

Beyond Fiasco: A Reappraisal of the Groupthink Phenomenon and a New Model of Group Decision Processes

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In the past two decades, there has been a substantial increase in emphasis on groups in organizations in general (e.g., Leavitt, 1975; Ouchi, 1981; Zander, 1982) and on group problem solving in particular (e.g., Brandstatter, Davis, & Schuler, 1978; Delbecq, Van de Ven, & Gustafson, 1975). However, surprisingly little attention has been paid to the development of comprehensive models of group problem solving. Models are available to suggest when groups, rather than individuals, should be used for problem solving (Vroom & Yetton, 1973) and the appropriate composition and functioning options of problem-solving groups (Stumpf, Zand, & Freedman, 1979), and several specific group problem-solving techniques have been presented (e.g., Rohrbaugh, 1979; Turoff, 1971; Van de Ven & Delbecq, 1971). Furthermore, generic models of group functioning are also available but do not lend themselves to application specifically to group problem solving (e.g., Homans, 1950). However, popular, comprehensive, general models of group problem solving are lacking.

The groupthink model (Janis, 1971, 1972, 1982) is the most prominent attempt to fill this void. In recent years, acceptance of the groupthink phenomenon has become almost universal, and the term *groupthink* has entered the popular vocabulary. It has been blamed for such decision-making fiascoes as the Bay of Pigs invasion, the escalation of the Vietnam conflict, the Watergate cover-up, and the *Challenger* disaster, as well as for flawed group problem solving in business and other organizations. Despite Longley and Pruitt's (1980) warning that both

the groupthink theory and related research were problematic, Janis's (1971) original conceptualization has not been altered, and groupthink continues to be viewed as a defective process that should be guarded against. Articles discussing the dangers of groupthink and suggesting remedies have regularly appeared in periodicals aimed at managers, lawyers, medical professionals, and the general public (e.g., Cerami, 1972; Culbertson, 1977; Henderson, 1987; Ludwig, 1973; Rosenblum, 1982; Sanders, 1980; Von Bergen & Kirk, 1978). The *Social Sciences Citation Index* showed more than 700 citations of Janis's work from January 1989 through June 1992.

Janis chose the term *groupthink* because of its frankly Orwellian connotation, similar to "doublethink" and "crimethink." Janis (1982) wrote that "the invidiousness is intentional" (p. 9). This view of groupthink as an undesirable phenomenon continues to be evidenced in Janis's most recent work. For instance, Janis (1989) wrote that

whenever a policymaking or crisis management group is functioning as a compatible team with a fair or high degree of esprit de corps, take steps to counteract tendencies toward concurrence-seeking or "groupthink." If a leader does this, the decision-making process will tend to be of higher quality. (p. 247)¹

He then presented a listing of remedies for groupthink.

The widespread acceptance of the groupthink model suggests that it has had considerable heuristic value. In this sense, it has served similar roles to models such as those presented by Maslow (1943) and Piaget (1932, 1972). In each case, a relatively precise model stimulated further research that ultimately challenged its validity. For instance, Maslow's hypothesized need hierarchy, based primarily on clinical studies of neurotic individuals, met with widespread acceptance and research interest but failed to gain substantial empirical support (e.g., Alderfer,

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We would like to thank the Graduate School of the University of Wisconsin—Madison for providing funding to support this article. Ramon J. Aldag and Sally Riggs Fuller made equal contributions to this article. Names are presented alphabetically.

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¹ From *Crucial Decisions: Leadership in Policymaking and Crisis Management* (p. 247) by Irving L. Janis, 1989, New York: The Free Press. Copyright 1989 by The Free Press. Reprinted by permission of The Free Press, a Division of Macmillan, Inc.

1972; Hall & Nougaim, 1967; Wahba & Bridwell, 1976). Similarly, Piaget's theory, originally based on an in-depth study of a small number of children, served as a seminal stage theory of cognitive development, but additional research has suggested needed revisions (T. G. R. Bower, 1976; Horn, 1976). We argue that groupthink has played a similar role to these theories. Like them, the groupthink model (a) was based on a small and relatively restricted sample but has been widely generalized; (b) posits a precise and deterministic sequence of stages; (c) has had substantial intuitive appeal; and (d) has not received consistent empirical support, as we demonstrate.

Concerns about the validity of the models notwithstanding, each has proved to be extremely valuable. Specifically, the groupthink model has stimulated research on group dysfunctions and encouraged viewing outcomes in problem-solving terms; shown how decision processes may be relevant to a wide range of situations; provided links to other types of literature, such as stress and vigilance; and identified potentially important variables in group problem solving. Also, like the Maslow (1943) and Piaget (1932, 1972) models, it has provided a rich base for further development and testing.

However, two directions seem necessary to preserve the model's continued viability. First, the groupthink model has a relatively narrow focus, primarily addressing major decision fiascoes. As such, it would appear useful to provide an expanded perspective applicable to a broader range of problem types. Second, the groupthink model has not been revised to incorporate the emerging literature and empirical findings. In this article we present a new, broader framework for examination of group problem solving, termed the *general group problem-solving (GGPS) model*. It captures and recasts some elements of the groupthink model. Additionally, the GGPS model integrates findings of a groupthink literature review, material from a variety of other literature suggested by a general problem-solving perspective, and an examination of groupthink assumptions.

In this article, we first discuss the basic characteristics of the groupthink model. Next, we summarize and discuss the research that has examined groupthink, adopt a general problem-solving perspective and discuss other relevant literature suggested by that perspective, and question groupthink assumptions. We then present the new model, note potential concerns relating to the model, address the allure of groupthink, and provide implications of our literature review and model development for future theory and research on group problem solving.

Groupthink Model

At the individual level, Janis and Mann (1977) argued that thinking about vital, affect-laden issues generally results in "hot" cognitions, in contrast to the "cold" cognitions of routine problem solving, and that such hot cognitions can result in errors in scanning of alternatives. Such situations induce stress that results in defensive avoidance, characterized by lack of vigilant search, distortion of the meanings of warning messages, selective inattention and forgetting, and rationalizing.

Groupthink is seen as the group analogue of defensive avoidance, or "a collective pattern of defensive avoidance" (Janis & Mann, 1977, p. 129). According to Janis (1972),

I use the term "groupthink" as a quick and easy way to refer to a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action. . . . Groupthink refers to a deterioration of mental efficiency, reality testing, and moral judgment that results from in-group pressures. (p. 9)

Janis (1982) explicitly defined the context in which groupthink is thought to occur and divided these antecedent conditions into three categories. First, a moderate to high level of group cohesion is a necessary but not sufficient condition for groupthink. Secondary antecedents that are said to predict situations in which groupthink is likely to occur are structural faults and a provocative situational context. In the structural fault category are insulation of the group, lack of tradition of impartial leadership, lack of norms requiring methodical procedures, and homogeneity of members' social backgrounds and ideology. The provocative situational context antecedents focus on the role of stress as a situational factor. The first stress factor is characterized as external threats of losses combined with a low hope of finding a better solution than that of the leader. The internal stress antecedent stems from temporary low self-esteem attributable to members' recent failures, perceptions that the task is too difficult to accomplish, and the perception that there is no alternative that is morally correct.

There are several supposed symptoms of groupthink (cf. Janis & Mann, 1977, pp. 130-131), including an illusion of invulnerability, rationalization to discount warnings and other negative feedback, belief in the inherent morality of the group, stereotyped views of members of opposing groups, pressure on dissenters, self-censorship, illusion of unanimity, and self-appointed "mindguards" acting to shield the group from adverse information.

According to Janis (1971, 1972, 1982, 1989), groupthink results in a number of consequences that interfere with effective group decision making. For instance, the group limits its discussion to only a few alternatives. After a course of action is initially selected, members ignore new information concerning its risks and drawbacks. At the same time, they avoid information concerning the benefits of rejected alternatives. Members make little attempt to use experts to obtain more precise information. In addition, because they are so confident that things will turn out well, group members fail to consider what may go wrong and, as such, do not develop contingency plans. These "defects" are seen as leading to impaired performance and other undesirable outcomes. This view of the causal sequence relating to determinants and consequences of groupthink is summarized in Figure 1.

Janis (1971, 1972, 1982, 1989) suggested methods to prevent or minimize the supposedly dysfunctional consequences of groupthink, including the following: The group leader should encourage all group members to air their doubts and objections; leaders should adopt an impartial stance rather than initially stating their preferences; members should be encouraged to discuss the group's deliberations with trusted associates and

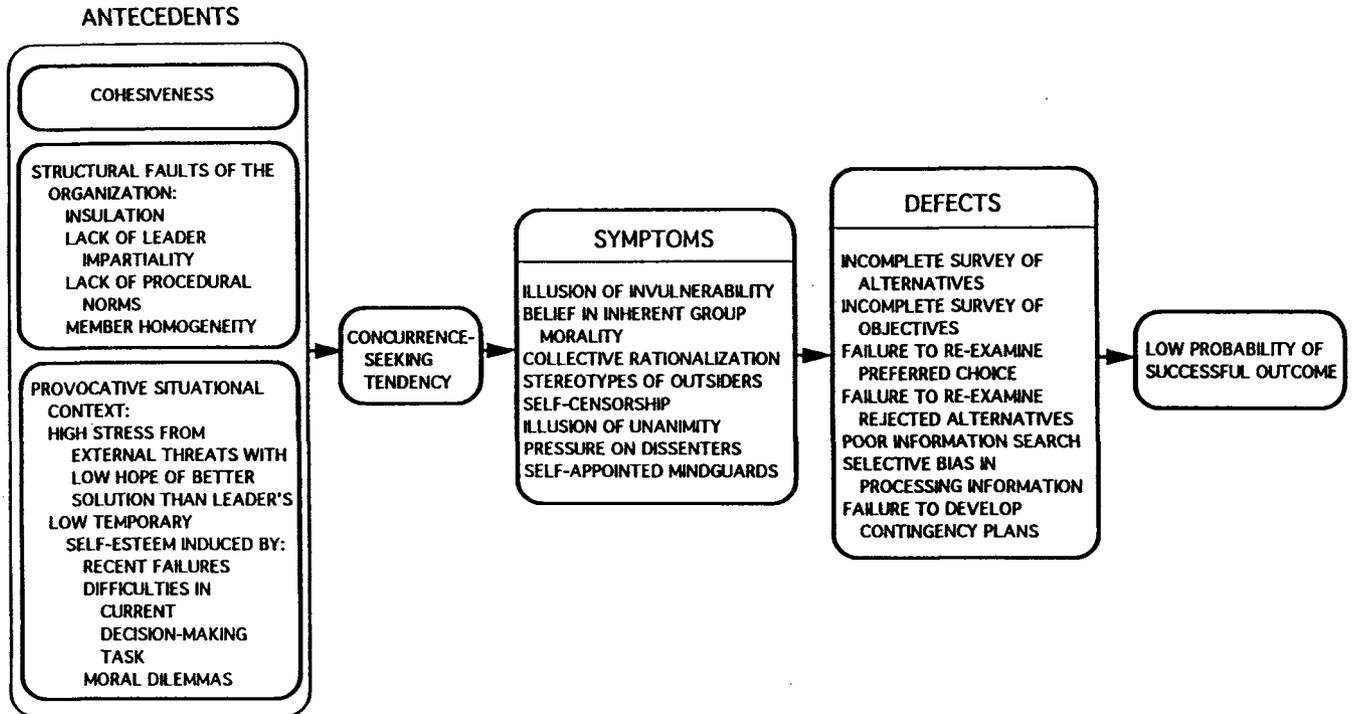


Figure 1. Groupthink model. (From *Decision Making: A Psychological Analysis of Conflict, Choice, and Commitment* [p 132] by Irving L. Janis and Leon Mann, 1977, New York: The Free Press. Copyright 1977 by The Free Press. Adapted by permission of The Free Press, a Division of Macmillan, Inc.)

report their reactions back to the group; outside experts should be invited to meetings and encouraged to challenge members' views; when a competitor is involved, time should be devoted to assessment of warning signals from the competitor and of alternative scenarios of the competitor's intentions; when considering alternatives, the group should split into subgroups to meet separately from time to time; the group should hold a "second-chance" meeting after a preliminary consensus is reached on a preferred alternative; and the group should consider using dissonance-inducing group processes.

Underlying Assumptions of Groupthink

At base, the prevailing view of groupthink seems to rest on a set of generally unstated assumptions: First, the purpose of using a group for problem solving is primarily to enhance decision quality. The groupthink model is silent concerning other outcomes such as member adherence to the solution, member satisfaction with the leader, and future motivation of the leader, to name just a few.

Second, group problem solving is essentially a rational process, with members unified in their pursuit of a goal and participating in the group process to facilitate achievement of that goal. This rational process involves "the selection of the goal-maximizing alternative regardless of which particular interests within the organization favor that alternative" (Pfeffer, 1981, p. 22). Such rationality is both a description of the decision pro-

cess and a valued social ideal (Parsons & Smelser, 1956; Pfeffer, 1981). March (1976, p. 69) referred to the theory of rational decision making using terms such as "faith" and "scripture."

Third, benefits associated with a problem-solving group that functions well are assumed to include a wide variety of perspectives on a problem, more information concerning proposed alternatives, heightened decision reliability, dampening of biases, and social presence effects (cf. Guzzo, 1986; Maier, 1976).

Fourth, groupthink characteristics are assumed to prevent the actualization of these potential group benefits by causing group members to respond passively to external pressures in undesirable ways.

Fifth, it is assumed that by taking steps to prevent the occurrence of groupthink characteristics, a more rational and effective group process will result, leading to enhanced decision quality.

Sixth, an illusion of well-being is presumed to be inherently dysfunctional. Such a position is consistent with the view that veridical perceptions are critical to effective functioning (e.g., Jahoda, 1953; Maslow, 1959). In her review of the organizational implications of self-efficacy, Gist (1987) used the groupthink model to argue that self-efficacy can be too high, thus producing overconfidence and poor performance. Although not explicitly stated, her view was apparently that for optimal performance, self-efficacy should reflect objective reality.

Finally, it is assumed that the concurrence-seeking attitudes and behaviors ("symptoms" and "defects") result from individ-

uals' psychological agreement-seeking drives and group pressures for consensus.

Review of the Prior Groupthink Literature

We review three types of literature relating to the groupthink phenomenon: case analyses, laboratory studies, and conceptual articles.

Case Analyses

Early support for groupthink was based almost entirely on retrospective case studies. For instance, Janis (1971, 1972, 1982) focused primarily on five American foreign-policy crises: the Marshall Plan, the invasion of North Korea, the Bay of Pigs invasion, the Cuban Missile Crisis, and the escalation of the conflict in Vietnam. Through case studies, he categorized these crises according to whether evidence of groupthink was revealed. In his 1982 work, Janis also discussed the Watergate cover-up as an example of "how clever manipulators can get caught in an avoidable quagmire" (p. 198).

Tetlock (1979) examined the same five crises considered by Janis (1971, 1972). Content analyses were performed on the public statements of key decision makers involved in the crises. Consistent with Janis's theory, groupthink decision makers were found to be more simplistic in their perceptions of policy issues than nongroupthink decision makers and to make more positive references to the United States and its allies. Inconsistent with Janis's theory, groupthink decision makers did not make significantly more negative references to the Communist states and their allies. Tetlock (1979) concluded that "the current findings converge impressively with the conclusions of Janis's intensive case studies" (p. 1322). He attributed the lack of uniform support to methodological issues, arguing that content analyses of public statements may be insensitive to differences in evaluations of opponents in groupthink and nongroupthink crises.

More recently, several other case studies providing support for groupthink have been published. For instance, Manz and Sims (1982) presented three cases to demonstrate groupthink tendencies in autonomous work-group settings. Smith (1984) presented case information describing the attempt by the United States to rescue its hostages in Tehran as an example of groupthink (this example was noted by Janis in his 1982 edition). Hensley and Griffin (1986) applied groupthink to a case analysis of the 1977 gymnasium controversy at Kent State University, where trustees decided to build an addition to the school's gymnasium on part of the area of the tragic 1970 confrontation between students and Ohio National Guard members. Hensley and Griffin (1986) concluded "that each major condition of the theory was present in the conflict and that the trustees were indeed victims of groupthink" (p. 497).

Esser and Lindoerfer (1989) conducted a "quantitative case analysis" of the space shuttle *Challenger* accident. They coded statements from the *Report of the Presidential Commission on the Space Shuttle Challenger Accident* (Presidential Commission on the Space Shuttle Challenger Accident, 1986) as positive or negative instances of the observable antecedents or consequences of groupthink. Positive instances of groupthink were

reported to be twice as frequent as negative instances. Furthermore, during the 24 hr prior to launch, the ratio of positive to negative instances increased and then remained high. Esser and Lindoerfer (1989) noted that "it is possible that the many instances of decision-making defects would be consistent with any theory of poor decision making. We have no comparison group with which to evaluate this alternative" (p. 175). Use of the terminology *positive and negative instances of groupthink* was taken to imply that any statement not directly inconsistent with groupthink was an instance of groupthink. The authors failed to find statements relating to some groupthink symptoms or consequences. Although they speculated that the decision makers constituted a highly cohesive group, no statements provided information concerning group cohesiveness. Finally, the finding of a greater relative number of occurrences of instances of groupthink closer to the decision point was interpreted to be evidence of poor decision making rather than as simple convergence on a solution.

Laboratory Studies

As recently as 1982, Moorhead wrote that "since the publication of Janis's book, there has been no systematic research testing any of its propositions" (p. 436). Even now, there have been only a limited number of studies empirically examining groupthink. We discussed the Esser and Lindoerfer (1989) quantitative case analysis earlier. We now review laboratory studies of groupthink in chronological order.

Flowers (1977) hypothesized that cohesiveness and leadership style should interact in the decision process, so that groupthink is most likely to occur when group cohesiveness is high and leadership style is closed (i.e., the leader presses for his or her own decision and a unanimous decision). Flowers assigned undergraduate students to experimental teams, with leaders trained to take an open or closed style and cohesiveness manipulated by whether students knew each other (high cohesive) or did not (low cohesive). Teams were given a "crisis" decision situation involving a school personnel problem. Open leadership style produced more suggested solutions and use of available facts than did closed leadership style, but that there was no support for Janis's (1971, 1972) assumption that cohesiveness is a critical variable. Flowers (1977) argued that "the results of this experiment suggest that poor decision-making activities can occur in a wider variety of crisis situations than originally studied by Janis" (p. 888).

Courtright (1978) placed first-year undergraduates into teams and gave them the problem, "What is the best method for recruiting new students to the University of Iowa?" Half were told that they were chosen to be compatible (high cohesive) and the other half that they probably would not like each other (low cohesive). In addition to cohesiveness, Courtright manipulated "decision-making parameters." In the freed condition, group members were told that arguing is the best way to solve a problem. In the limited condition, members were told that cooperation is necessary and that time is limited. In the no-instructions condition, members were told only of the time limit for discussion. Dependent variables included the number of times each member offered solutions, stated agreement, and stated disagreement. The only significant finding was that

groups in the high-cohesive condition and limited-parameters condition (the groupthink condition) generated significantly less disagreement than did groups in the low-cohesive and limited-parameters conditions. However, Courtright (1978) stated that "the theory as postulated by Janis is essentially correct" (p. 229).

Moorhead and Montanari (1982) developed measures to tap groupthink concepts, including "group characteristics," "symptoms," and "defects" and presented a preliminary study to assess the validity of the indexes. Business students competed as teams in a management simulation. After the competition, students completed the Moorhead and Montanari instruments. Largely unresponsive factor analyses led Moorhead and Montanari (1982) to conclude that "the measurement and validation of groupthink may not be as simple as Janis's clear and alluring presentation would suggest" (p. 382). They further noted that although the group characteristics measures appeared adequate, "the conceptual uniqueness of the variables described under the Symptoms and Defects categories can be questioned, based on these data" (Moorhead & Montanari, 1982, p. 382). Furthermore, they reported on the basis of inter-category correlations that the "preliminary analysis indicated that some of the relationships proposed by Janis appeared to hold for the groups used in this study" but that others "do not appear to be as strong for this data set" (Moorhead & Montanari, 1982, p. 382).

Callaway and Esser (1984), using undergraduate psychology students, manipulated group cohesiveness and the adequacy of decision procedures in a factorial design. The authors concluded that their findings provided mixed support for the groupthink hypothesis on measures of decision quality and group processes presumed to underlie the groupthink decisions. In their study, cohesiveness categories were achieved post hoc, and the degree of support for groupthink varied with the group task (the lost-at-sea task was supportive and the horse-trading task was not). Given the differential support across tasks, the authors reasoned that the horse-trading task may be inappropriate in a test of groupthink because it has a single correct answer that becomes immediately obvious.

Leana (1985) used teams of college students solving a hypothetical business problem. She tested the effects of group cohesiveness and leader behavior (directive vs. participative) on defective decision making. She found that teams with directive leaders proposed and discussed fewer alternatives and discussed fewer alternative solutions than did teams with participative leaders. However, contrary to Janis's (1971, 1972, 1982) groupthink model, members of noncohesive groups engaged in more self-censorship of information than did members of cohesive groups. These findings were interpreted to be partially supportive of the groupthink model.

Gladstein and Reilly (1985), using a management simulation called *Tycoon*, studied group decision making under threat. They hypothesized that threat may result in restriction in information processing and a decrease in breadth of distribution of influence (termed *constriction of control*). Noting the congruence of these hypotheses with the groupthink model, they stated that "no one has fully tested the groupthink model, although several studies have shown partial support for it (Flowers, 1977; Leana, 1985)" (Gladstein & Reilly, 1985, pp.

615-616). Although the results indicated a restriction in information processing and increased stress when threat increased, the degree of threat made no significant difference in constriction of control. They argued that group norms and task demands might have acted to moderate the relation between threat and constriction of control.

Callaway, Marriott, and Esser (1985) reasoned that because Janis (1972) proposed that groupthink is essentially a stress-reduction process, it might be prevented in cohesive groups if the stress could be diffused by other factors. They investigated the effects of group structure (decision-making procedures) and individual dominance on symptoms of groupthink, anxiety, and the quality of group decision making. Students, formed into groups on the basis of dominance scores, participated in the lost-at-sea task (Nemiroff & Pasmore, 1975), which permits objective scoring of the "correctness" of the group decision. Decision-making procedures were found to influence the time required to reach a decision but not decision quality or the process variables assumed to mediate groupthink. Groups composed of highly dominant members made higher quality decisions, exhibited lower state anxiety, took more time to reach a decision, tended to make more statements of disagreement and agreement, and reported more group influence on the members.

Moorhead and Montanari (1986) argued that previous empirical studies of groupthink were flawed both because they failed to successfully produce the antecedent conditions proposed by Janis (1972, 1982) and because they provided incomplete tests of the groupthink theoretical framework. Moorhead and Montanari (1986) wrote that "the most comprehensive empirical test to date (Courtright, 1978) included measures of only two of the seven antecedent conditions, none of the symptoms, three of the seven decision-making defects, and outcomes measured on a subjective productivity rating instrument" (p. 402). To provide a more complete test, the authors formed teams of business policy students who completed "a highly competitive management simulation exercise" (Moorhead & Montanari, 1986, p. 405). Refined versions of the Moorhead and Montanari (1982) measures were administered, and path analysis was used to assess the implied causal sequence. The authors concluded that although several relationships supported the framework proposed by Janis, "the empirically derived model suggests that several linkages were opposite to those predicted by the Janis framework" (Moorhead & Montanari, 1986, p. 408). For instance, cohesion had a negative impact on self-censorship, a positive impact on dissent, and a negative impact on the defect, "few alternatives." Moorhead and Montanari (1986) noted that "these data do not show powerful support for Janis's groupthink hypothesis (p. 408) but argued that there were enough significant relations among variables to warrant further investigation.

Montanari and Moorhead (1989) developed and validated scales to measure groupthink variables.² They included three

² Although Moorhead and Montanari's (1982) paper is nowhere noted in Montanari and Moorhead's (1989) article, the papers are essentially identical (i.e., the latter is apparently a journal version of the former).

antecedents (cohesion, insulation, and promotional leadership) and all eight symptoms and seven defects. Factor analyses were used to reduce eight symptoms to five and seven defects to three. The analyses were conducted only on variables within categories (i.e., antecedent conditions, symptoms, and defects), presumably because the sample size ($N = 61$) did not permit a full factor analysis. Even with this restricted approach, there was relatively little support for the structure proposed by Janis. Montanari and Moorhead (1989) concluded that "Janis's conceptualization of the groupthink variables, when operationalized via subscale items, lacks sufficient stability" (p. 217).

Conceptual Articles

In the first comprehensive critical evaluation of groupthink, Longley and Pruitt (1980) raised several issues including the lack of empirical support and deficiencies in the theory itself. They called for a clearer definition of groupthink, more rigorous empirical research, and increased attention to underlying processes and the relations among variables. Despite these warnings, research on groupthink continued in the same vein, without significant changes to Janis's (1972) original theory.

Whyte (1989) argued that the decision fiascoes attributed to groupthink may be explained by prospect polarization, which uses, in addition to the pressures for uniformity of groupthink, the concepts of framing effects (Tversky & Kahneman, 1986) and group polarization (Myers & Lamm, 1976). Although Whyte cited some groupthink research as being more consistent with prospect polarization than with groupthink, he did not challenge the general constellation of characteristics said to be associated with groupthink. Whyte (1989) suggested that groupthink "although relevant, is an incomplete explanation for the occurrence of decision fiascoes" (p. 54).

Luechauer (1989) provided a brief overview of groupthink and the critiques leveled against it (citing Longley & Pruitt, 1980, and Whyte, 1989). Luechauer (1989) then presented a "revised model of the groupthink phenomenon," which suggests that the self-monitoring propensity (Snyder, 1974) of group members "is a critical personality variable that should be considered in the groupthink formulation and that Fantasy Themes may act as a possible mechanism which propels groups toward groupthink" (p. 5). Luechauer argued that fantasies enable a group to draw a boundary around itself that resists intrusions. Luechauer (1989) then discussed how such additional variables might act to pull the fantasizing "away from reality and toward groupthink" (p. 10). He noted that "our purpose in presenting this model is not to debunk Janis's work. Rather, it is to expand the model by supplying two elements that Janis does not consider in his treatment of the topic" (Luechauer, 1989, p. 5).

McCauley (1989) used content analysis to review Janis's (1982) descriptions of historical cases. He sought to determine whether groupthink concurrence seeking is caused by compliance (public without private agreement) or internalization (private acceptance of group consensus). McCauley interpreted Janis as arguing for internalization but reasoned that compliance might have also played a substantial role. For each of eight decisions (six groupthink and two nongroupthink), McCauley determined whether compliance and eight hypothesized ante-

cedents were present. The results showed evidence of compliance in two of the six groupthink decisions and in neither of the two decisions without groupthink. Because all eight cases reflected high degrees of cohesion and external threat, these antecedents were not useful in discriminating between groupthink and nongroupthink situations. The Watergate case was the only example in which all six of the other antecedents were present. Across the six groupthink decisions for the six discriminating antecedents, 21 antecedents were present and 15 were absent (i.e., without Watergate, these hypothesized antecedents were equally present and absent). In the two nongroupthink decisions, five antecedents were present and seven were absent. In only three of the groupthink decisions were more discriminating antecedents present than absent. McCauley concluded that cohesion can lead to both compliance and internalization and that future groupthink research should attempt to distinguish between them.

Park (1990) provided a critical evaluation of empirical groupthink research. He questioned the model's completeness and the methodologies used to assess it. Criticisms included researchers' failure to test all of the model's variables and the inappropriate use of modes of measurement. Park's recommendation was to use structural equation modeling such as LISREL to test groupthink. Despite these criticisms, Park appeared to accept the phenomenon as being valid without suggesting changes to the original framework.

Hart (1991) provided a review essay on groupthink, focusing on its relevance to the political arena. Following a discussion of the groupthink phenomenon, its theoretical context, and a brief review of related research, he presented a variety of conclusions and recommendations. For example, he cautioned against reliance on a narrow set of criteria for decision quality and encouraged a more integrative perspective, combining psychological with political and organizational paradigms. Furthermore, he called for greater precision in establishing the antecedents and dynamics of groupthink and for arrival at better grounded diagnostics of when, how, and why groupthink occurs.

Discussion of Prior Groupthink Literature

In this section, we first present some general comments regarding past groupthink literature and then discuss specific lessons that may be drawn from that literature.

General Comments

As suggested by the earlier review, most support for groupthink has come from retrospective case studies that have focused on decision fiascoes rather than comparing the decision-making processes associated with good versus bad decisions.

Experimental studies of groupthink have considered only a small portion of the model, often without a cohesive group and in situations inconsistent with Janis's (1971, 1972, 1982, 1989) antecedents. Furthermore, they have relied exclusively on student samples dealing with hypothetical or simulated decisions, with potential resultant problems for external validity. Military strategists, managers, politicians, or other "real-world" decision makers have never been used. In the laboratory, many real-

world group characteristics, including ongoing power relationships and political maneuverings, have been necessarily ignored. Although student samples in laboratory settings may be valuable to address many issues relating to group problem solving, their use to examine groupthink is problematic.

Empirical studies of groupthink have tended to use short-term decision quality as the sole outcome measure and have contained serious threats to internal validity. On the basis of a cursory review of only three laboratory studies of groupthink (Courtright, 1978; Flowers, 1977; Tetlock, 1979), Posner-Weber (1987) concluded that

in the study of groupthink, each experimenter has tended to start from scratch, either arbitrarily or intuitively deciding what aspects of the groupthink phenomenon will be studied. . . . Janis's theory is largely based on intuition; he is well-informed, but his statements are not clearly confirmed. (p. 124)

Interestingly, Janis apparently discounted these experiments. For instance, Janis (1989) cited none of the experimental studies of groupthink; his discussion of groupthink referred only to case studies and anecdotal pieces. However, Janis (1985) explicitly recognized the dangers of reliance on anecdote and suggested the "modus operandi" approach (Scriven, 1976) as a more rigorous approach to the analysis of case studies. Studies of groupthink that use this methodology have not appeared.³

Studies of groupthink have focused on various combinations of Janis's (1972, 1982) original antecedents and were rarely faithful to the original conceptualization, in which cohesion was a necessary condition. Also, the majority of studies did not operationalize the model as Janis (1971, 1972, 1982) defined it. Another important aspect of prior research concerns the situations chosen for study. The groupthink conceptualization is restrictive, primarily because of the model's antecedents and the international policy context for which groupthink was developed. The narrow focus of the model's antecedents is not surprising given the fact that Janis extracted them directly from the major policy decision fiascoes he examined. Early case evidence provided in support of groupthink was drawn largely from these and similar "hot" decision situations. The ability to generalize from such situations is questionable. For instance, the extremely high group cohesiveness and clearly unified goals in many major military policy decisions or in groups facing a natural disaster are unlikely to often be encountered in other settings. Nevertheless, laboratory and survey research on groupthink has typically used settings considerably different from Janis's conceptualization. Such issues call into question the appropriateness of most past groupthink research.

Lessons of Prior Groupthink Research

Our discussion of prior research suggests that conclusions should be drawn from that research only with caution. Nevertheless, the following lessons appear to emerge from the groupthink research.

General Support for the Model

To assess the level of overall support for groupthink, it would be tempting to conduct a meta-analysis of prior research. However, the relatively small number of empirical studies, the vari-

ety of methodologies used, and methodological difficulties associated with many studies make this approach infeasible (Campbell, 1986; Park, 1990).

On the basis of our review, it seems clear that there is little support for the full groupthink model. In fact, to our knowledge, no study of groupthink has fully tested the model, and in no study were all results consistent with the model. McCauley's (1989) review raised doubts about Janis's (1982) conclusions regarding the prevalence of the antecedent conditions in his initial scenarios. Furthermore, the central variable of cohesiveness has not been found to play a consistent role. Flowers (1977) went so far as to state that "a revision of Janis's theory may be justified, one which would eliminate cohesiveness as a critical variable" (p. 895). This suggestion is diametrically opposed to Janis's (1982) view that high cohesiveness and an accompanying concurrence-seeking tendency that interferes with critical thinking are "the central features of groupthink" (p. 9).

The variable that has received the most consistent support is the directive leadership antecedent (i.e., lack of tradition of impartial leadership). However, almost by definition, leader behaviors that promote the leader's own views and do not allow open exploration of alternatives will be associated with groupthink defects such as incomplete survey of alternatives and failure to reexamine preferred and rejected alternatives. Such domain overlap calls into question research that shows links between impartial leadership and decision-making defects.

Evidence of Grouping of Characteristics

Groupthink's proposed causal chain is based on the premise that sets of variables such as symptoms and defects group together. However, support for the grouping of those characteristics derives from anecdote, casual observation, and intuitive appeal rather than from rigorous research. Because there has been no full factor analysis of groupthink variables, it is impossible at this point to determine whether the groupthink factor structure is as hypothesized. As previously noted, Moorhead and Montanari's (1986) restricted factor analyses appeared to support a simpler model than that presented by Janis (1982). Thus, support for this aspect of the model is lacking.

Presumed Negative Outcomes

Groupthink has been overwhelmingly viewed as an unalloyed evil, leading to uniformly negative outcomes. Indeed, such a view is universally implicit in the language of groupthink (e.g., the common references to "symptoms of groupthink,"

³ This approach attempts to determine the probable cause of undesirable events with high certainty even though the available data do not come from controlled experiments or quasi-experiments. It involves formulating all of the known causal sequences that might account for an observed outcome and then attempting to find which of them appears to be implicated. However, although this approach is intriguing, it continues to focus only on sources of error. Also, because many causal sequences may lead to similar consequences, expected causal sequences may be "confirmed" when other unexamined sequences are actually playing roles.

“victims of groupthink,” and “defects of groupthink”). When used in groupthink research, such negative terminology can invite distortions in responses caused by scale-use tendencies and related psychometric difficulties and can also result in framing effects.

Individuals (whether subjects or researchers) presented with negatively framed terminology may adopt the readily available negative frame and respond accordingly (Bazerman, 1990; Tversky & Kahneman, 1986). Therefore, even simple attempts by the subjects to give responses that are consistent with the tone of the questions would result in negatively oriented responses. In many cases, failed decisions are examined and characteristics of groupthink are then sought. There is evidence that when individuals are provided with knowledge of a negative outcome, they infer a negative process (Guzzo, Wagner, Maguire, Herr, & Hawley, 1986). Furthermore, a focus only on the conjunction of groupthink characteristics and negative outcomes invites illusory correlation (cf. Einhorn, 1980; Hogarth, 1980; Kleinmuntz, 1990).

On a more fundamental level, this framing has resulted in a focus on error rather than on decision quality per se. Janis (1982) noted that he began studying fiascoes “for the purposes of studying sources of error in foreign policy decision-making” (p. 9). However, there is more to the performance of a football team than the absence of fumbles and interceptions, and there is more to group decision quality than the absence of error. A focus on negative outcomes of group processes may divert attention from group synergies. One example is the assembly effect bonus, which, as noted by Collins and Guetzkow (1964), “is productivity which exceeds the potential of the most capable member and also exceeds the sum of the efforts of the group members working separately” (p. 58). There is considerable evidence for this assembly effect bonus, at least in some contexts (e.g., Burleson, Levine, & Samter, 1984). Thus, researchers may learn little about superior group performance by a focus solely on fiascoes. Instead, a focus on decisions with a broad range of outcomes, including superior performance, is necessary.

The consequences of the groupthink model’s focus on fiascoes are doubly ironic. First, the consideration only of fiascoes precludes generalization to other decision situations used in virtually all attempts to assess the validity of groupthink. Second, the focus on fiascoes makes it impossible to say anything even about the determinants of fiascoes.

As our discussion suggests, recent scale-development efforts such as those of Montanari and Moorhead (1989) are badly needed. That is, Montanari and Moorhead have attempted to develop psychometrically adequate indexes while removing the negative labels associated with Janis’s (1972, 1982) variable categories and the associated problems. We see this as an encouraging and critical development.

Groupthink Interpretation

Strong and weak interpretations of groupthink have emerged. The strong interpretation, commonly cited, suggests that groupthink is an integrated set of characteristics with deterministic linkages. That is, groupthink characteristics cluster because of their common ties to specific antecedent conditions and are linked in a causal chain from those antecedent condi-

tions to symptoms to defects to outcomes. The weak interpretation is sometimes presented in response to the failure of empirical examinations to provide results wholly consistent with groupthink. It suggests that groupthink may be evidenced by the presence of some subset of these characteristics and that the causal ordering posited by Janis (1972, 1982) may be suggestive rather than necessary.

When the weak interpretation is presented, it is crucial to ask what characteristics, if any, are unique to groupthink. That is, some groupthink characteristics, such as belief in the rightness of a decision and pressures to achieve consensus, are common to many group processes and in fact may be beneficial. For instance, Nemeth (1986) has argued that convergence to the majority viewpoint is desirable if the majority viewpoint is correct. Other characteristics, such as mindguards and self-censorship, better discriminate between groupthink and other group processes. It is difficult to accept the argument that the presence of characteristics common to most problem-solving groups is supportive of the existence of groupthink.

Janis (1989) apparently did not accept this weak form of groupthink. To the contrary, he wrote that

it does not suffice merely to see if a few of the eight telltale symptoms of groupthink can be detected. Rather, it is necessary to see if practically all the symptoms were manifested and also to see if the antecedent conditions and the expected immediate consequences—the symptoms of defective decisionmaking—are also present. (Janis, 1989, p. 60)⁴

Comprehensiveness

Several researchers and theorists have suggested that the groupthink model is incomplete as a model of group problem solving. Some have proposed specific additions, as we discuss later, whereas others have noted that other unexplored variables may be playing roles (Courtwright, 1978; Moorhead & Montanari, 1986). Among the proposed additions are norms, leader power, task characteristics, and stage of group development.⁵ The importance of these factors is evidenced both in the groupthink research and in the more general literature on group problem solving.

Norms. Moorhead (1982) noted after a brief review of the research relating cohesiveness to group performance, and consistent with the prior arguments of Seashore (1954) and others, that group norms will moderate the influence of cohesiveness on performance. When the norms favor high performance, cohesiveness should enhance performance. When the norms favor low performance, cohesiveness should lower performance. This suggests that examination only of cohesiveness per se,

⁴ From *Crucial Decisions: Leadership in Policymaking and Crisis Management* (p. 60) by Irving L. Janis, 1989, New York: The Free Press. Copyright 1989 by The Free Press. Reprinted by permission of The Free Press, a division of MacMillan Inc.

⁵ Although others (e.g., Luechauer, 1989; Whyte, 1989) have suggested additional variables, those variables were presented as alternative explanations for groupthink rather than as supplements to the model. For instance, Luechauer argued that self-monitoring propensity may be important, whereas Whyte emphasized the potential role of prospect polarization.

rather than asking "Cohesiveness to what?", may be misleading. Furthermore, Gladstein and Reilly (1985) reasoned that the nature of group norms might have prevented the constriction of control they had hypothesized. They noted that working as a team was a strong norm in the school in which the study was performed and that the groups in the study appeared to adhere to that norm, making decisions as a group and striving for consensus.

The need to consider norms has also been widely recognized and evidenced in the more general group problem-solving literature. For instance, Bazerman, Magliozzi, and Neale (1985) noted how norms influence group members' interpretation of problems and their subsequent attention to distributive or integrative solutions. Similarly, Bazerman (1990) discussed how norms influence the choice of third-party intervention procedures in group decision conflict as well as member risk preferences. Furthermore, Howell and Frost (1989) demonstrated how norms and leadership style may interact to influence performance and other outcomes in group decision making. Thus, norms may play pervasive roles in group problem solving and should be explicitly considered.

Leader power. Flowers (1977) wrote that

one potentially important factor not dealt with by Janis was the degree of power held by the leader over group members. Janis's groups had powerful leaders who could exercise reward and punishment as well as legitimate, expert, and perhaps referent power . . . over their members, whereas the leaders in this experiment held only certain legitimate power. Adding the variable of power to the operational definition of groupthink might create in highly cohesive groups an increased thrust toward groupthink (p. 895).

Similarly, McCauley (1989), in his review of the Bay of Pigs decision, concluded that "compliance with a group norm promulgated by a powerful and attractive group leader" (p. 254) contributed to faulty decision making.

The group problem-solving literature has regularly noted the role of leader power. For example, Huber (1980) argued that a powerful leader is needed to provide the opportunity for control if problem-solving groups begin to engage in dysfunctional behaviors. Clearly, the degree and locus of power in a group setting may have important consequences for group decision processes and outcomes.

Task characteristics. Callaway and Esser (1984) reasoned that the nature of the task may be important. In particular, they argued that a eureka-type task, in which a single correct answer becomes immediately obvious once insight is achieved by any group member, may be inappropriate in a test of groupthink. This is because the group interaction necessary for groupthink characteristics to occur is circumvented. Thus, whether the task requires a pooling of inputs, or interaction at all, may be important. Furthermore, Gladstein and Reilly (1985) noted that the task they used allowed for a high degree of specialization and that it was thus difficult for one person to make all of the decisions. This suggests that characteristics such as distribution of information and task complexity, as well as specialization per se, may be relevant task characteristics.

Task characteristics have often been examined in group problem solving. For instance, researchers have considered how group influences affect decision performance in additive, compensatory, conjunctive, and disjunctive tasks (e.g., Steiner, 1976;

Weldon & Gargano, 1985). Similarly, the literature on such alternatives to traditional interacting groups as the nominal group technique and the Delphi process suggest that group decision processes should be fitted to the task (e.g., Stumpf, Freedman, & Zand, 1979).

Stage of group development. Leana (1985) argued that the stage of group development may be relevant because it may moderate the role of cohesiveness. She noted, building on Longley and Pruitt (1980), that ad hoc groups with no previous experience together may be highly susceptible to groupthink symptoms because of insecurity concerning member roles and group norms. However, groups with a tradition of working together may exhibit far fewer symptoms of defective decision making because members are secure enough in their roles and status to challenge one another but have also developed ways of reaching agreement. Thus, the potential benefits and costs of alternative techniques for group problem solving, including dissonance-induction procedures, may depend on the stage of group development.

A General Problem-Solving Perspective

In the previous section, we highlighted several important factors emerging from research on groupthink that merit incorporation in a general model of group problem solving. In each case, we also noted explicit links to the problem-solving literature. In this section, we suggest how a problem-solving perspective may be further used to guide the development of such a general model. In so doing, we first indicate how the framework of the problem-solving process may be used to recast and expand on the groupthink model. We then discuss additional sets of variables suggested by the literature related to problem solving and question certain assumptions of the groupthink model.

Process Orientation

The large literature relating to the problem-solving process suggests that many groupthink variables are relevant but that a recasting and expansion is appropriate. Problem solving may be viewed as a multistage process that includes problem identification, alternative generation, alternative evaluation and choice, decision implementation, and decision control (Bass, 1983; Elbing, 1978). Explicit recognition of these stages is important for several reasons.

First, groupthink defects can be viewed simply as difficulties occurring through the stages of the problem-solving process. That is, the "incomplete survey of objectives" represents a failure at the problem identification stage, the "incomplete survey of alternatives" is a failure at the alternative generation stage, the "failure to examine risks of preferred choice" is a failure at the evaluation and choice stage, and so on.

Second, other variables not explicitly noted by Janis are known to be important in the problem-solving process. These include explicit problem definition, quality of alternatives generated, source of the solution, group decision rule, gathering of control-related information, and timing of solution convergence. Concerning the last variable, the decision stages differ in the degree to which they rely on divergent or convergent think-

ing. For instance, the alternative generation stage is primarily divergent, whereas the evaluation and choice stage is largely convergent. As such, premature convergence, rather than convergence per se, is undesirable.

Third, the various stages of the problem-solving process may require different social arrangements, and those appropriate at one stage may be troublesome at another. For instance, although interaction may be facilitative at the alternative evaluation and choice stage, it is often dysfunctional at the alternative generation stage (D. W. Taylor, Berry, & Block, 1958; Van de Ven & Delbecq, 1971; Vroom, Grant, & Cotton, 1969).

Fourth, it becomes apparent that groupthink defects focus primarily on the first three stages of the problem-solving process, ending with evaluation and choice. Janis (1972, 1982) gave less emphasis to implementation and control. Only the failure-to-work-out-contingency-plans symptom relates to the implementation stage, and control is not explicitly considered. This focus is restrictive. For instance, in the event of a faulty decision, if implementation has not been considered, it would be impossible to sort out the relative roles of faulty decision making and faulty implementation. As an example, Janis (1985) cited the ill-fated attempt by President Carter to use military force to rescue the American hostages in Iran as an example of the "unsqueaky wheel trap" (p. 81). That is, Janis reasoned that the decision makers neglected to consider the possibility of early abortion of the rescue mission because the "squeaky wheel" on which attention was focused was the obvious danger once the mission reached Tehran. In fact, it is not clear whether this reflects faulty evaluation, lack of attention to implementation, or both.

Finally, an explicit focus on the full problem-solving process emphasizes the importance of multiple-decision outcomes. For instance, along with decision quality, the problem-solving literature stresses the need to consider decision acceptability, satisfaction with the decision process, and so on (e.g., Huber, 1980). The literature further indicates that the degree of group members' inputs to problem solving, and whether the members feel that the ultimate decision reflects their inputs, influences these additional outcomes (e.g., Vroom & Yetton, 1973).

Lessons From Related Literature

The problem-solving literature suggests other elements that should be recognized in developing and interpreting a more general model. Those elements include organizational power and politics, group cohesiveness, social control, and directive leadership.

Organizational Power and Politics

The literature concerning organizational power and politics is an integral part of the study of organizational decision making. Organizations have been described as political coalitions (March, 1962), and Pfeffer (1981) stated that power, influence, and political activity are all inevitable and important elements of administrative activity. Often, the development and use of power are evidenced not by overt confrontations but by exhibitions of acquiescence. One type of political alignment is the politics of patronage, in which little or no conflict is manifest

because of the ability of powerful forces to smooth over differences and gain consensus (Lawler & Bacharach, 1983). Viewed in this light, certain groupthink characteristics may reflect not passive and maladaptive responses to stressful antecedent conditions but active, conscious efforts to attain personal outcomes. Thus, a broader problem-solving perspective would include consideration of such proactive political action.

Group Cohesiveness

Group cohesiveness is seen as a primary antecedent condition for groupthink and is known to result in dysfunctional forms of conformity behavior. However, there is also considerable evidence that higher levels of cohesiveness may have a variety of desirable consequences. These potential benefits include enhanced communication among members, higher member satisfaction, decreased member tension and anxiety, and higher levels of group task accomplishment (Shaw, 1981). Furthermore, it would appear that situational, task, and goal characteristics may moderate the desirability of cohesiveness in group problem solving and that positive effects should not be ignored.

Social Control

Social control has been defined as "social arrangements employed to keep the behavior of some people in line with the expectations of others" (Hewitt & Hewitt, 1986, p. 155). Informal social controls are unofficial, subtle pressures to conform to norms. Nemeth and Staw (1989) identified five ways in which social control is exercised to achieve uniformity. Several of these mechanisms are particularly relevant to the discussion of groupthink and group problem solving. First, conformity in a group may reflect agreement on the solution that most closely aligns with established norms. Second, powerful individuals often have the ability to achieve conformity to their positions. Finally, uniformity can be the result of a more tacit form of influence, that of agreement with majority viewpoints. These three forms of social control can serve as alternative explanations for the occurrence of groupthink's symptoms and defects.

Nemeth and Staw (1989) also noted that conformity "has both necessary and desirable elements, particularly with regard to attainment of goals and harmony" (p. 175). When the norm of the organization or the wishes of those in power is adopted, there is less strain on individuals as well as greater efficiency because the group can move toward its goals. However, Nemeth and Staw also noted that although conformity may serve useful functions, it may also stifle dissent. They wrote that "there is evidence that dissent, even when erroneous, contributes to the detection of truth and to the improvement of both performance and decision making" (Nemeth & Staw, 1989, p. 196). Thus, this literature suggests that the determinants and roles of conformity in group problem solving are more complex than is suggested by the groupthink model.

Directive Leadership

Directive leadership is viewed as an antecedent condition of groupthink and thus of negative decision outcomes. The possible effects of directive leadership have been widely examined in

the problem-solving literature, perhaps most notably by Vroom and Yetton (1973). The model presented by those authors, as well as related research (e.g., Field, 1982; Vroom & Jago, 1978), indicates that autocratic styles sometimes result in effective decision making. Furthermore, situational theories of leadership, especially path-goal theory (House & Mitchell, 1974), argue that directive leader behaviors may in some instances result in enhanced group performance and member satisfaction. There is considerable empirical support for such views (e.g., Schriesheim & Von Glinow, 1977). Thus, it should not be assumed that directive leadership is inherently dysfunctional.

The benefits of leader impartiality are also challenged by the literature on transformational leadership (e.g., Bass, 1990). That literature argues that successful leaders communicate their vision to followers and inspire and stimulate them toward the accomplishment of that vision.

Finally, it appears that Janis's "lack of tradition of impartial leadership" antecedent has been used in various, distinct ways in groupthink research, often confounding the leader's promotion of a correct decision process with promotion of a preferred outcome. Although the former is often espoused as desirable for the proper functioning of a decision group (e.g., Huber, 1980), the latter may inhibit member inputs.

Examining Past Assumptions

Earlier, we presented several implicit assumptions of groupthink. Our review of the groupthink research and the problem-solving literature poses several theoretical challenges to those assumptions.

First, although groupthink assumes that groups are used primarily to enhance the quality of decisions, group decision making is often used specifically to increase the acceptance of a decision (Pfeffer, 1981). Also, organizational members may choose to use groups for other reasons, including socioemotional benefits and accomplishment of members' own secondary goals (e.g., hidden agendas).

Second, the assumption that the group process is a rational pursuit of a unified goal is inconsistent with the known complexities of group processes. Such processes are characterized by interplays of covert and overt motivations, concern not just about the current problem but also with residues of past problems and the anticipation of future problem-related interactions, and many other subtleties outside of the typical focus of the rational model. Processes and outcomes that appear irrational to "objective" observers may in fact be functional from the viewpoint of individual members and even of the entire group. For instance, such processes and outcomes may serve to maintain the motivation of the group leader, help ensure the continued use of group processes, prevent the defection of certain group members, serve as a means for members to show allegiance to coalitions, and minimize the likelihood of the use of still other political acts. Organizations are inherently political, with shifting coalitions and interest groups, a diversity of goals, and active use of power (cf. Hardy, 1985; Lawler & Bacharach, 1983; Pfeffer, 1981). According to this view, political activity is not only a reality of organizational life but may be entirely appropriate in some situations.

Third, the assumption that actions taken to prevent or mini-

mize groupthink tendencies will produce a more rational and effective group process is questionable. These remedies may have unintended consequences (i.e., attempts to create a micro-rational decision process in an inherently political environment may prove to be misguided). Other literature has suggested the dangers of presenting an oasis of change in a nonreinforcing desert. The groupthink remedies are decision specific, whereas the causes for supposed group dysfunctions may be systemic (i.e., the application of specific techniques to prevent or minimize group difficulties may amount to treating the symptom of a deeper problem).

Fourth, although intuitively appealing, the view of a group's illusion of well-being as dysfunctional should also be questioned. For instance, S. E. Taylor and Brown (1988) argued that such illusions

appear to promote other criteria of mental health, including the ability to care for others, the ability to be happy or contented, and the ability to engage in productive and creative work. . . . These positive illusions may be especially useful when an individual receives negative feedback or is otherwise threatened and may be especially adaptive under these circumstances. (p. 193)

Thus, this illusion of well-being may be most useful specifically in the "hot" decision situations described by Janis (1972, 1982). Although the Taylor and Brown review focused on the individual, the processes that they detailed seem equally applicable to groups.

Two of the types of literature considered by S. E. Taylor and Brown (1988) should be explicitly noted. The first relates to self-fulfilling prophecy (Merton, 1948), referred to in some settings as the Pygmalion effect (Rosenthal & Jacobson, 1968) and named after the sculptor whose stone image of the perfect woman became real. Recently, attention has focused on the Galatea effect (e.g., Eden, 1988; Eden & Ravid, 1982), named after the sculpted maiden. The Galatea effect refers to the impact of direct manipulation of others' expectations. The Pygmalion, Galatea, and similar expectation effects appear to be common in organizational settings (e.g., Sutton & Woodman, 1989). Taken together, evidence concerning these related effects suggests that nonveridical perceptions may often yield positive consequences. Second, the literature on optimism-pessimism (e.g., Seligman, 1991) leads to similar conclusions. That is, although pessimism is often found to be associated with more realistic worldviews, optimism typically yields superior outcomes. These arguments are not meant to imply that overly positive perceptions are necessarily desirable, only that the opposite should not be automatically assumed.

A final groupthink assumption concerns the causes of characteristic groupthink attitudes and behaviors. Rather than, or as well as, stemming from individual psychological factors, conformity behaviors may be politically motivated. They may, for instance, reflect compliance rather than internalization. Thus, many groupthink characteristics could be caused by conscious actions by members to subscribe to political norms.

The GGPS Model

We incorporated the elements noted earlier in an expanded decision framework—the GGPS model—that is presented in

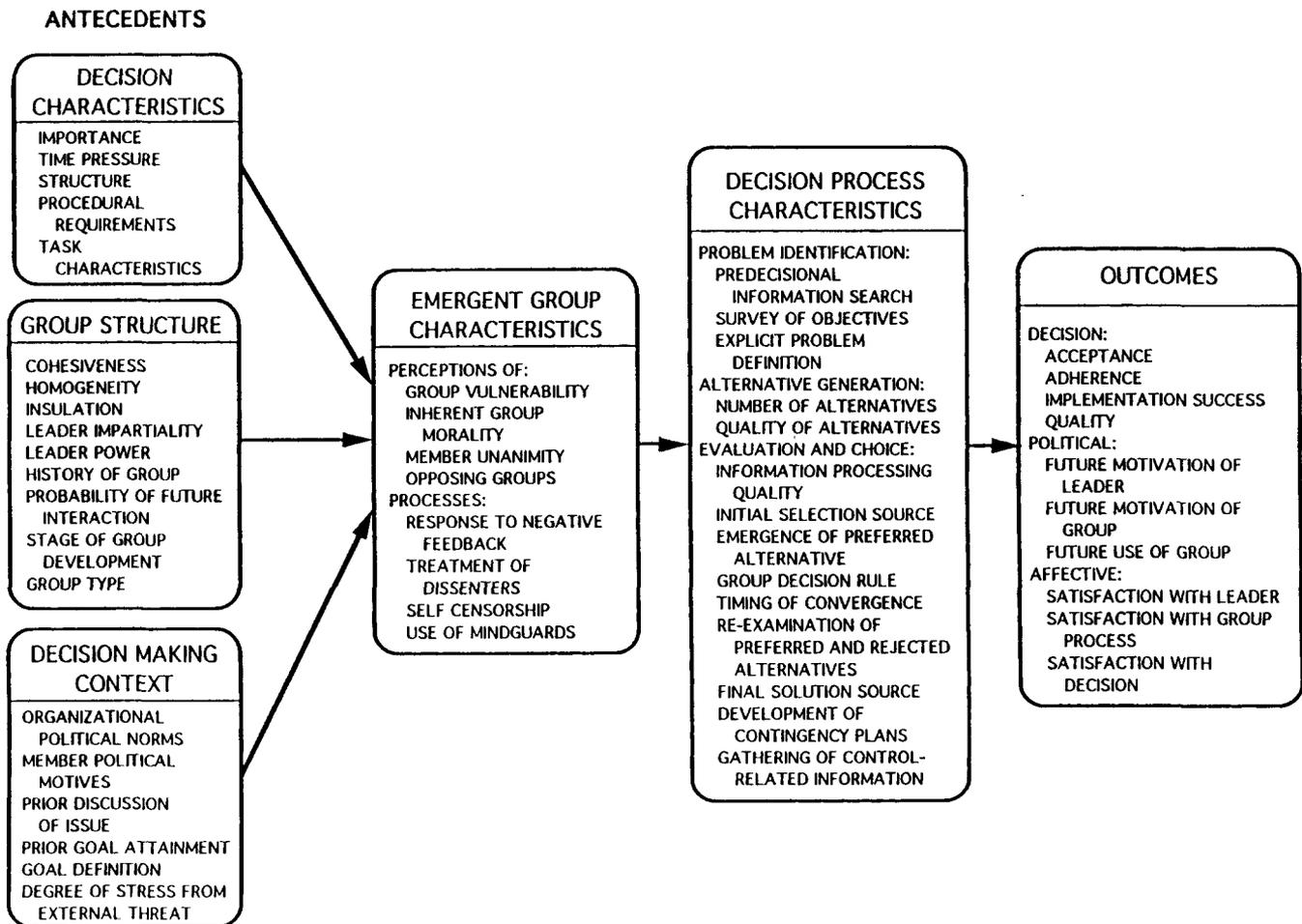


Figure 2. General group problem-solving model.

Figure 2. We included variables in the GGPS model only if they were suggested by prior research on groupthink, the literature relating to group problem solving, or direct theoretical challenges to groupthink assumptions. The model is primarily descriptive, serving as a visual summary device for our review and as a framework for future theory and research.

Two general characteristics of our model that differentiate it from groupthink should be noted. First, whereas the latter is viewed as pathological and casts all determinants, characteristics, and consequences accordingly, our model presents each element in a more value-neutral manner. For example, we recast "too few alternatives" as "number of alternatives," thus making no assumptions about probable interrelationships. Such a reorientation is important both conceptually and in terms of future empirical analyses.

Second, the GGPS model has a more political orientation than does the groupthink model. For instance, although groupthink antecedents are seen as a relatively small number of external forces impinging on the passively responding group, the GGPS model considers a larger and more varied set of antecedents. Significantly, some of these may involve conscious actions on the parts of group members, and the political reali-

ties of group processes are also considered. Similarly, proactive behaviors of group members and political aspects are incorporated throughout the new model.

Antecedent Conditions

Several groupthink antecedents have been incorporated in the GGPS model, sometimes in slightly reworded form, whereas others have been recast. Those recast include the lack of procedural norms, recast as procedural requirements; the lack of leader impartiality, recast as leader impartiality; recent failures, recast as history of the group; and difficulties in the current decision-making task, recast as prior goal attainment. We incorporated decision importance, time pressure, and structure because Janis (1972, 1982) considered them to be important but did not explicitly include them in his model and because other literature on group problem solving suggests their relevance. The only groupthink antecedent variable not retained was members' moral dilemmas from failing to have alternatives that do not violate their moral norms. We consider this variable to be overly restrictive and difficult to directly

assess (McCauley, 1989). Nine antecedent variables have been added.

The first of these, suggested by prior groupthink research, is task characteristics. For example, more complex tasks may require a wider range of member inputs and decrease the feasibility and desirability of directive leadership. Task specialization and broad distribution of information may play similar roles. Furthermore, compensatory tasks, in which one person's judgments can compensate for another's, may make different demands on group members than conjunctive tasks, in which the group is limited by the performance of its weakest member, or disjunctive tasks (including eureka) for which a single member's judgment is used. Groups dealing with these differing tasks would appropriately exhibit dissimilar interaction patterns.

Second, the stage of group development is important for a variety of reasons, as noted previously. It may, for instance, moderate the influence of group cohesiveness. As discussed by Leana (1985) and Longley and Pruitt (1980), the members of a fairly cohesive group in the mature stage are likely to be secure enough in their roles to challenge one another.

Third, we included group type because implications for the decision-making process would differ if the group were an advisory group as opposed to an ongoing decision group that was responsible for implementation. Although many groupthink characteristics may be evident only in ongoing, self-contained groups, a general model must be more broadly applicable.

A fourth new antecedent is leader power. As noted in the lessons from prior groupthink research and the discussion of the power and politics literature, a powerful leader can have a crucial impact on the group's functioning. Many groupthink characteristics may result from the exercise of influence by a powerful leader.

Fifth, the organizational power and politics literature suggests that many decisions are influenced by ongoing political activity and reflect the shifting power of various coalitions. Therefore, the probability of future interaction of the group is critical. If group members do not interact, and do not anticipate future interaction, some types of political influence may be lessened.

Sixth, we added organizational political norms because the groupthink assumption of rationality may not apply in an organization functioning with a political model of decision making, wherein political influence is a prevalent part of the decision-making process. In such organizations, for instance, personal power rather than rational pursuit of organizational goals may dictate decision outcomes, control is attained through shifting coalitions and interest groups, and decisions result from bargaining and interplay among interests (Pfeffer, 1981). As Jervis (1989) observed, psychologists

often neglect the possibility that what appear to be errors on the part of politicians are really devious strategies for seeking less than admirable goals. Thus, a statesman who seems inconsistent or confused may be seeking the support of opposed factions. (p. 442)

Janis (1982) recognized the possibility of political factors in decision making, noting that "members tend to evolve informal norms to preserve friendly intragroup relations and these become part of the hidden agenda at their meetings" (p. 7). How-

ever, he viewed this hidden agenda as a source of error rather than as potentially acceptable or functional.

Seventh, members' political motives are also relevant. Individuals may have a vested interest in certain alternatives, or there may be one or more strong coalitions present; both of these will affect behavior in the group decision-making process. As an example, ingratiation, a type of political behavior, is often manifested as opinion-conforming behavior. Such ingratiation may be used to positively alter the evaluations or attributions of relevant others (Liden & Mitchell, 1988). Group members' conformity behavior is often a way for individuals who are seeking upward advancement to gain approval (Nemeth & Staw, 1989).

Eighth, whether group members discussed the issue prior to the decision-making meeting can also affect the problem-solving process. Members could have previously discussed the organization's norms as well as what decision would be most consistent with them. Also, previous "deal making" could have occurred, making the decision essentially a political one. Finally, various alternatives could have been explored before the meeting, thereby shortening the observable problem-solving process and giving a false sense of premature closure.

Goal definition is the final new antecedent. For appropriate application of the rational model of decision making, there must be agreement on a unitary goal for the group. Goals may be multiple, discrepant, or ill-defined, violating this requirement.

Emergent Group Characteristics

The groupthink "symptoms" capture important group characteristics such as perceived unanimity, perceptions of opposing groups, and response to negative feedback, albeit negatively framed. As such, we retained them as our emergent group characteristics. However, in the GGPS model, they have been reworded to avoid negative connotations and have been categorized into group perceptions and processes.

Decision Process Characteristics

In the GGPS model, we group decision process characteristics in terms of the first three stages of the problem-solving process: problem identification, alternative generation, and evaluation and choice. We do not explicitly include the implementation and control stages here because they follow the actual decision, although we do include variables that prepare for those stages (i.e., development of contingency plans and gathering of control-related information). The groupthink defects, recast in value-neutral terms, as well as eight additional decision process characteristics, are included in the GGPS model.

The first new characteristic is explicit problem definition. Group members may fail to explicitly define the problem because a focus on the problem is uncomfortable, because they are anxious to move on to choice, or because of other reasons. However, failure to adequately define the problem may result in an "error of the third kind": solving the wrong problem. If a problem has been inadequately defined, the "solution" cannot be adequate (Elbing, 1978, p. 110).

Along with the quantity of alternatives generated, alternative

quality must also be considered. Processes that enhance alternative quantity will not necessarily enhance alternative quality. Although some group processes, such as brainstorming (Osborn, 1963), are based on the premise that a large quantity of alternatives improves the prospects for identification of a superior alternative, it is conceivable that defective processes may result in the generation of large numbers of hastily considered, low-quality alternatives. This could both complicate choice making and lead to poor decision outcomes.

Furthermore, the source of the initial selection of a preferred alternative may be important. Group member reaction to the initially preferred alternative may vary considerably depending on factors such as whether it was selected by the leader, mandated by a person external to the group, or used in the past.

Also important is whether the group identifies a preferred alternative early in the decision-making process or converges on a solution much later. If there is no preferred alternative during much of the process, several of the groupthink defects simply would not apply.

The group decision rule is also important. A decision rule identified early in the process could influence other decision process characteristics. For instance, with a consensus decision rule, each member recognizes that dissent may preclude, or at least jeopardize, problem resolution. With a majority decision rule, such dissent may be more acceptable. However, even such a statement is an oversimplification. For example, political norms may dictate the group decision rule. In addition, if the decision is to be chosen by the majority, silent agreement-seeking behavior may be indicative of members who acknowledge that they are in the minority and thus cannot have an impact.

The timing of convergence is also critical. Consensus-seeking behavior should not always be considered negative. Indeed, the choice stage of problem solving is inherently convergent; reaching a consensus is the goal. Therefore, the important variable to examine is not whether convergence is displayed but whether it is displayed prematurely.

We noted earlier that the source of the initial selection may be relevant. Similarly, the source of the final solution, which may or may not be the same as the initial selection, should be important. The problem-solving literature suggests that the source of the final solution should influence outcomes such as decision acceptance and implementation success. For instance, solutions proposed by group members during group discussion will likely result in greater understanding and acceptance of the decision and greater likelihood of implementation success.

The gathering of control-related information should also be considered. For instance, proper control requires gathering of data prior to implementation of the decision to permit assessment of change as well as determination of the specific variables for which subsequent monitoring is important (e.g., Huber, 1980). Furthermore, a lack of consideration of decision control may result in failure to recognize the consequences of feedback, thus underestimating the dynamic aspects of group problem solving.

Outcomes

Although groupthink views outcomes primarily in terms of a narrow assessment of decision quality, the GGPS model in-

cludes an array of decision, political, and affective outcomes. Decision outcomes include acceptance of the decision by those affected by it or who must implement it, adherence to the decision (i.e., whether the decision is subsequently overturned), implementation success, and decision quality. The political outcomes include future motivation of the leader and group and future use of the group. Finally, the affective outcomes include satisfaction with the leader, group process, and decision. The model does not assume that these outcomes are independent.

Incorporation of this array of outcomes recognizes that a "good" decision is not only one that appears so from an objective, rational evaluation immediately following the decision. Rather, it is also necessary to consider whether the decision is functional to the organization in the long term. The outcomes explicitly recognize that group members may bring a variety of goals to the problem situation (and thus that a single decision outcome may be misleading or even artificial) and that basically political outcomes (e.g., the likelihood that the group leader will refuse to use the group process in the future or that the group's decision will subsequently be unilaterally reversed by the leader) may be critical. They also recognize that affective reactions may influence group cohesion and future group functioning.

Discussion

The GGPS model is meant to be applicable to a broad range of group problem situations. Using the groupthink model as a starting point, we have drawn on lessons from past groupthink research, literature related to problem solving, and a direct assessment of groupthink assumptions to create this new model. Here, we first discuss potential concerns relating to the GGPS model. We then consider the allure of groupthink and present implications of our analysis for group problem solving.

Potential Concerns Relating to the GGPS Model

We have based the GGPS model on prior theory and research relating to group problem solving, attempting to present a viable framework for current application and continuing development. Nevertheless, potential concerns relating to the model should be noted.

First, the fact that the model does not posit a restricted, deterministic causal sequence, such that specific antecedent conditions are seen as determining the nature of specific group processes, and so on, may be disappointing to some readers. In fact, the GGPS model is primarily descriptive. Although it offers opportunities for future prescription, such prescriptions will typically be contingent on specific characteristics of the situation, group, and decision. We believe that the need to consider such contingencies is a veridical, if uncomfortable, reflection of the complexity of group problem solving. Nevertheless, it would be misleading to suggest that the GGPS model is currently prescriptive. Indeed, the literature review that led to the development of the model suggests that it may be naive to expect a single complex model to apply to all dependent variables across all situations. Instead, contingency models may emerge from additional research. For instance, it may be necessary to develop multiple prescriptive models, depending on the

dependent variable or variables selected for consideration. Until such models are developed, it may be appropriate to consider the GGPS model as a general, descriptive complement for the more narrowly applicable, deterministic, and prescriptive groupthink model. This suggests that it would be premature to abandon the groupthink model, which remains the most conspicuous prescriptive model for group problem solving in crisis situations.

Second, the GGPS model is complex and currently provides few guidelines regarding the relative importance of its various elements or the likelihood of particular patterns of movement through the model. Further testing may permit the trimming and refinement necessary to offer such guidelines, although it is unlikely that simple answers will be obtained. For instance, element importance will probably vary across situations and dependent variables. Similarly, determination of developmental sequences may be difficult. For example, Poole and his colleagues (e.g., Poole, 1983, 1985; Poole & Doelger, 1986; Poole & Roth, 1989a, 1989b) have developed a typology of decision paths and have attempted to identify factors that influence groups to follow various paths as they make decisions. According to their model, groups actively structure their decision processes to adapt to various contingencies rather than passively reacting to external factors. Poole and his colleagues have examined the roles of sets of contingency variables, including objective task characteristics, group task characteristics, and group structural characteristics. They have used these contingency variables to predict decision path properties, including type of decision path, path complexity, amount of disorganized behavior, and relative emphasis on types of decision activity such as orientation, problem analysis, and solution development. Although research in this vein has not considered outcomes such as decision quality and member satisfaction, and although it has suffered from some measurement problems and the limited range of decisions considered, it offers promising directions for additional research.

Third, as in the development of any model, it is necessary to consider trade-offs between complexity and operability. As noted previously, we have chosen to include in the GGPS model only variables that met specified criteria. Although this may appear restrictive, other variables could be fitted to the model, perhaps for specific research purposes. For instance, a researcher interested in the role of group size in group problem solving (e.g., Cummings, Huber, & Arendt, 1974; Kerr, 1989; Yetton & Bottger, 1983) could consider how size might be expected to affect various elements of the model. Similarly, many individual differences might be relevant, perhaps as determinants of model components or as moderators of the impact of antecedents. For instance, although the GGPS model is not restricted to high-threat situations, the roles of individual-differences variables found to be important in such situations—including locus of control (e.g., Vitaliano, Russo, & Maiuro, 1987), Type A behavior (e.g., Rhodewalt, Strube, Hill, & Sansone, 1988), and self-esteem (e.g., Mayton, 1986)—could readily be considered within the framework of the model.

Finally, although many of the additional variables in the GGPS model invite concrete operationalization, others may appear relatively intangible. These inherently more subjective variables will typically require more extended efforts for valid

operationalization. However, we have suggested specific, operational indicators of some such variables. For instance, in the case of the model's incorporation of a political perspective, we consider two specific variables—organizational political norms and members' political motives—and have identified potential indicators of those variables. Scales to assess those indicators have previously been developed and used (e.g., Kipnis, Schmidt, & Wilkinson, 1980; Welsh & Slusher, 1986).

The Allure of Groupthink

We have argued that whatever its actual validity, the groupthink phenomenon has been accepted more because of its intuitive appeal than because of solid evidence. The allure of groupthink in the absence of convincing supporting evidence is intriguing and deserves discussion. We suspect that the reliance on anecdote in many studies of groupthink probably contributes to the availability heuristic, playing on our preference for case, as opposed to base, data (Tversky & Kahneman, 1973); a concrete instance of the appearance of groupthink symptoms in a fiasco may be seen as compelling evidence, especially in the absence of base data.⁶ Furthermore, we have argued that the focus of groupthink case evidence on fiascoes has fostered illusory correlation.

It may also be the case that the groupthink perspective is consistent with our implicit theories of groups. Indeed, our references to the intuitive appeal of groupthink suggest that the phenomenon is somehow consistent with our preconceptions of effective, or ineffective, group functioning. The roles of implicit theories in influencing responses have been widely documented (see, e.g., Sternberg, 1985). Staw (1975) warned that implicit theories may distort informants' reports of organizational phenomena. One important characteristic of implicit theories is their "gap-filling" function (G. H. Bower, Black, & Turner, 1979; Graesser, Gordon, & Sawyer, 1979). In the context of groupthink, individuals observing a situation in which some groupthink characteristics are present may assume the existence of others.

As further evidence of the role of implicit theories, several researchers have found that feedback given to group members or observers about group performance affects the characteristics ascribed to those groups (Binning & Lord, 1980; Downey, Chacko, & McElroy, 1979; McElroy & Downey, 1982; Staw, 1975). Guzzo et al. (1986) found that feedback about group process affected evaluations of outcomes and that feedback about outcomes affected evaluations of process. Individuals who were told that a group had performed poorly were more likely to report instances of "poor" interaction processes, such as lack of willingness to hear other members' views. Thus, the focus on poor decision outcomes in groupthink research may lead to reports of instances of poor group functioning.

Factors that might have contributed to the allure of groupthink, including availability, illusory correlation, and implicit

⁶ Although Janis (1989) did discuss the availability heuristic, he discussed it as a factor influencing whether policymakers take warnings seriously rather than in this context.

theories of group processes, should be explicitly considered in future theory and research on group decision processes.

Implications

Our discussion to this point has a number of implications for group decision processes and related research. These relate to the potential for disconfirmation, importance of both the rational and political perspectives, decision outcomes, a typology of problem types, and choice of prescriptions for effective group functioning.

Potential for Disconfirmation

Perhaps most important, we consider it critical to address examination of group decision processes with an open mind. Starting with a statement such as Janis's (1982) definition of groupthink (i.e., "Groupthink refers to a deterioration of mental efficiency, reality testing, and moral judgment that results from in-group pressures," p. 9) invites the search for confirming evidence. Disconfirmation is the stuff of science. Greenwald, Pratkanis, Leippe, and Baumgardner (1986) stressed the dangers of research that is theory confirming, rather than theory testing, and warned against the conduct of studies in which the researcher holds a strong prior belief about the outcome.

Rational and Political Perspectives

Group processes are seldom purely rational. Our discussion suggests that it may be inappropriate to ignore the political aspects of group functioning and artificial to treat the rational and political perspectives as being mutually exclusive. Our integrative perspective of group problem solving views the two aspects as coexisting and political behaviors as being entirely rational in some situations (and vice versa). Most organizations may "operate under the guise of rationality with some elements of power and politics thrown in" (Pfeffer, 1981, p. 344). Therefore, there may be more going on than meets the "objective" eye.

Decision Outcomes

Our discussion has stressed the need to consider many outcomes of group problem solving. As Pfeffer (1981) pointed out, "in ongoing organizations, implementation of and commitment to the decision may be as important, if not more so, than the decision itself" (p. 156). Additionally, we have argued that future motivation of the group and leader, future use of the group, affective responses, and other dependent variables may also be important outcomes for groups, group members, or both.

Typology of Problem Types

A typology of problem types would help to foster a more systematic appraisal of group problem solving. Some dimensions of that typology—not necessarily independent—have been suggested by our discussion to this point: crisis versus noncrisis, recurring versus nonrecurring, important versus un-

important, and successful versus unsuccessful. The need for such a typology is evident from the groupthink literature. Case support for groupthink has been drawn largely from crisis, nonrecurring, important, unsuccessful decisions. Conversely, many group problems, such as decisions by individuals at high levels in organizations, may be noncrisis, important, recurring or nonrecurring, successful or unsuccessful.

Others have called for and developed typologies of problem types. For instance, to illustrate the failure of psychological experiments to fully and adequately address the domain of intellectual tasks, Edwards (1983) presented a taxonomy of intellectual tasks and their performers. It included dimensions such as easy versus difficult, realistic versus unrealistic, time pressures versus lack of time pressures, tools available versus tools unavailable, and laboratory versus job versus life. Several other task typologies have been proposed (e.g., de Vries-Griever & Meijman, 1987; Fleishman, 1982; Shaw, 1973; Steiner, 1972) focusing on dimensions such as information-processing requirements, coordination requirements, required task behaviors, and ability requirements. However, such typologies have not been constructed specifically for application to group problem solving, and we feel that they fail to incorporate important dimensions.

Choice of Prescriptions for Effective Group Functioning

Our discussion suggests that prescriptions for appropriate group functioning must consider cost, feasibility, and scope. Some changes, such as the use of outside experts, may be costly, whereas others, such as instructing leaders to be impartial, may be naive. Furthermore, as noted by Luechauer (1989), once groups have begun to engage in dysfunctional modes, it may be too late for the recommendations to be used because the groups will simply not perceive a need for them. In addition, regardless of the objective value of application of these remedies, they will not be used if the group decision process is consciously being manipulated for political ends.

Perhaps most important, as noted previously, a focus on specific remedies for particular decision situations may be misguided. It may be more appropriate to assess and potentially alter organizational culture or contingencies of reinforcement rather than to implement specific techniques in the hopes of overcoming the consequences of the group's decision environment. This suggests the need for explicit consideration of systemic changes.

Directions for Future Research

We have already identified several directions for future research, but a few others deserve explicit consideration. As noted earlier, it may be infeasible to attempt simultaneous use and testing of the entire GGPS model. Just as a variety of prescriptions may be appropriate for the effective psychological and physiological functioning of the human body, multiple prescriptions for effective group functioning may emerge from future research. Similarly, just as it may be infeasible to test a model of the entire human body, it may be necessary to examine portions of the model most congruent with the focus of the researcher.

Although the complexity of the GGPS model makes a test of the full model difficult, it permits testing of important issues on which the groupthink model is silent. For instance, the political perspective would suggest that the presence of self-censorship may reflect a conscious strategy by members to adhere to a politically advantageous alternative. As such, research should further consider alternative determinants of particular conformity behaviors. In addition, the GGPS model allows examination of the relation between presumed negative factors such as cohesion and member homogeneity and potential positive consequences such as member satisfaction. Furthermore, emergent group characteristics may influence fundamental aspects of the decision process beyond the suggestions of groupthink. For instance, perceived member unanimity may lead to increased use of a consensus decision rule, which may influence factors such as the role of dissent.

Adequate testing of the GGPS model will require the use of an expanded set of methodologies to capture the richness and complexity of group problem solving. Studies should include actual problem solvers in a variety of ongoing, real-world decision situations as well as use of behavioral simulations (e.g., Kaplan, Lombardo, & Mazique, 1985; McCall & Lombardo, 1982; Stumpf, Mullen, Hartman, Dunbar, & Berliner, 1983) and qualitative methodologies (e.g., Miles & Huberman, 1984; Strauss & Corbin, 1990). In addition, the use of recalled-problems methodology (Vroom & Yetton, 1973) may permit group members to provide "thick" descriptions of past decision situations in which they have been involved. Such methodology permits recall of actual decision situations as well as of associated situational characteristics and of subsequent developments regarding problem implementation, outcomes, group member responses, and so on. Although there are obvious problems of recall, including memory lapses and perceptual distortion (e.g., Rossi, Wright, & Anderson, 1983; Turner & Martin, 1984), these can be minimized through careful planning and execution of the questioning process (e.g., Fowler, 1984). In addition to choice of appropriate methodologies, it will be necessary, as noted earlier, to pay additional attention to issues of measurement and operationalization as well as to movement toward prescription.

Furthermore, it is common practice to call for longitudinal studies of a phenomenon of interest; we do so here. Such studies would permit more adequate examination of the group problem-solving process, including timing of convergence to a group decision. They could, for instance, permit differentiation between convergence, which is inherent in the choice-making stage of the problem-solving process, and premature convergence, which may be pathological.

Finally, we suggested earlier that implicit theories may help to explain the appeal of the groupthink phenomenon. It would be instructive to directly address implicit theories of group problem solving, perhaps through use of cognitive mapping procedures (Aldag & Stearns, 1988; Bougon, 1983; Jones, 1986). This would permit examination of how antecedent conditions, emergent group characteristics, decision process characteristics, and outcomes are associated in such implicit theories.

Conclusion

Group problem solving is a complex and challenging phenomenon. Comprehensive models are needed to guide re-

searchers and practitioners in dealing with this phenomenon. The groupthink model has served a valuable role in generating interest in group problem-solving processes and in acting as a catalyst for associated theory and research. However, the model has not incorporated two decades of theory and research, has received limited empirical support, and is restrictive in scope. Recent theory and research, as well as critical evaluation of the model, have suggested the need for an expanded, integrative model of group problem solving.

Building in part on the groupthink model, we offer the GGPS model as such a framework. On the basis of a problem-solving perspective and incorporating prior theory and research, it is intended for a broad range of problem situations. The GGPS model relaxes restrictive assumptions of groupthink, recasts certain groupthink variables, uses less value-laden terminology, and includes several additional process and outcome variables. Furthermore, it explicitly recognizes the roles of political factors in group problem solving.

We present the GGPS model as a foundation for further testing and refinement. Researchers should recognize the complex, dynamic nature of group problem solving and use a broad range of methodologies and problem situations while avoiding explicit search for confirmation. Indeed, we will consider the GGPS model to have played a useful role if rigorous research, however disconfirming, leads to new knowledge concerning group problem-solving processes. The need to be open to dissonant information is, of course, a central lesson of Janis's work. As such, we see the GGPS model as being consistent with the spirit of the groupthink model and as serving to maintain the viability of its key elements and themes.

References

- Aldag, R. J., & Stearns, T. M. (1988). Issues in research methodology. *Journal of Management*, 14, 253-276.
- Alderfer, C. P. (1972). *Existence, relatedness, and growth: Human needs in organizational settings*. New York: Free Press.
- Bass, B. M. (1983). *Organizational decision making*. Homewood, IL: Irwin.
- Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18, 19-31.
- Bazerman, M. H. (1990). *Judgment in managerial decision making* (2nd ed.). New York: Wiley.
- Bazerman, M. H., Magliozzi, T., & Neale, M. A. (1985). The acquisition of an integrative response in a competitive market. *Organizational Behavior and Human Performance*, 34, 294-313.
- Binning, J. F., & Lord, R. G. (1980). Boundary conditions for performance cue effects on group process ratings: Familiarity versus type of feedback. *Organizational Behavior and Human Performance*, 26, 115-130.
- Bougon, M. (1983). Uncovering cognitive maps: The self-Q technique. In G. Morgan (Ed.), *Beyond method: Strategies for social research* (pp. 173-188). Newbury Park, CA: Sage.
- Bower, G. H., Black, J. B., & Turner, T. J. (1979). Scripts in memory for text. *Cognitive Psychology*, 11, 177-220.
- Bower, T. G. R. (1976). Repetitive processes in child development. *Scientific American*, 235(5), 38-47.
- Brandstatter, H., Davis, J. H., & Schuler, H. (Eds.). (1978). *Dynamics of group decisions*. Newbury Park, CA: Sage.
- Burleson, B. R., Levine, B. J., & Samter, W. (1984). Decision-making

- procedure and decision quality. *Human Communication Research*, 10, 557-574.
- Callaway, M. R., & Esser, J. K. (1984). Groupthink: Effects of cohesive-ness and problem-solving procedures on group decision-making. *Social Behavior and Personality*, 12, 157-164.
- Callaway, M. R., Marriott, R. G., & Esser, J. K. (1985). Effects of dominance on group decision making: Toward a stress-reduction explanation. *Journal of Personality and Social Psychology*, 49, 949-952.
- Campbell, J. P. (1986). Labs, fields, and straw issues. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 269-279). Lexington, MA: Lexington Books.
- Cerami, C. A. (1972, December). Group thinking: A pitfall for any company. *Nation's Business*, pp. 58-60.
- Collins, B. E., & Guetzkow, H. (1964). *A social psychology of group processes for decision-making*. New York: Wiley.
- Courtright, J. A. (1978). A laboratory investigation of groupthink. *Communication Monographs*, 5, 229-246.
- Culbertson, F. M. (1977). Search for help for parents of autistic children or beware of professional group think. *Journal of Clinical Child Psychology*, 6, 63-65.
- Cummings, L. L., Huber, G. P., & Arendt, E. (1974). Effects of size and spatial arrangements on group decision making. *Academy of Management Journal*, 17, 460-475.
- Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). *Group techniques for program planning*. Glenview, IL: Scott, Foresman.
- de Vries-Griever, A. H., & Meijman, T. F. (1987). The impact of abnormal hours of work on various modes of information processing: A process model of human costs of performance. *Ergonomics*, 30, 1287-1299.
- Downey, H. K., Chacko, T. I., & McElroy, J. (1979). Attribution of the "causes" of performance: A constructive, quasi-longitudinal replication of the Staw (1975) study. *Organizational Behavior and Human Performance*, 24, 287-299.
- Eden, D. (1988). Creating expectation effects in OD: Applying self-fulfilling prophecy. *Research in Organizational Change and Development*, 2, 235-267.
- Eden, D., & Ravid, G. (1982). Pygmalion vs. self-expectancy: Effects of instructor- and self-expectancy on trainee performance. *Organizational Behavior and Human Performance*, 30, 351-364.
- Edwards, W. (1983). Human cognitive capabilities, representativeness, and ground rules for research. In P. Humpreys, O. Svenson, & A. Vari (Eds.), *Analyzing and aiding decision processes* (pp. 507-513). Amsterdam: North-Holland.
- Einhorn, H. J. (1980). Overconfidence in judgment. *New Directions for Methodology of Social and Behavioral Science*, 4, 1-16.
- Elbing, A. (1978). *Behavioral decisions in organizations* (2nd ed.). Glenview, IL: Scott, Foresman.
- Esser, J. K., & Lindoerfer, J. S. (1989). Groupthink and the space shuttle Challenger disaster: Toward a quantitative case analysis. *Journal of Behavioral Decision Making*, 2, 167-177.
- Field, R. H. (1982). A test of the Vroom-Yetton normative model of leadership. *Journal of Applied Psychology*, 67, 523-532.
- Fleishman, E. A. (1982). Systems for describing human tasks. *American Psychologist*, 37, 821-834.
- Flowers, M. L. (1977). A laboratory test of some implications of Janis's groupthink hypothesis. *Journal of Personality and Social Psychology*, 33, 888-895.
- Fowler, F. J., Jr. (1984). *Survey research methods*. Newbury Park, CA: Sage.
- Gist, M. E. (1987). Self-efficacy: Implications for organizational behavior and human resource management. *Academy of Management Review*, 12, 472-485.
- Gladstein, D. L., & Reilly, N. P. (1985). Group decision making under threat: The Tycoon game. *Academy of Management Journal*, 28, 613-627.
- Graesser, A. C., Gordon, S. G., & Sawyer, J. D. (1979). Recognition memory for typical and atypical actions in scripted activities: Tests of a script pointer + tag hypothesis. *Journal of Verbal Learning and Verbal Behavior*, 18, 319-332.
- Greenwald, A. G., Pratkanis, A. R., Leippe, M. R., & Baumgardner, M. H. (1986). Under what conditions does theory obstruct research progress? *Psychological Review*, 93, 216-229.
- Guzzo, R. A. (1986). Group decision making and group effectiveness in organizations. In P. S. Goodman & Associates (Eds.), *Designing effective work groups* (pp. 34-71). San Francisco: Jossey-Bass.
- Guzzo, R. A., Wagner, D. B., Maguire, E., Herr, B., & Hawley, C. (1986). Implicit theories and the evaluation of group process and performance. *Organizational Behavior and Human Performance*, 37, 279-295.
- Hall, D. T., & Nougaim, K. E. (1967). An examination of Maslow's need hierarchy in an organizational setting. *Organizational Behavior and Human Performance*, 3, 12-35.
- Hardy, C. (1985). The nature of unobtrusive power. *Journal of Management Studies*, 22, 384-399.
- Hart, P. T. (1991). Irving L. Janis' *Victims of groupthink*. *Political Psychology*, 12, 247-278.
- Henderson, J. (1987). Getting rid of groupthink—Let's change the legislative process. *Canadian Medical Association Journal*, 136, 881-883.
- Hensley, T. R., & Griffin, G. W. (1986). Victims of groupthink: The Kent State University Board of Trustees and the 1977 gymnasium controversy. *Journal of Conflict Resolution*, 30, 497-531.
- Hewitt, J. P., & Hewitt, M. L. (1986). *Introducing sociology*. Englewood Cliffs, NJ: Prentice Hall.
- Hogarth, R. M. (1980). *Judgment and choice*. New York: Wiley.
- Homans, G. (1950). *The human group*. New York: Harcourt, Brace.
- Horn, J. L. (1976). Human abilities: A review of research and theory in the early 1970s. *Annual Review of Psychology*, 27, 437-485.
- House, R. J., & Mitchell, T. R. (1974). Path-goal theory of leadership. *Journal of Contemporary Business*, 3, 81-98.
- Howell, J. M., & Frost, P. J. (1989). A laboratory study of charismatic leadership. *Organizational Behavior and Human Decision Processes*, 43, 243-269.
- Huber, G. P. (1980). *Managerial decision making*. Glenview, IL: Scott, Foresman.
- Jahoda, M. (1953). The meaning of psychological health. *Social Casework*, 34, 349.
- Janis, I. L. (1971, November). Groupthink. *Psychology Today*, pp. 43-46, 74-76.
- Janis, I. L. (1972). *Victims of groupthink*. Boston: Houghton Mifflin.
- Janis, I. L. (1982). *Groupthink* (2nd ed.). Boston: Houghton Mifflin.
- Janis, I. L. (1985). International crisis management in the nuclear age. *Applied Social Psychology Annual*, 6, 63-86.
- Janis, I. L. (1989). *Crucial decisions: Leadership in policymaking and crisis management*. New York: Free Press.
- Janis, I. L., & Mann, L. (1977). *Decision making: A psychological analysis of conflict, choice, and commitment*. New York: Free Press.
- Jervis, R. (1989). Political psychology: Some challenges and opportunities. *Political Psychology*, 2, 481-493.
- Jones, S. (1986). Addressing internal politics: A role for modeling in consultant-client interaction. *Small Group Behavior*, 17, 67-82.
- Kaplan, R. E., Lombardo, M. M., & Mazique, M. S. (1985). A mirror for managers: Using simulation to develop management teams. *Journal of Applied Behavioral Science*, 21, 241-253.
- Kerr, N. L. (1989). Illusions of efficacy: The effects of group size on perceived efficacy in social dilemmas. *Journal of Experimental Social Psychology*, 25, 287-313.

- Kipnis, D., Schmidt, S. M., & Wilkinson, I. (1980). Intraorganizational influence tactics: Explorations in getting one's way. *Journal of Applied Psychology, 65*, 440-452.
- Kleinmuntz, B. (1990). Why we still use our heads instead of formulas: Toward an integrative approach. *Psychological Bulletin, 107*, 296-310.
- Lawler, E. J., & Bacharach, S. B. (1983). Political action and alignments in organizations. In S. B. Bacharach (Ed.), *Research in the sociology of organizations* (Vol. 2, pp. 83-107). Greenwich, CT: JAI Press.
- Leana, C. R. (1985). A partial test of Janis' groupthink model: Effects of group cohesiveness and leader behavior on defective decision making. *Journal of Management, 11*, 5-17.
- Leavitt, H. (1975). Suppose we took groups seriously. In E. L. Cass & F. G. Zimmer (Eds.), *Man and work in society* (pp. 67-77). New York: Van Nostrand Reinhold.
- Liden, R. C., & Mitchell, T. R. (1988). Ingratiation behaviors in organizational settings. *Academy of Management Review, 13*, 572-587.
- Longley, J., & Pruitt, D. G. (1980). Groupthink: A critique of Janis' theory. In L. Wheeler (Ed.), *Review of personality and social psychology* (pp. 507-513). Newbury Park, CA: Sage.
- Ludwig, S. (1973). Dangers of group thinking. *International Management, 285*, 69-70.
- Luechauer, D. L. (1989, August). *Groupthink revisited: A dramaturgical approach*. Paper presented at the meetings of the Academy of Management, Washington, DC.
- Maier, N. R. F. (1976). Assets and liabilities in group problem solving: The need for an integrative function. *Psychological Review, 74*, 239-249.
- Manz, C. C., & Sims, H. P., Jr. (1982). The potential for "groupthink" in autonomous work groups. *Human Relations, 35*, 773-784.
- March, J. G. (1962). The business firm as a political coalition. *Journal of Politics, 24*, 662-678.
- March, J. G. (1976). The technology of foolishness. In J. G. March & J. P. Olsen (Eds.), *Ambiguity and choice in organizations* (pp. 69-81). Bergen, Norway: University Publishing House.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*, 370-396.
- Maslow, A. H. (Ed.). (1959). *New knowledge in human values*. Chicago: Regnery.
- Mayton, D. M. (1986). Personality correlates of nuclear war threat perception. *Journal of Social Psychology, 126*, 791-800.
- McCall, M. W., & Lombardo, M. M. (1982). Using simulation for leadership and management research: Through the looking glass. *Management Science, 28*, 533-549.
- McCauley, C. (1989). The nature of social influence in groupthink: Compliance and internalization. *Journal of Personality and Social Psychology, 57*, 250-260.
- McElroy, T. C., & Downey, H. K. (1982). Observation in organizational research: Panacea to the performance-attribution effect? *Academy of Management Journal, 25*, 822-835.
- Merton, R. K. (1948). The self-fulfilling prophecy. *Antioch Review, 8*, 193-210.
- Miles, M. B., & Huberman, A. M. (1984). *Qualitative data analysis: A sourcebook of new methods*. Newbury Park, CA: Sage.
- Montanari, J. R., & Moorhead, G. (1989). Development of the Groupthink Assessment Inventory. *Educational and Psychological Measurement, 49*, 209-219.
- Moorhead, G. (1982). Groupthink: Hypothesis in need of testing. *Group & Organization Studies, 7*, 429-444.
- Moorhead, G., & Montanari, J. R. (1982). Groupthink: A research methodology. In G. P. White (Ed.), *Proceedings of the 14th Annual Meeting of the American Institute for Decision Sciences, 1*, 380-382.
- Moorhead, G., & Montanari, J. R. (1986). An empirical investigation of the groupthink phenomenon. *Human Relations, 39*, 399-410.
- Myers, D. G., & Lamm, H. (1976). The group polarization phenomenon. *Psychological Bulletin, 83*, 602-627.
- Nemeth, C. J. (1986). Differential contributions of majority and minority influence. *Psychological Review, 93*, 23-32.
- Nemeth, C. J., & Staw, B. M. (1989). The tradeoffs of social control and innovation in groups and organizations. *Advances in Experimental Social Psychology, 22*, 175-210.
- Nemiroff, P. M., & Pasmore, W. A. (1975). Lost at sea: A consensus-seeking task. In J. E. Jones & W. P. Pfeiffer (Eds.), *The 1975 annual handbook for group facilitators* (pp. 28-34). La Jolla, CA: University Associates.
- Osborn, A. F. (1963). *Applied imagination* (3rd ed.). New York: Scribner.
- Ouchi, W. G. (1981). *Theory Z*. Reading, MA: Addison-Wesley.
- Park, W. (1990). A review of research on groupthink. *Journal of Behavioral Decision Making, 3*, 229-245.
- Parsons, T., & Smelser, N. J. (1956). *Economy and society*. New York: Free Press.
- Pfeffer, J. (1981). *Power in organizations*. Marshfield, MA: Pitman & Sons.
- Piaget, J. (1932). *The moral judgment of the child*. New York: Harcourt, Brace.
- Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Human Development, 15*, 3-11.
- Poole, M. S. (1983). Decision development in small groups: III. A multiple sequence model of group decision development. *Communication Monographs, 50*, 321-341.
- Poole, M. S. (1985). Tasks and interaction sequences: A theory of coherence in group decision-making interaction. In R. L. Street, Jr. & J. N. Cappella (Eds.), *Sequence and pattern in communicative behavior* (pp. 206-224). London: Arnold.
- Poole, M. S., & Doelger, J. A. (1986). Developmental processes in group decision-making. In R. Y. Hirokawa & M. S. Poole (Eds.), *Communication and group decision making* (pp. 35-62). Newbury Park, CA: Sage.
- Poole, M. S., & Roth, J. (1989a). Decision development in small groups: IV. A typology of decision paths. *Human Communication Research, 15*, 323-356.
- Poole, M. S., & Roth, J. (1989b). Decision development in small groups: V. Test of a contingency model. *Human Communication Research, 15*, 549-589.
- Posner-Weber, C. (1987). Update on groupthink. *Small Group Behavior, 18*, 118-125.
- Presidential Commission on the Space Shuttle Challenger Accident. (1986). *Report of the Presidential Commission on the Space Shuttle Challenger Accident*. Washington, DC: Author.
- Rhodewalt, F., Strube, M. J., Hill, C. A., & Sansone, C. (1988). Strategic attribution and Type A behavior. *Journal of Research in Personality, 22*, 60-74.
- Rohrbaugh, J. (1979). Improving the quality of group judgment: Social judgment analysis and the Delphi technique. *Organizational Behavior and Human Performance, 24*, 73-92.
- Rosenblum, E. H. (1982). Groupthink: One peril of group cohesiveness. *Journal of Nursing Administration, 12*, 27-31.
- Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom: Teacher expectation and student intellectual development*. New York: Holt, Rinehart & Winston.
- Rossi, P. H., Wright, J. D., & Anderson, A. B. (1983). *Handbook of survey research*. San Diego, CA: Academic Press.
- Sanders, B. D. (1980). Avoiding the groupthink zoo. *Supervision, 42*, 10-13.
- Schriesheim, C. A., & Von Glinow, M. A. (1977). The path-goal theory

- of leadership: A theoretical and empirical analysis. *Academy of Management Journal*, 20, 398-405.
- Scriven, M. (1976). Maximizing the power of causal investigations: The modus operandi method. *Evaluation Studies Review Annual*, 1, 101-118.
- Seashore, S. E. (1954). *Group cohesiveness in the industrial work group*. Ann Arbor: University of Michigan Press.
- Seligman, M. E. P. (1991). *Learned optimism*. New York: Knopf.
- Shaw, M. E. (1973). Scaling group tasks: A method for dimensional analysis. *JSAS: Catalog of Selected Documents in Psychology*, 3, 8 (Ms. No. 294).
- Shaw, M. E. (1981). *Group dynamics* (3rd ed.). New York: McGraw-Hill.
- Smith, S. (1984). Groupthink and the hostage rescue mission. *British Journal of Political Science*, 15, 117-126.
- Snyder, M. (1974). The self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, 30, 526-537.
- Staw, B. M. (1975). Attribution of the "causes" of performance: A general alternative interpretation of cross-sectional research on organizations. *Organizational Behavior and Human Performance*, 13, 414-432.
- Steiner, I. D. (1972). *Group process and productivity*. San Diego, CA: Academic Press.
- Steiner, I. D. (1976). Task-performing groups. In J. W. Thibaut, J. T. Spence, & R. C. Carson (Eds.), *Contemporary topics in social psychology* (pp. 393-422). Morristown, NJ: General Learning Press.
- Sternberg, R. J. (1985). Implicit theories of intelligence, creativity, and wisdom. *Journal of Personality and Social Psychology*, 49, 607-627.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Stumpf, S. A., Freedman, R. D., & Zand, D. E. (1979). Judgmental decisions: A study of interactions among group membership, group functioning, and the decision situation. *Academy of Management Journal*, 22, 765-782.
- Stumpf, S. A., Mullen, T., Hartman, K., Dunbar, R., & Berliner, W. (1983). *Financial services industry simulation*. New York: New York University.
- Stumpf, S. A., Zand, D. E., & Freedman, R. D. (1979). Designing groups for judgmental decisions. *Academy of Management Review*, 4, 589-600.
- Sutton, C. D., & Woodman, R. W. (1989). Pygmalion goes to work: The effects of supervisor expectations in a retail setting. *Journal of Applied Psychology*, 74, 943-950.
- Tetlock, P. E. (1979). Identifying victims of groupthink from public statements of decision makers. *Journal of Personality and Social Psychology*, 35, 1314-1324.
- Turner, C. F., & Martin, E. (Eds.). (1984). *Surveying subjective phenomena* (Vol. 1). New York: Russell Sage Foundation.
- Turoff, M. (1971). Delphi and its potential impact on information systems. *AFIPS Proceedings*, 39, 317-326.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5, 202-232.
- Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *Journal of Business*, 59, S251-S278.
- Van de Ven, A. H., & Delbecq, A. L. (1971). Nominal versus interacting groups for committee decision-making effectiveness. *Academy of Management Journal*, 14, 203-212.
- Vitaliano, P. P., Russo, J., & Maiuro, R. D. (1987). Locus of control, type of stressor, and appraisal within a cognitive-phenomenological model of stress. *Journal of Research in Personality*, 21, 224-237.
- Von Bergen, C. W., Jr., & Kirk, R. J. (1978). Groupthink: When too many heads spoil the decision. *Management Review*, 67, 44-49.
- Vroom, V. H., Grant, L. D., & Cotton, T. S. (1969). The consequences of social interaction in group problem solving. *Organizational Behavior and Human Performance*, 4, 77-95.
- Vroom, V. H., & Jago, A. G. (1978). On the validity of the Vroom-Yetton model. *Journal of Applied Psychology*, 63, 151-162.
- Vroom, V. H., & Yetton, P. W. (1973). *Leadership and decision making*. Pittsburgh, PA: University of Pittsburgh Press.
- Wahba, M. A., & Bridwell, L. G. (1976). Maslow reconsidered: A review of research on the need hierarchy theory. *Organizational Behavior and Human Performance*, 15, 212-240.
- Weldon, E., & Gargano, G. M. (1985). Cognitive effort in additive task groups: The effects of shared responsibility on the quality of multiattribute judgments. *Organizational Behavior and Human Decision Processes*, 36, 348-361.
- Welsh, M. A., & Slusher, E. A. (1986). Organizational design as a context for political activity. *Administrative Science Quarterly*, 31, 389-402.
- Whyte, G. (1989). Groupthink reconsidered. *Academy of Management Review*, 14, 40-56.
- Yetton, P., & Bottger, P. (1983). The relationships among group size, member ability, social decision schemes, and performance. *Organizational Behavior and Human Performance*, 32, 145-159.
- Zander, A. (1982). *Making groups effective*. San Francisco: Jossey-Bass.

Received June 25, 1991

Revision received September 1, 1992

Accepted September 1, 1992 ■