced decisionmakers behave differently from inexperienced ones (e.g. Davis 1984). Research also indicates that participation in group decision-making affects members' subsequent opinions about the discussion topic (e.g. Isenberg 1986; Sande & Zanna 1987). A few studies suggest that group members (and outsiders) often assume a close correspondence between a group's decision and the preferences of its members. Because of this "group attribution error," perceptions of opinions within a group are sometimes distorted (e.g. Allison & Messick 1987).

## CONCLUSION

Having surveyed nearly a decade's worth of research on small groups, we conclude with two general observations that summarize our beliefs about the current state of the field and our expectations for its future.

### *Groups Are Alive and Well, but Living Elsewhere*

Fifteen years ago, the social psychologist Ivan Steiner (1974) wrote an optimistic analysis of the future of group dynamics, arguing that the zeitgeist was favorable for a resurgence of interest in this important but neglected topic. Steiner (1986) recently concluded that his analysis was wrong. With the benefit of hindsight, he argued that social psychology is wedded to theories and research methods inimical to the study of small groups. Steiner also warned that "the group is too important to an understanding of human behavior and the workings of society to be forever neglected. If social psychologists do not research the group, someone else surely will" (p. 283).

In our opinion, Steiner's warning comes too late. 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.

### *There is Nothing So Good as a Practical Theory*

Current research on small groups is based largely on practical concerns with improving their performance (cf Zander, 1982). Much of the world's work is done by small groups (e.g. juries, work units, army squads, athletic teams), so many people care deeply about this issue. A practical orientation to small groups should be welcomed, because it encourages researchers to tackle more complex and interesting problems than they might otherwise attempt. That orientation also has important (and largely positive) implications for theory, methodology, and funding.

Far from being atheoretical, most research on small groups is strongly tied to theory and meant to promote theoretical development. The main difference between current and older work is that more researchers are seeking to develop theories that can account for complex behavior in natural groups, rather than simple behavior in laboratory groups. A wide range of social psychological theories are applicable to small groups (e.g. Mullen & Goethals 1987), and alongside the traditional theoretical approaches, psychoanalytic, evolutionary, and systems theories are now becoming more popular (e.g. Barchas 1986; Smith & Berg 1987; Von Cranach et al 1986).

From a methodological viewpoint, a practical orientation to small groups is weakening the reliance of many researchers on laboratory experimentation and fostering the use of field research, observational techniques, and archival analyses. This trend seems likely to continue, as does the increasing use of computer simulations (e.g. Stasser 1988), thought experiments (e.g. Davis & Kerr 1986), and social network analyses (e.g. Willer & Anderson 1981). Researchers are also likely to make use of new methods for assessing and analyzing group process (e.g. Dabbs & Ruback 1987; Futoran et al 1989).

Because the effectiveness of work groups is so important to business and military organizations a practical orientation to small groups may improve prospects for research funding. This happy state of affairs, however, depends on two factors. The first, which researchers neither welcome nor control, is continued evidence that work groups performing critical tasks often fail tragically (cf Foushee, 1984). The second, which researchers both welcome and control, is evidence that we can make useful suggestions for improving group performance and preventing such tragedies.

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