

Threat, Cohesion, and Group Effectiveness: Testing a Social Identity Maintenance Perspective on Groupthink

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Although Janis's concept of groupthink is influential, experimental investigations have provided only weak support for the theory. Experiment 1 produced the poor decision quality associated with groupthink by manipulating group cohesion (using group labels) and threat to group members' self-esteem. Self-reports of some groupthink and defective decision-making symptoms were independently, but not interactively, affected by cohesion and threat. Experiment 2 confirmed the success of the cohesion manipulation. Experiment 3 replicated the poor-quality decision making observed in Experiment 1 and provided support for a social identity maintenance perspective on groupthink: Groups who operated under groupthink conditions but who were given an excuse for potential poor performance produced significantly higher quality decisions than groups who worked under groupthink conditions alone. The results are used to interpret the groupthink phenomenon as a collective effort directed at warding off potentially negative views of the group.

Janis (1972, 1982, 1989) defined *groupthink* as the extreme concurrence sought by decision-making groups. Groupthink is most likely to occur when a group experiences antecedent conditions such as high cohesion, insulation from experts, limited methodological search and appraisal procedures, directive leadership, and high stress combined with low self-esteem and little hope of finding a better solution than that favored by the leader or influential group members. Such conditions lead to symptoms of groupthink such as illusions of invulnerability, collective rationalization, belief in the inherent morality of the group, stereotypes of outgroups, pressure on dissenters, self-censor-

ship, illusions of unanimity, and self-appointed mindguards. Groupthink is hypothesized to result in poor quality decisions and defective decision-making symptoms such as incomplete survey of alternatives and objectives, failure to examine risks of preferred solution, failure to reappraise initially rejected alternatives, poor information search, selective bias in processing information at hand, and failure to develop contingency plans.

Janis's concept of groupthink has been an influential one, frequently appearing in social psychology (Aronson, 1988; Deaux & Wrightsman, 1988; Myers, 1987; Raven & Rubin, 1976) and management (Steers, 1990) textbooks. The appeal of the concept is evidenced by the ease with which it can be applied to numerous group decisions such as Nazi Germany's decision to invade the Soviet Union in 1941, Israel's lack of preparedness for the October 1973 war, Ford Motor Company's decision to market the Edsel, Grunenthal Chemie's decision to market the drug thalidomide (Raven & Rubin, 1976), governmental decisions regarding earthquake retrofitting before the Loma Prieta earthquake (M. E. Turner & Pratkanis, 1991), the National Aeronautics and Space Administration's and Morton Thiokol's decision to launch the Challenger space shuttle (Aronson, 1988), the decision by top executives of the Buffalo Mining Company to continue to dump slag into the Buffalo River (Wheeler & Janis, 1980), the Carter Administration's decision to use military measures to rescue Iranian hostages (Ridgeway, 1983; Smith, 1984), the check-kiting scheme at E. F. Hutton (Moorhead & Griffin, 1989), and the potential for groupthink

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to occur in various work situations (Manz & Sims, 1982; Moorhead & Montanari, 1986). Nevertheless, the empirical evidence in support of groupthink has been, at best, mixed. Case and content analyses of naturalistic group decision making have sometimes obtained some support for the concept, whereas experimental investigations have obtained inconsistent results.

Case Studies of Groupthink

Janis (1972, 1982) first developed the concept of groupthink through qualitative analyses of defective decision making in the cases of the appeasement of Nazi Germany, Pearl Harbor, the Bay of Pigs, the North Korean invasion, the escalation of the Vietnam War, and the Watergate cover-up. Janis compared the decision-making processes involved in these fiascoes with those that resulted in more effective decision making such as the Cuban Missile Crisis and the Marshall Plan.

Tetlock (1979) conducted a more quantitative test of Janis's hypotheses by performing a content analysis of archival records of public statements made by key decision makers involved in the groupthink (North Korean invasion, Bay of Pigs, and Vietnam War escalation) and nongroupthink decisions (Marshall Plan and Cuban Missile Crisis) identified by Janis (1972). Results of this analysis suggested that decision makers in groupthink situations had more simplistic perceptions of policy issues and made more positive references to the United States and its allies. However, these decision makers did not engage in more out-group stereotyping. (See Tetlock, Peterson, McGuire, Chang, & Feld, 1992, for additional confirmation).

In a study of the decision to launch the Challenger space shuttle, Esser and Lindoerfer (1989) analyzed 88 statements referring to groupthink processes in the *Report of the Presidential Commission on the Space Shuttle Challenger Accident*. They found little evidence for the antecedent conditions of group cohesion (defined as mutual attraction to members), lack of impartial leadership, and homogeneity of members' backgrounds, but they did find some evidence that the team faced a highly stressful situation. Evidence was obtained for groupthink symptoms of illusion of invulnerability, rationalization, illusion of unanimity, pressure on dissenters, mindguards, and biased information processing. Evidence for other groupthink symptoms was inconclusive.

Hensley and Griffin (1986) found evidence for groupthink in the 1977 decision by the Kent State University board of trustees to build a gymnasium on the site of the shooting of students by the Ohio National Guard. The highly controversial decision was made by an isolated, highly cohesive group of trustees in a stressful situation. The board exhibited a wide range of groupthink symptoms (invulnerability, rationalization, stereotyping of enemies, etc.) and defective decision-making processes (incomplete survey of alternatives and objectives, poor information search, etc.).

Raven's (1974) analysis of groupthink in the Nixon White House during the Watergate era suggested that Janis's antecedent condition of cohesion required reformulation. Raven proposed that cohesion in this instance depended not so much on the presence of an esprit de corps but rather the desire to maintain group membership at all costs. According to Raven, the Nixon White House demonstrated such groupthink symptoms

as illusion of superior morality, illusion of invulnerability, illusion of unanimity, and mindguards (see Janis, 1982, for another discussion of the Watergate cover-up). However, the members of the White House team did not form a closely knit group with high esprit de corps, nor did they exhibit a high degree of mutual attraction and admiration for each other. According to Raven, groupthink stemmed from the low political self-esteem of Nixon's subordinates (none of whom had ever been elected to a political office) and the fact that "despite their personal antagonisms, all of them wanted with all their hearts and souls to be in that group and to be central to that group" (p. 310).

In sum, these lines of research provide some support for the groupthink theory. However, it is clear that inconsistent evidence regarding the conceptualization and consequences of cohesion, as well as the prevalence of groupthink and defective decision-making symptoms, does exist.

The use of historical materials is useful for "hypothesis construction" (Janis, 1982, p. ix). However, Janis (1982; see also Moorhead, 1982) suggested that controlled, experimental research is needed to identify cause-and-effect relations among groupthink antecedent conditions and processes. Experimental research on groupthink has sought to provide such development.

Experimental Research on Groupthink

Six experimental studies have attempted to manipulate multiple antecedent conditions of groupthink while assessing groupthink symptoms and group-decision effectiveness. These studies reported only limited evidence for groupthink symptoms and no evidence for decrements in group-decision effectiveness in groupthink treatments.

Three studies have examined the effects of cohesion and leadership style on groupthink processes. Flowers (1977) trained appointed leaders of 4-person groups to be either participative or directive. Groups composed of either friends (high cohesion) or strangers (low cohesion) proposed solutions to a case involving an elite high school faced with several crises (e.g., financial problems, senile teachers, influx of students of lower socioeconomic status, and a possible teacher strike). Supporting the groupthink hypothesis, groups with directive leaders proposed fewer solutions, shared less case information, and used fewer case facts before and after reaching decisions. But, in contradiction with the groupthink hypothesis, cohesion did not affect these processes. Agreement with the group decision and freedom to express opinions were not affected by leadership style or cohesion.

Using a similar design, Leana (1985) gave groups composed of either strangers (low cohesion) or students who had worked together in class for 15 weeks (high cohesion) 20 min to solve a case involving a hypothetical business crisis (i.e., selecting which of five employees should be laid off). Leaders of these groups were instructed to be either participative or directive. Groups with directive leaders proposed and discussed fewer solutions than did participative groups. Contrary to prediction, high-cohesion groups shared more information than low-cohesion groups. Evaluation of solution riskiness was unaffected by cohesion or leadership.

Finally, Fodor and Smith (1982) asked 5-person groups led by

an appointed leader who had either a high or low need for power to solve a business case. Groups were either told they had the possibility to win a reward if they had the best performance (high-cohesion treatment) or were not given an opportunity to win a reward (low-cohesion treatment). Groups with low-power leaders discussed more facts, considered more options, and demonstrated greater moral concern. However, group cohesion did not influence any dependent measures.

Research investigating the effects of cohesion and decision procedures also provides mixed support for the groupthink theory. Courtwright (1978) asked high-cohesion groups (told they had similar attitudes and that they should do well on the task) and low-cohesion groups (told they had incompatible attitudes and not to worry about the task) to recommend the best method for recruiting university students. Groups were either (a) instructed to air competing ideas, (b) instructed to strive for cooperation and examine few ideas, or (c) given no instructions. As predicted, high-cohesion groups told to limit their discussion made fewer statements of disagreement than all other groups. However, the number, creativity, quality, feasibility, significance, and competence of solutions were unaffected by cohesion and decision processes.

Along similar lines, Callaway and Esser (1984) found that decision quality on the Horse Trader and Lost at Sea tasks was unaffected by cohesion (manipulated using false feedback concerning the likelihood of the group being compatible or incompatible) or decision procedure guidelines (instructions that stressed full consideration of alternatives or no instructions). Other groupthink processes such as statements of disagreements, confidence in the group solution, and agreement with the group solution also were unaffected by manipulated variables (although an internal analysis using perceived cohesion measures provided some evidence for groupthink). In a second study, Callaway, Marriott, and Esser (1985) again found that decision quality on the Lost at Sea task was unaffected by decision procedures (as defined above) used by highly cohesive groups (formed on personality compatibility) composed of high- or low-dominance members.

Taken together, these results provide, at best, partial support for the groupthink theory. Not surprisingly, procedures designed to limit group discussion (e.g., directive leadership and instructions emphasizing the importance of avoiding disagreement) tend to produce fewer solutions, less sharing of information, and fewer statements of disagreement. In contrast to these results, cohesion generally has failed to affect any groupthink processes or indicators. (Note that cohesion has been manipulated in a variety of ways, conforming in varying degrees to traditional concepts of cohesion; see Point 3 below.) Finally, research has failed to demonstrate that antecedent conditions theoretically associated with groupthink actually impair decision quality (see also Park, 1990, for a methodological critique).

Toward the Reconciliation of Conflicting Results

The equivocal support for groupthink processes leads to the predicament of the disconfirmation dilemma (Greenwald & Ronis, 1981): Is the groupthink theory invalid or is it being tested improperly or is it a little of both? Longley and Pruitt (1980) have criticized Janis's theory on a number of counts in-

cluding the lack of a clear specification of the meaning of cohesion and an inadequate delineation of the causal links between antecedent conditions and groupthink symptoms. In the same vein, Steiner (1982), in noting the limited empirical support for cohesion, questioned Janis's causal ordering, suggesting that cohesion may be a consequence rather than an antecedent of groupthink. Steiner also observed that groupthink and defective decision-making symptoms can be obtained in a variety of situations not consistent with Janis's antecedent conditions. Finally, McCauley (1989) suggested that groupthink fails to adequately address the distinction between compliance and internalization. However, at least four concerns about the experimental research on groupthink that may account for the null or contradictory results can be raised.

First, the failure to link groupthink antecedent conditions with defective decision making may be partially attributable to the insensitivity of many decision-making tasks used to detect groupthink effects. Although the theory is vague in the specification of links among antecedents, symptoms, and decision effectiveness, it is at least necessary to use tasks on which solution quality ranges from very poor to very good—a range that may be lacking in many tasks used in previous research.

Second, research has been focused on a limited subset of antecedent conditions, namely, cohesion and methods for limiting group discussion. Direct manipulation of other antecedents possibly may be necessary for groupthink to occur.

Third, the procedures used to operationalize and control for the antecedent conditions may not fully capture the original meanings or intentions specified by the theory. For example, the operationalizations of stress and cohesion appear less consistent with Janis's original specifications (again perhaps due to the ambiguity of conceptualization, as noted by Longley & Pruitt, 1980). Consistent with traditional definitions of threat as potential harm or loss (Lazarus & Folkman, 1984), Janis (1982, p. 301) defined threat as the potential lowering of self-esteem and as the fear of failure or defeat. However, stress or threat, as an antecedent variable, primarily has been controlled by using tasks involving some form of crisis. Although these are ecologically valid sources of stress (i.e., they have mundane realism), they present few personal consequences for subjects and thus lack experimental realism (Aronson & Carlsmith, 1968).

Cohesion has been manipulated by forming groups on the basis of friendship (Flowers, 1977), previous classroom work together (Leana, 1985), and personality or attitude compatibility (Callaway & Esser, 1984; Callaway et al., 1985; Courtwright, 1978). These manipulations may not map closely onto Janis's definition of cohesion as the desire for the rewards of remaining in a pleasant group atmosphere or in a prestigious group. They also may not incorporate the implicit assumption made by the theory that groups identify themselves as a group. A self-categorization and social identity perspective suggests that the perception of others as group members rather than as unique persons may be a precondition for group cohesion (Tajfel, 1981; J. C. Turner, 1981, 1982; J. C. Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Note that the groups studied by Janis appear to conform to this precondition.

Finally, only a selected range of groupthink and defective decision-making symptoms have been investigated. Group information search, survey of objectives, development of contin-

gency plans, and rationalization have been largely untested. Given the equivocal support for the theory, examinations of broader ranges of groupthink indicators particularly are needed for specifying the theoretical links between antecedent conditions and groupthink symptoms.

The following experiment examined the effects of two antecedent conditions of groupthink, threat and cohesion, on group decision quality. Using a design approach (Greenwald, Pratkanis, Leippe, & Baumgardner, 1986), we attempted to maximize the possibility of obtaining groupthink in an experiment that (a) used a group discussion task with a broader range of solution quality, (b) examined the effects of a threat that incorporated personal consequences, (c) used a self-categorization and social identity perspective to develop a cohesion manipulation, and (d) examined a wider range of groupthink symptoms, including members' perceptions of decision processes.

Predictions

Given that previous work has not orthogonally manipulated threat and cohesion, it is essential to specify their possible effects on group performance and symptoms of groupthink and defective decision making. The groupthink theory, however, is equivocal with respect to delineating the causal relations among antecedents and consequences (Longley & Pruitt, 1980). Three possible interpretations can be raised. We will discuss each of these as they apply first to decision quality and then to self-reports of groupthink and defective decision-making symptoms.

Decision Quality

One perspective can be called the *strict* interpretation of groupthink. According to this interpretation, poor quality decision making should occur only in the high-threat, high-cohesion treatment because this is the only treatment with all groupthink antecedents present (Janis, 1982). Another perspective might be termed an *additive* interpretation: Each additional antecedent should result in increasingly poorer decision making. Thus, groups in the high-cohesion, high-threat condition should perform poorest, groups in the low-cohesion, low-threat cell the best, with the other two treatments at an intermediate level. However, little support exists for either the strict or additive interpretations: No published study documented impaired decision quality under the combined presence of the particular antecedents examined.

A third, *liberal* interpretation suggests that performance will depend on the unique situational properties invoked in each cell. The groupthink theory is not clear about the specific effects on decision quality when either cohesion or threat is high. However, prior research provides some guidance. Decision quality actually may be enhanced when cohesion alone is high. Apparently, cohesive groups are better at attaining their goals than are noncohesive groups (Shaw & Shaw, 1962). Thus, cohesive groups that have the goal of increased productivity will be more productive than both noncohesive groups with the same goal and cohesive groups that do not subscribe to such a goal (Seashore, 1954; Shaw & Shaw, 1962). In laboratory situations such as the one we are constructing, these goals (when not af-

ected by other conditions such as preexisting organizational factors) tend to favor higher productivity (Festinger, Back, Schachter, Kelley, & Thibaut, 1952; McGrath, 1984). The type of threat used in the study, by itself, should also produce higher quality decisions. This may occur because the threat induces greater motivation to perform effectively (e.g., Kruglanski & Freund, 1983). Prior research has provided little empirical evidence about how decision quality will be affected when both cohesion and threat are high. According to the groupthink hypothesis, decision quality will, of course, be impaired. Little evidence likewise exists regarding group performance quality under conditions of low cohesion and low threat. In the absence of the enhancing effects of either threat or cohesion, we might expect these groups to achieve lower levels of performance quality. Although not deriving his idea directly from the groupthink theory, Janis (1982), in discussing what might happen under these conditions, suggested that decision quality is likely to suffer because such groups may adopt a win-lose or bargaining approach to problem resolution that may result in defective decisions. Note that this is opposite to what would be predicted by either the strict or the additive interpretation of groupthink. It is, however, consistent with Janis's further theorizing on conditions not specifically treated by the groupthink theory and with Steiner's (1982) points regarding the multiple routes to poor quality decision making.

Self-Reports of Groupthink and Defective Decision-Making Symptoms

We can also apply each of these interpretations to self-reports of symptoms of groupthink and defective decision making. According to the strict interpretation, groupthink and defective decision-making symptoms should occur only in the groupthink cell—the high-cohesion, high-threat cell. According to an additive interpretation, groupthink and defective decision-making symptoms should become increasingly more pronounced with the presence of each additional antecedent. Thus, groups in the high-cohesion, high-threat condition should report the most apparent symptoms, groups in the low-cohesion, low-threat cell the least apparent symptoms, with the other treatments at an intermediate level. But, little empirical support for these interpretations exists: More pronounced symptoms have not been found under combinations of various antecedents in any experiment.

The liberal perspective suggests that self-reports of symptoms would again depend on the unique situational properties associated with each antecedent. For example, research indicates that cohesion may lead to more risky decisions (Thompson & Carsrud, 1976) as well as greater social influence, agreement, and conformity (Festinger, Schachter, & Back, 1950). Threat may increase rationalization about the decision (Janis & Mann, 1977), denial (Lazarus & Folkman, 1984), premature closure (Janis, 1982; Janis & Mann, 1977), and decreased participation in group decision processes (Hall & Mansfield, 1971). In addition, if our analysis of the experimental research on groupthink is correct, procedures limiting group discussion may reduce information-processing activities. Conversely, in the absence of such procedures, information-processing activities should be unaffected. However, little empirical evidence

exists regarding the impacts of the presence of both cohesion and threat on groupthink and defective decision-making symptoms.

Finally, one other point regarding the impact of antecedents on self-reports of symptoms is worth noting. If, as Janis (1982) suggested, one outcome of groupthink is a mutual effort among members of the group to maintain emotional equanimity, one must question whether self-reports of groupthink symptoms will, in fact, conform to theoretical predictions. Group members may not admit or even recognize that they have engaged in faulty decision processes. For example, in analyzing the decision to escalate the Vietnam war, Janis (1982) noted that groups may pressure a dissenter to limit objections to issues that do not threaten to shake the group's confidence in the rightness of their judgments. The doubter's presentation of opposing viewpoints (that actually do little to threaten the group) permits members to think that their group tolerates dissent. Such a group would report it actually tolerated dissent and encouraged evaluation of the group decision even though it did not. We might see similar outcomes regarding other groupthink symptoms.

Clearly, multiple theoretical predictions can be delineated. As Janis noted (1982), "until we have a good theory—one that is well supported by controlled experiments and systematic correlational research, as well as by case studies—we must recognize that any prescriptions we draw up are speculative inferences based on what little we know, or think we know, about when and why groupthink occurs" (p. 259). The following research was undertaken with the goal of shedding light on these processes.

Experiment 1

Method

Sample and Design

One hundred eighty undergraduate students participated in 3-person groups as part of a class assignment. Subject to schedule constraints, groups were randomly assigned to each condition of a 2 (cohesion: low vs. high) \times 2 (threat: low vs. high) between-subjects design.¹

Procedures

On arriving, subjects were randomly assigned seats in groups of 3. They received a brief overview of the study and informed consent materials along with the appropriate threat and cohesion manipulations. Groups then read and discussed Maier's (1952) Parasol Subassembly Case. On completing a write-up of the solution, group members notified the experimenter that they had reached a solution. Each subject then completed a postexperimental questionnaire assessing perceptions of group processes. Finally, subjects were fully debriefed.

Group Discussion Task

Groups were told they were staff analysts assembled to solve a problem. The Parasol Subassembly problem (Maier, 1952) describes a group of assembly workers producing automobile instrument panels whose group productivity has fallen below standard. Problems centered on an aging worker with limited abilities named Joe, whose work frequently piled up. The materials also included information concerning company procedures and environmental conditions that made

some solutions (i.e., hire additional workers) difficult or impossible to implement. Solution quality was determined using a 7-point coding scheme developed by Maier.

This task has two advantages for investigating groupthink. First, solution quality can range from solutions that violate case information (e.g., hire additional workers when none were available) to solutions that were adequate but somewhat incomplete (e.g., promote Joe) to solutions of high quality (e.g., rotate the workers on an hourly basis so that pileups do not occur). (These solutions would be coded as 1, 4, and 7, respectively, using Maier's, 1952, coding scheme.) The range of problem solutions map onto the range of decision quality for groups experiencing groupthink (see Steiner, 1982, for a discussion of this task and its relationship to groupthink). For example, groupthink processes of incomplete survey of alternatives, poor information search, selective information processing, and acceptance of a dominant solution would result in a low-quality decision. On the other hand, Maier reported that groups who fully consider and evaluate solution alternatives (i.e., groups not exhibiting groupthink symptoms) achieve solutions at the higher end of the quality scale. A second advantage of the parasol task is that groups tend to converge on a dominant solution of somewhat below average quality (i.e., removing the nonproductive worker from the station, which would be coded as a 3). This convergence is particularly likely to occur in groups that are not encouraged to explore additional alternatives. We used this dominant solution to supplant Janis's requirement of the advocacy of a single solution.

Independent Variables

Threat. Consistent with previous research, threat was manipulated by varying the degree of potential loss. High-threat groups were told their discussion was to be videotaped and that tapes of groups not exhibiting functional processes would be used for training in classes held both on campus and in corporations. Specifically they were told,

As you can see, we will be videotaping your session. We are doing this because we are planning to use these tapes for training both in classes here on campus and in classes held for corporations. We are particularly interested in groups that do not exhibit functional group processes. The task we are using is particularly good for this purpose because it shows that even people who think they are good at decision making actually may not be that good. What this means is that for these campus and corporate training sessions, we will only be using tapes of groups that have dysfunctional group processes.

A videocamera was prominently displayed and was apparently operating to film each group in the high-threat condition. In contrast, subjects assigned to the low-threat treatment were told the study was in the pilot stage. In specific, they were told, "The situation that you'll be working on is a pilot case that's never been used before." No videocameras were present in the low-threat treatment.

Cohesion. Group members assigned to the high-cohesion treatment were given name tags bearing separate group identities (e.g., Barracuda and Rattler) and wore their group names throughout the experiment. In addition, high-cohesion groups spent 5 min at the beginning of the study discussing and listing the similarities and commonalities among group members. In contrast, low-cohesion groups were not given group identities or name tags. These groups spent 5 min discussing and listing their dissimilarities and differences.

¹ Because of scheduling and room constraints, each class was randomly assigned to three of the four experimental conditions. Within each class, subjects were randomly assigned to groups, and groups were randomly assigned to one of the conditions running simultaneously.

Dependent Variables

Group performance. We used two measures of group effectiveness: Performance quality and performance speed. The primary measure of group performance was the quality of the solution each group developed. Solution quality was determined using Maier's (1952) coding scheme. Two independent coders rated each solution (interrater reliability = .85). Disagreements were resolved by negotiation. Performance speed was measured in minutes to solution.

Self-reports of groupthink symptoms. To assess perceptions of various symptoms of groupthink, subjects rated (on 7-point Likert scales) their (a) confidence in group solution (a measure of invulnerability), (b) annoyance at members raising viewpoints conflicting with group decision (pressure on dissenters), (c) discomfort at raising points others would find disagreeable (self-censorship), and (d) evaluation of other members' agreement with the group decision (unanimity). Rationalization was measured by asking subjects to list their thoughts about the group solution and to rate each thought as positive, negative, or neutral. Stereotyping of outgroups and the belief in the inherent morality of the group were not measured because they were not aspects of our experimental situation. The presence of mindguards may be inferred through the existence of limitations on expressions of opinions.

Self-reports of defective decision-making symptoms. Each subject was asked to (a) list the solution objectives considered (survey of objectives), (b) list all the solution alternatives the group considered (evaluation of multiple alternatives), (c) rate (on a 7-point Likert scale of agreement) the riskiness of the solution (evaluation of solution risk), (d) list other types of information they would have liked (limited information search), (e) list the case facts they could remember (biased information processing), and (f) list the contingency plans the group formulated (development of contingency plans). Both the solution alternative and the contingency plan measures were coded using the same scheme used for solution quality.

Table 1 presents the intercorrelations among the groupthink and defective decision-making measures. Most correlations were generally quite low, indicating that groupthink and defective decision-making symptoms seem to tap separate facets of the groupthink effect.

Manipulation Checks

So that we could assess perceptions of threat, subjects rated (on 7-point Likert scales) the degree of apprehension, tension, and stress they experienced. These measures were combined to form a threat scale ($\alpha = .70$). A cohesion index was formed by combining two questions assessing subjects' perceptions of the cohesiveness of their group ("My group was cohesive") and liking for their group members ("I liked my group members," scale $\alpha = .68$). Because it was not intercorrelated with the previous two questions, an item measuring subjects' desire to work with the group again was analyzed separately.

Results

Group Performance

Analysis of group-solution quality revealed a significant Cohesion \times Threat interaction, $F(1, 56) = 9.49, p < .01$. This interaction is depicted in Figure 1. As post hoc Tukey tests confirm, groups in the high-threat, high-cohesion treatment ($M = 2.39$) and groups in the low-threat, low-cohesion treatment ($M = 2.32$) formulated poorer quality solutions than groups in the high-threat, low-cohesion treatment ($M = 3.87; ps < .05$). Groups in the low-threat, high-cohesion treatment ($M = 3.4$) also produced higher quality decisions than groups in the high-threat, high-cohesion and low-threat, low-cohesion cells, al-

though the comparisons did not reach significance (all $ps > .05$). The poorer quality solutions of high-cohesion, high-threat groups is, of course, an example of the defective decision making associated with groupthink.² Analysis of the time-to-solution measure revealed no significant differences among experimental conditions (all $ps > .10$).

Self-Reports of Symptoms of Groupthink

Table 2 summarizes the results of separate two-way analyses of variance (ANOVAs) on measures of groupthink symptoms for Experiments 1 and 3. As column 3 indicates, cohesion and threat independently affected groupthink symptoms. Cohesion apparently contributed to the illusion of invulnerability, with high-cohesion subjects reporting greater confidence in their solution accuracy than low-cohesion subjects, $F(1, 56) = 2.91, p < .07$. Cohesion seemed to decrease self-censorship: High-cohesion subjects said they were more comfortable about raising dissenting points than low-cohesion subjects, $F(1, 56) = 5.88, p < .01$. This contrasts with previous groupthink research that has generally failed to find a strong relationship of any type between cohesion and self-censorship.

Threat appeared to contribute to rationalization about the group decision and pressure on dissenters. High-threat subjects generated more positive thoughts about the group solution than did low-threat subjects, $F(1, 56) = 6.28, p < .01$, and reported they were somewhat less annoyed when members raised issues conflicting with the solution than were low-threat subjects, $F(1, 56) = 2.7, p < .09$.

Self-Reports of Symptoms of Defective Decision Making

The third column of Table 3 summarizes results of separate two-way ANOVAs on measures of defective decision-making symptoms. Inspection of the table reveals that cohesion and threat independently affected separate defective decision-making symptoms. High-cohesion subjects assessed their solutions as less risky than did low-cohesion subjects, $F(1, 56) = 11.83, p < .001$. High-threat subjects reported they were somewhat less likely to stop searching for a solution once an acceptable alternative was found than were low-threat subjects, $F(1, 56) = 3.2, p < .07$.

Experimental treatments did not affect the number of case facts correctly recalled (all $ps > .10$), the number of case facts

² One potential alternative explanation for our pattern of results regarding group decision quality centers on the hypothesized inverted-U relationship between the arousal associated with threat and performance. We rejected this interpretation for two reasons. First, recent reviews of the literature provide little support for this relationship (cf. Lazarus & Folkman, 1984). Second, for the interpretation to be plausible, the pattern of decision-quality findings should match the pattern of reported tension and apprehension findings. These patterns are not similar. For example, subjects in the low-threat, high-cohesion treatment had superior performance yet reported lower levels of apprehension and tension. In addition, we also conducted an internal analysis using perceptual indices of threat that did not confirm this interpretation.

Table 1
Intercorrelations Among Symptoms of Groupthink and Defective Decision Making for Experiment 1

Symptoms	1	2	3	4	5	6	7	8	9	10	11
Groupthink											
1. Invulnerability	—										
2. Self-censorship	-.13	—									
3. Rationalization	.33	-.13	—								
4. Unanimity	.58	.20	.31	—							
5. Pressure on dissenters	-.21	.35	-.43	-.51	—						
Defective Decision Making											
6. Failure to examine risks	-.51	.29	-.39	-.42	.41	—					
7. Failure to reappraise alternatives	-.22	.18	-.32	-.23	.12	.15	—				
8. Omission in survey of objectives	-.18	-.08	.35	.13	-.12	-.19	.23	—			
9. Omission in survey of alternatives	-.18	-.20	-.01	-.06	-.08	.18	-.11	.12	—		
10. Information processing bias	.24	-.08	.46	.18	-.12	-.39	-.27	.39	-.16	—	
11. Poor information search	-.09	-.26	.009	-.12	.05	.11	-.11	.24	.27	.35	—
12. Contingency plans	.08	.04	.15	.13	-.12	-.30	.18	.30	.02	.15	.06

Note. Correlations greater than .36 are significant at the .01 level.

inaccurately recalled (all $ps > .10$), the number of items of additional information that were requested (all $ps > .15$), the average number of solution objectives (all $ps > .15$), and the average number of solution alternatives that group members listed (all $ps > .15$). Only 40 of 60 groups indicated they formulated contingency plans. Analysis of the quality of solution alternatives that subjects reported they discussed but ultimately rejected revealed a marginally significant Threat \times Cohesion interaction, $F(1, 56) = 2.89, p < .09$. Post hoc comparisons revealed that high-threat, high-cohesion treatment subjects produced significantly higher quality rejected alternatives ($M = 2.93$) than did low-threat, high-cohesion subjects ($M = 2.02, p < .05$). Other comparisons did not reach significance: Subjects in the low-cohesion, low-threat treatment ($M = 2.58$) and the low-cohesion, high-threat condition ($M = 2.43$) had similar solution alternatives of intermediate quality.

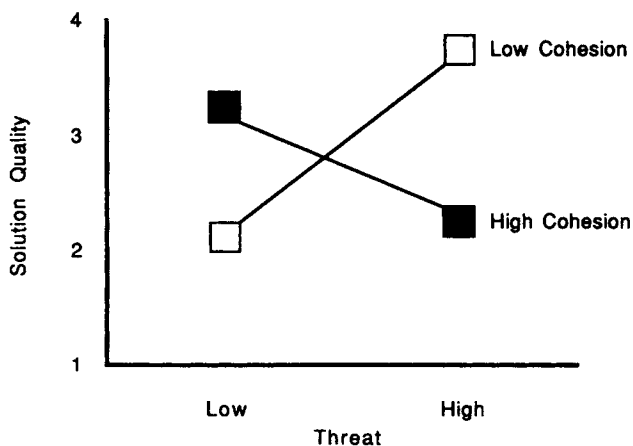


Figure 1. Mean decision quality for Experiment 1 as a function of threat and cohesion.

Manipulation Checks

Analysis of the threat index revealed a significant Threat \times Cohesion interaction, $F(1, 56) = 6.69, p < .01$. Post hoc comparisons indicated that high-threat, high-cohesion subjects ($M = 2.47$) reported significantly greater threat than high-threat, low-cohesion subjects ($M = 1.99$) and low-threat, high-cohesion subjects ($M = 2.01$) reported. Low-threat, low-cohesion subjects ($M = 2.38$) did not differ in threat assessments from subjects in the other three conditions. These multiple influences and the failure to observe a main effect for threat on threat assessments are consistent with research demonstrating the vagaries of producing perceptual confirmations of threat manipulations (see Lazarus & Folkman, 1984, for a review).

Analysis of the cohesion index revealed only a main effect of threat, $F(1, 56) = 3.92, p < .05$: High-threat subjects reported greater cohesion ($M = 6.08$) than did low-threat subjects ($M = 5.71$). This finding is consistent with some research showing that threat may, under certain conditions, be associated with heightened group cohesion (e.g., Dion, 1979). Desire to work with the group was unaffected by experimental treatments. However, cohesion had no effect on the perceptual measures. Although this is unexpected, it is consistent with both groupthink and group dynamics research (e.g., Back, 1951; Courtwright, 1978; Leana, 1985).

Discussion

Comparison of Our Results With Previous Research

The results of this study provide preliminary evidence for the defective decision making theoretically associated with groupthink. Group solution quality was poorer in the high-threat, high-cohesion and the low-threat, low-cohesion treatments than in the high-threat, low-cohesion treatment. Decision quality was also higher in the high-threat, low-cohesion and the low-threat, high-cohesion conditions (although this latter comparison did not attain conventional levels of signifi-

Table 2
Summary of Analyses on Groupthink Symptoms in Experiments 1 and 3

Groupthink symptoms	Measure	Experiment 1 results	Experiment 3 results ^a
Illusion of invulnerability	Confidence in solution	High cohesion = 5.86 Low cohesion = 5.46	No effects
Self-censorship	Discomfort at raising dissenting points	High cohesion = 1.64 Low cohesion = 1.99	No effects
Rationalization	Number of positive thoughts listed about group solution	High threat = 3.80 Low threat = 2.97	No effects
Illusion of unanimity	Agreement with group solution	No effects	No effects
Pressure on dissenters	Annoyance with dissenters	High threat = 1.68 Low threat = 2.07	No effects

^a Experiment 3 did not manipulate cohesion and thus does not serve as a test of the replicability of Experiment 1 cohesion effects.

cance). Thus, our findings demonstrate the hypothesized link between the antecedent conditions of cohesion and threat and ineffective group performance—a link not previously established in existing experimental research.

Our results replicated previous research demonstrating that threat and cohesion each may independently enhance decision quality. The poorer quality decisions observed in the low-threat, low-cohesion condition confirm Janis's ancillary theorizing about groups working under these conditions. He suggested that noncohesive groups working under nonthreatening circumstances should produce poor quality decisions because they adopt a win-lose bargaining strategy for reaching decisions. This poor quality decision making is also consistent with Steiner's (1982) points regarding groupthink as but one of many routes to defective decision making. Although the decision processes of noncohesive groups working under nonthreatening conditions should certainly provide interesting topics for future research, these groups are not examined further in this article because we are primarily concerned with the processes of

groups operating under the presence rather than the absence of groupthink conditions.

Although the lower quality decisions associated with groupthink were obtained, not all of the expected intervening conditions suggested by the theory were present. Failing to support either the strict or additive interpretation of groupthink, the symptoms of groupthink and of defective decision making were *not* most readily apparent in the groupthink treatment—that is, the high-threat, high-cohesion cell. Rather, cohesion and threat independently affected some symptoms of groupthink and defective decision making. Moreover, information-gathering strategies were unaffected by the antecedent conditions examined in this study. Thus, as we had expected, it is possible that some explicit mechanism for constraining group discussion (e.g., instructions favoring limited solution evaluation or participation) may be required to produce these symptoms.

The failure to support the strict or even the additive interpretations of groupthink is quite consistent with previous research.

Table 3
Summary of Analyses of Defective Decision-Making Symptoms in Experiments 1 and 3

Defective decision-making symptoms	Measure	Experiment 1 results	Experiment 3 results ^a
Failure to examine risks of preferred solution	Perceived risk of solution	Low cohesion = 3.02 High cohesion = 2.20	No effects
Failure to reappraise initially rejected alternatives	Perceptions of failure to reappraise once an acceptable solution was obtained	Low threat = 4.69 High threat = 3.55	Low threat = 4.85 High threat = 4.07 High threat, distraction = 4.16
Omission in survey of objectives	Number of solution objectives reported	No effects	No effects
Omission in survey of alternatives	Number of solution alternatives reported	No effects	No effects
Selective bias in processing information at hand	Number of correct and incorrect case facts recalled	No effects	No effects
Poor information search	Number of additional items of information requested	No effects	No effects
Failure to develop contingency plans	Number of contingency plans reported	No effects	No effects

^a Experiment 3 did not manipulate cohesion and thus does not serve as a test of the replicability of Experiment 1 cohesion effects.

For example, Flowers (1977) found that (a) directive leadership resulted in fewer solutions, less sharing of case information, and less use of case facts; (b) cohesion failed to affect any of these measures; and (c) measures of freedom to express opinions and agreement with the group decision were affected by neither leadership nor cohesion. Other inconsistencies are reported by Fodor and Smith (1982), Courtwright (1978), Esser and Lindoerfer (1989), Leana (1985), and Callaway and Esser (1984). In none of these studies were the groupthink symptoms most pronounced in the groupthink conditions—that is, in the conditions in which all manipulated antecedents were present. Thus, our results, in conjunction with previous research, suggest that a global, strict interpretation of groupthink is unwarranted. These results do point to a more liberal interpretation of groupthink in which specific antecedents are associated with unique situational properties that affect symptoms and decision making in more complex ways.

Groupthink as Social Identity Maintenance

Our overall pattern of data reinforces Janis's view of groupthink as a process in which group members attempt to maintain a shared, positive view of the functioning of the group (Janis, 1982) or as social identity maintenance. Groupthink can be viewed as a process by which group members attempt to maintain a shared positive view of the functioning of the group in the face of threat. This perspective highlights three important aspects of groupthink identified in the original case studies (but somewhat ignored in subsequent research). First, as a precondition to cohesion, members should categorize themselves as a group. This categorization has several important consequences. J. C. Turner (1981) suggested that groups given a social identity have a tendency to seek positive distinctiveness for the in-group and to exhibit a motivational bias for positive self-esteem. Thus, members tend to develop a positive image of the group and, importantly, are motivated to protect that image.

A second condition a social identity maintenance perspective highlights is that the group should experience a collective threat. Furthermore, this threat should involve an attack on the positive image of the group. The shared categorization induced by social identity provides a basis on which the collective threat can operate. The third factor underscored by a social identity perspective is that members may use a variety of tactics to protect the group image. Groups can exhibit a variety of groupthink processes and indicators as members attempt to maintain a positive image of the group. There are, in fact, interesting parallels between the symptoms of groupthink and the tactics of social identity maintenance or enhancement. For example, the groupthink symptom of stereotyping of outgroups bears a distinct resemblance to the out-group discrimination that can accompany the induction of social identities. Similarly, illusion of invulnerability and rationalization are similar, in some ways, to social identity maintenance strategies involving the selective enhancement of various group characteristics undertaken to achieve positive distinctiveness. Finally, pressures toward uniformity and self-censorship induced by groupthink can be compared with the process of referent informational influence (whereby group members form and subscribe to norms of their

shared categorization) that may accompany social identities (J. C. Turner, 1982).

Two concerns, however, can be raised about our first experiment. The first pertains to the effectiveness of our manipulations: Did we truly induce cohesion and threat? Recall that our perceptual manipulation checks did not correspond to the respective cohesion or threat conditions. The second involves the replicability of our findings: Did we really produce groupthink? Can the defective decision making be replicated? The following two studies were conducted to address these questions. The next experiment further tests our induction of cohesion and provides evidence for the success of this manipulation (in contrast to the manipulation check results obtained in Experiment 1). The third experiment is a partial replication and an extension of the first study. It replicates the first experiment by examining the decision-making effectiveness of cohesive groups operating under threatening and nonthreatening circumstances. (Again, we are primarily interested in the presence rather than the absence of groupthink antecedents and will not examine the decision effectiveness of groups working under conditions of low cohesion and low threat.) The third experiment also extends the first study by providing evidence for our perspective of groupthink as a collective effort directed at maintaining a positive identity in the face of a shared threat. To that end, we investigated the decision effectiveness of cohesive groups working under threat who are given a potential excuse for their poor performance. Additionally, this final study provides further evidence regarding the success of our threat induction (in contrast to the manipulation check results obtained in Experiment 1).

Experiment 2

Because of the failure to obtain perceptions corresponding to the cohesion manipulation, the question, of course, remains: Did we really induce cohesion in the first experiment? Previous groupthink research manipulating cohesion has (a) generally failed to produce the predicted effects of cohesion and (b) frequently failed to produce perceptual verifications of cohesion manipulations. In contrast to much groupthink research, the manipulation of cohesion used in the first study produced effects consistent with previous research on group cohesion and with a liberal interpretation of the groupthink theory. However, our research also adds to the growing body of evidence attesting to the difficulty of producing perceptual assessments of cohesion that correspond to its manipulation.

There are two possible explanations for why subjects' perceptions of group cohesion did not differ in accord with our empirical results. First, we may not have induced cohesion at all. Two factors argue against this. First, our findings replicate previous research that has documented consistent consequences of cohesion. Second, research using the self-categorization and social identity perspective has demonstrated that induction of social identities and group categorization may foster cohesion. Categorization can generate intragroup attraction or social cohesion by allowing the development of conditions traditionally conducive to the development of interpersonal attraction and also can reinforce the similarities between the individual and

other group members (J. C. Turner, 1981, 1982; J. C. Turner et al., 1987; see also Hogg & Abrams, 1988).

A second explanation for the inconsistency between perceptual measures and empirical consequences of cohesion in the first study pertains to the nature of the perceptual measures used. It is possible that the measures we used were not sensitive enough to capture meaningful differences in our subjects' perceptions of the cohesion manipulation. In particular, it is possible that the inclusion of items that more clearly and directly examine subjects' opinions of how their groups operated will produce perceptions corresponding to the manipulation. Thus, the use of more standard cohesion scales might demonstrate the effectiveness of our manipulations. The following experiment was conducted to test this possibility.

Method

Sample and Design

Seventy-two college students participated in groups of 3. Groups were randomly assigned to a two-group (cohesion: low vs. high) between-subjects design.

Procedures and Independent Variable

On arriving, subjects were randomly assigned seats in groups of 3. Subjects were told the study was part of a larger research project and that the purpose was to test some discussion materials. After receiving informed consent materials, subjects were given the appropriate cohesion manipulation. These manipulations were identical to those used in the first study. Subjects then completed a postexperimental questionnaire containing the dependent variables. Ten filler items assessing subjects' perceptions of the setting (noise level, temperature, lighting, etc.) and study attributes (interest, length, etc.) were included in the questionnaire to deter subjects from guessing the true nature of the experiment.

Dependent Variables

We used three separate measures of cohesion. The first scale, developed by Terborg, Castore, and DeNinno (1976), is composed of three items: "How would you describe the way you and other members of your group 'got along' on this task?" "Would you socialize with the members of your group outside of class?" and "Would you want to remain a member of this group on future projects?" ($\alpha = .81$). Scores on each item ranged from 1 to 7, with higher scores associated with more cohesion. The second cohesion scale, developed by J. C. Turner, Hogg, Turner, and Smith (1984), consists of four measures: "How much do you like the people in your group?" "How much do you want to carry on working in the group for your next task?" "How favorable are your feelings about your group?" and "How favorable are your feelings about other groups?" (reverse scaled; scale $\alpha = .89$). Scores on each item ranged from 1 to 9, with higher scores indicating more cohesion. Finally, we also included the two cohesion measures we used in the first study (scale $\alpha = .64$).

Results

Analysis of the Terborg et al. (1976) scale revealed a highly significant effect for cohesion treatment, $F(1, 22) = 11.45$, $p < .001$. Subjects in the high-cohesion treatment ($M = 17.59$) reported more cohesion than did subjects in the low-cohesion

treatment ($M = 15.16$). Analysis of the J. C. Turner et al. (1984) scale revealed similar results. A highly significant effect for cohesion treatment, $F(1, 22) = 6.76$, $p < .01$, was obtained. Once again, high-cohesion treatment subjects ($M = 29.14$) indicated more cohesion than low-cohesion treatment subjects ($M = 26.5$). In contrast, analysis of the cohesion index used in the first experiment showed no significant cohesion effect ($p > .5$).

Discussion

The results of this study suggest that our manipulation of cohesion was indeed successful. Both the Terborg et al. (1976) and the J. C. Turner et al. (1984) measures differed significantly and in the predicted direction as a function of manipulated cohesion. In contrast, our measure of cohesion, despite it being similar to measures used in previous research, did not produce significant differences in subjects' perceptions of the cohesiveness of their groups. Although it is not entirely clear why the scales produced different results, one possibility is that both the Terborg et al. (1976) and the J. C. Turner et al. (1984) scales were directly tied to more specific and more clearly articulated aspects of the group, whereas the scale used in the first study was both more diffuse and less specific.

Our findings again document the complexity of producing perceptual verification of cohesion inductions. Although the measures we developed were certainly consistent with prior research on cohesion, they failed to produce perceptual differences. But, two cohesion indices successfully used by other researchers did indeed document that subjects' perceptions confirmed our predictions. These findings also underscore the importance of the categorization aspect of group cohesion—that is, the categorization of others as members of the group rather than as unique individuals (see J. C. Turner et al., 1987). It is possible that previous cohesion inductions have paid inadequate attention to this consideration. For example, a typical manipulation asks one individual to assemble several friends for a discussion task. This manipulation does not ensure that the individuals actually categorize or come to view themselves as a group.

Finally, we note that this approach is not inconsistent with previous group dynamics conceptualizations of cohesion. The social identity aspect can be viewed as one force described in the Cartwright and Zander (1953) definition of cohesion as the resultant of all forces acting on members to remain in the group. This may suggest that, consistent with Raven's (1974) analysis, the maintenance of membership in the group may be an important determinant of cohesion, and one that may be useful in producing the effects hypothesized by the groupthink theory, particularly when members face a shared threat to the collective positive image of the group.

Experiment 3

As noted above, our overall pattern of data in Experiment 1 reinforces Janis's view of groupthink as a process in which group members attempt to maintain a shared, positive view of the functioning of the group (Janis, 1982). In other words, groupthink can be viewed as a process by which group

members attempt to maintain a positive image of the group in the face of potential failure to adequately deal with a collective threat. If this interpretation of groupthink is viable, it may suggest a potential strategy for both producing and overcoming the defective decision making associated with groupthink. Under traditional groupthink antecedent conditions, the group is faced with a threat to self-esteem and experiences doubt about its capabilities to successfully perform under that threat. When this occurs, research suggests that people are likely to self-handicap (Higgins, 1990; Jones & Berglas, 1978; C. R. Snyder, 1990). Individuals who are uncertain about their competence seek to protect against potential failure by actively setting up circumstances or by claiming certain attributes or characteristics that may be blamed for poor performance (Higgins, 1990; Jones & Berglas, 1978; C. R. Snyder, 1990).

When people are faced with a threat to self-esteem, they may attempt to avoid the negative implications of failure by adopting self-handicapping strategies that ultimately result in poor performance (Frankel & Snyder, 1978; Miller, 1976; M. L. Snyder, Smoller, Strenta, & Frankel, 1981). However, providing threatened individuals with another potential explanation for their expected failure (such as poor lighting) may obviate the need to use self-handicapping as a strategy for maintaining self-esteem. As a consequence, performance should then improve. In contrast, performance should be impaired when such an excuse is not provided. M. L. Snyder et al. (1981) provided evidence supporting these predictions. They manipulated self-esteem threat by giving subjects unsolvable or solvable anagrams that purportedly measured intelligence. Subjects then worked on an additional set of anagrams with or without background music described as distracting and detrimental to performance. As predicted, performance decrements occurred when subjects initially given unsolvable anagrams worked without background music. In contrast, performance decrements were not observed when threatened subjects were given an excuse for their poor performance.

Similar predictions can be made concerning the performance of highly cohesive, threatened groups who are given an alternative excuse for their performance. Assuming that these groups strive to protect against a negative image of the group suggests that providing them with an excuse for possible poor performance (such as the distracting music used by M. L. Snyder et al., 1981) should reduce the need to justify performance. Freed of the need to engage in handicapping strategies, these groups should, in turn, formulate higher quality decisions than groups not given such an excuse. Thus, cohesive groups facing a threat and given an excuse for their potential poor performance should perform better than cohesive groups also facing a threat who are not provided with such an excuse.

How will the self-reports of groupthink and decision-making symptoms be affected by the provision of an excuse for poor performance? Previous research examining these consequences has been limited (cf. Higgins, Snyder, & Berglas, 1990). Moreover, what little research there is has produced conflicting findings. Arkin and Baumgardner (1985) argued that individuals who are uncertain or anxious about their competency and who are provided with a handicapping strategy experience more positive affect than their more certain counterparts. On the other hand, other research shows that self-evaluations of affect

and achievement mood did not differ with the availability of a self-handicapping strategy (Frankel & Snyder, 1978; Leary, 1986).

Consequently, multiple predictions can be made regarding how the provision of an excuse will affect groupthink symptoms. For example, we can speculate that highly cohesive, threatened groups given an excuse such as distracting music will report less pronounced groupthink symptoms because performance is not impaired. On the other hand, it is just as possible that self-reports of groupthink symptoms will be unaffected by the provision of an excuse. This may occur because groups are unsure whether they have completely warded off a negative image.

The following experiment was designed to examine predictions drawn from the social identity maintenance view of groupthink. Our central prediction was that groups operating under groupthink conditions (that is, under conditions of threat and cohesion) who were provided with an excuse of "distracting music" for poor performance would achieve higher quality performance than groups also operating under identical groupthink conditions who were not provided with such an excuse. To provide further comparison with the previous study, we also examined the decision-making performance and groupthink symptoms of groups working under nonthreatening conditions and given group cohesion inductions. If we replicate results obtained in our first study, we should find that these groups produce higher quality decisions than do groups in the groupthink condition.

Method

Subjects, Design, and Procedures

One hundred twenty-three college students participated in groups of 3. Groups were randomly assigned to each condition of a three-group design: (a) low threat; (b) high threat; and (c) high threat with distraction. All groups were given the high-cohesion manipulation described in the first study. This study used the same procedures as Experiment 1, with the exception of modifications in the threat manipulation and posttask questionnaire and the addition of a distraction treatment.

Independent Variables

Threat. Threat was manipulated in the same manner as in Experiment 1 with the following exceptions. First, to control for identifiability and objective self-awareness concerns, we told subjects in the high-threat treatments that their individual identities would be masked. Second, we also asked subjects to sign an additional "release form" that purportedly allowed us to show their videotapes in classes and sessions. Specifically, subjects were told,

Because we may show your tape in certain classes and sessions, we need to get you to sign a release form. Please sign your name in the appropriate spot. This release form allows us to use your tape for these purposes. You should know that your faces will not be identifiable. We will block out your faces, although your body will still be seen. Let me show you a picture we developed from a tape we are currently using.

At this point, the experimenter showed subjects a photograph of a group working on the discussion task. The face of each group member was masked by a large black square produced by a photographic retouching process. Finally, to ensure that groups were aware that the

quality of the decision and not just the group process was of concern, we told subjects that the tapes of groups exhibiting poor processes and decisions would be used for training purposes.³

Distraction. As in the M. L. Snyder et al. (1981) study, subjects in the distraction treatment worked on the discussion task while background music played at a moderate volume. The music consisted of sequences drawn from various synthesizer recordings. Subjects were told,

As you probably know, various forms of music are often played in work settings. We will be simulating that today. While you will be working and discussing, a tape of some music will be played in the background. Based upon experiences previous subjects have had, I can tell you that the music will probably be very distracting and detrimental to your performance on the group discussion task.

In actuality, results of a pretest study using 40 groups found no difference in performance on the experimental task between groups working with the background music and groups working without the background music. Pretesting also indicated that, as found by previous researchers (e.g., Frankel & Snyder, 1978), the distraction was effective only if the subjects believed the evaluators were aware of the presence of the distracting music. To that end, we also provided each group in the distraction condition with a sign that indicated that distracting music was playing. This placard was prominently displayed next to each group and was clearly visible to the videocamera. Again, similar to the M. L. Snyder et al. study, subjects in the low-distraction conditions were not provided with background music.

Dependent Variables

Measures of group performance, symptoms of groupthink, and symptoms of defective decision making were identical to those used in the previous study. Two independent coders scored the group performance measures, achieving 93% agreement. Table 4 reports the intercorrelations among symptoms of groupthink and defective decision-making measures. As in the previous study, intercorrelations among the symptoms are generally quite low, indicating that the symptoms seem to largely tap different facets of the groupthink effect.

Manipulation Checks

To assess their perceptions of our threat manipulation, subjects responded to a series of 7-point semantic differential items assessing the degree to which they were comfortable (vs. uncomfortable), secure (vs. shaky), calm (vs. tense), confident (vs. panicky), and relaxed (vs. frightened) with the setting. These items were combined into a threat index ($\alpha = .91$). To examine the effectiveness of the distraction manipulation, we asked subjects to (a) indicate whether music was playing during the session, (b) rate on a 7-point Likert-type scale the degree of distraction of background noises during the session, and (c) rate on a 7-point Likert-type scale their difficulty concentrating during the session. These latter two items were combined into a distraction index ($\alpha = .61$).

Results

Manipulation Checks

Analysis of our manipulation checks revealed that our experimental procedures affected subjects' perceptions in the expected directions. Subjects clearly understood whether background music was playing: 96% of the subjects correctly indicated whether music was playing, $\chi^2(2, N = 123) = 93.49, p < .0001$. More important for our purposes, analysis of the distraction index revealed highly significant differences between sub-

jects in the distraction condition and those in the nondistraction conditions, $F(2, 38) = 44.37, p < .0001$. Post hoc comparisons confirmed that subjects in the distraction condition reported they found the setting more distracting and less conducive to concentration ($M = 4.24$) than did subjects in the no-distraction conditions ($M_s = 1.84$ and 2.12 for the low-threat, no-distraction and the high-threat, no-distraction treatments, respectively). Analysis of the threat index revealed significant differences between subjects in high-threat and low-threat treatments, $F(2, 38) = 6.87, p < .002$. Post hoc comparisons confirmed that subjects in the high-threat ($M = 14.7$) and in the high-threat, distraction ($M = 15.4$) treatments reported greater threat than did subjects in the low-threat treatment ($M = 11.2$).

Group Performance

Analysis of our group solution quality measure supported our predictions. A one-way ANOVA using a planned contrast of 1, -2, 1 for the low-threat, high-threat, and high-threat and distraction treatments, respectively, indicated that these conditions differed significantly in the quality of the solutions, $F(1, 38) = 4.50, p < .04$. Figure 2 displays the pattern of means. As predicted, high-threat groups developed lower quality solutions ($M = 2.17$) than did their counterparts in the high-threat and distraction ($M = 3.68$) and the low-threat ($M = 3.66$) treatments.

Several points about these results are worth highlighting. Replicating the first study, groups in the groupthink condition—that is, the high-threat cell—formulated poorer quality solutions than did groups in the low-threat cell. Furthermore, the findings provide evidence supporting a social identity perspective on groupthink: Groups facing the same antecedent conditions as those in the groupthink treatment but who were given an excuse for their potential poor performance developed significantly higher quality solutions than did those in the groupthink treatment. Finally, levels of performance across the two

³ A second purpose of Experiment 3 was to provide evidence on the success of our threat manipulation. Several concerns can be raised about the manipulation used in the first study. First, self-reports of threat did not match our hypotheses. Despite evidence documenting the difficulty of producing perceptual confirmation of self-threat (due to such factors as denial, simple refusal to admit threat, and so forth; cf. Lazarus & Folkman, 1984), this remains an unresolved issue. In an attempt to produce perceptual verification of the threat manipulation, we included additional perceptual measures of threat. These measures differed from those in Experiment 1 in that they were constructed to be less intrinsically threatening to subjects (e.g., by focusing on context, subjects should be less threatened by the questions themselves and less reluctant to acknowledge threat; cf. Sudman & Bradburn, 1982). It also is possible that the actual threat manipulation itself may have induced some unintended consequences. Two especially critical repercussions may have been the unintended induction of identifiability and objective self-awareness of the individual subject. Both these processes may have affected our findings in unintended ways. We attempted to control for these concerns by taking steps to mask each individual subject's identity. (See Duval & Wicklund, 1972; Wicklund, 1975; and Williams, Harkins, & Latane, 1981, for a discussion of these issues.) We are indebted to several anonymous reviewers for raising these points.

Table 4
Intercorrelations Among Symptoms of Groupthink and Defective Decision Making for Experiment 3

Symptom	1	2	3	4	5	6	7	8	9	10	11
Groupthink											
1. Invulnerability	—										
2. Self-censorship	.03	—									
3. Rationalization	.38	-.22	—								
4. Unanimity	.49	.27	.24	—							
5. Pressure on dissenters	-.15	.24	-.17	-.11	—						
Defective Decision Making											
6. Failure to examine risks	-.10	.16	-.11	-.17	.06	—					
7. Failure to reappraise alternatives	-.06	-.26	-.05	.04	-.03	.04	—				
8. Omission in survey of objectives	.49	-.26	.45	.16	-.16	-.11	-.04	—			
9. Omission in survey of alternatives	-.18	.07	-.05	-.03	.005	.51	.24	-.15	—		
10. Information processing bias	.43	-.20	.23	.18	-.38	-.21	-.16	.62	-.21	—	
11. Poor information search	.10	-.08	-.03	-.19	-.06	-.04	-.20	.18	-.16	.27	—
12. Contingency plans	-.14	-.02	-.05	-.26	.39	.14	.13	.22	.38	-.15	-.26

Note. Correlations greater than .41 are significant at the .01 level.

experiments are quite similar. Taken together, these results provide some converging evidence regarding the stability of our findings concerning performance quality.

Analysis of the time-to-solution measure revealed that groups in the low-threat treatment ($M = 19.65$) worked more rapidly than did groups in the high-threat ($M = 25.97$) and the high-threat, distraction ($M = 28.61$) treatments, $F(2, 38) = 4.04, p < .03$. This contrasts with results obtained in the first experiment in which groups in all treatments took about 30 min to complete the task.

Self-Reports of Symptoms of Groupthink

Table 2 summarizes the results of a series of one-way ANOVAs on our measures of self-reports of groupthink symptoms. Recall that because Experiment 3 did not manipulate cohesion, it does not provide a test of Experiment 1 cohesion results. Self-reports of illusion of invulnerability and self-censorship were unaffected by our experimental procedures. This is consistent with the first study, which found a main effect for cohesion: High-cohesive groups reported greater invulnerability and

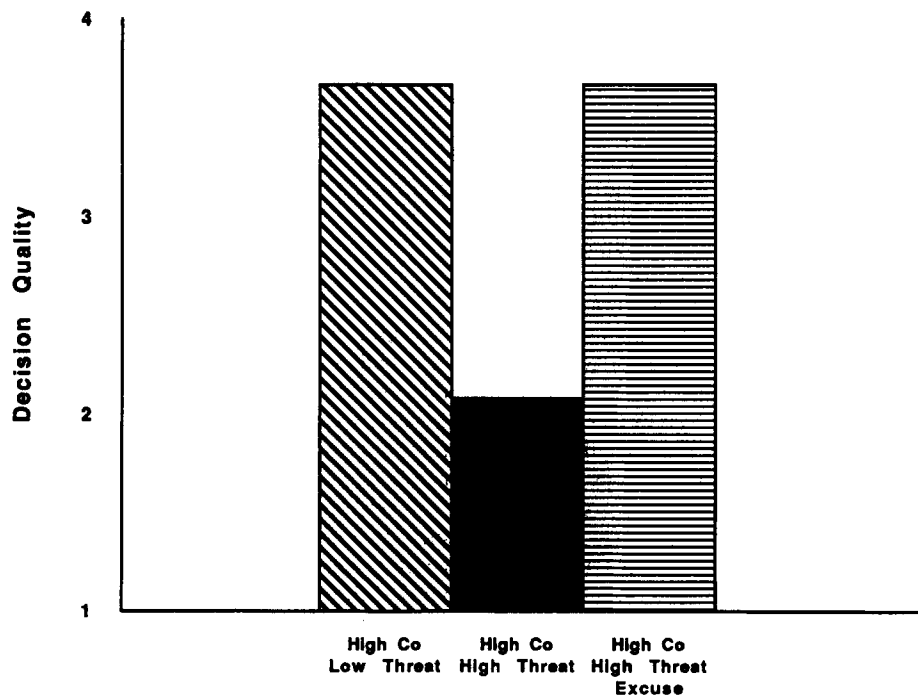


Figure 2. Mean decision quality for Experiment 3 as a function of threat and distraction. (Co = cohesion.)

less self-censorship than did low-cohesive groups. The mean obtained in the current study ($M = 2.4$) is quite similar to that for high-cohesion subjects in the first study. In contrast to results from the first study showing that threat increased rationalization but decreased annoyance with dissenters, these measures in this study were unaffected by our manipulations ($ps > .2$).

Self-Reports of Symptoms of Defective Decision Making

Self-reports of symptoms of defective decision making appear somewhat consistent with results obtained in the first study. Table 3 summarizes these findings. Perceived risk of the group solution was unaffected by experimental treatments ($p > .15$), although the overall mean ($M = 2.4$) was quite similar to that reported by high-cohesion subjects in the first study. As in the previous study, low-threat groups reported greater failure to reappraise initially rejected alternatives than high-threat subjects, $F(2, 38) = 2.98, p < .08$. Post hoc comparisons confirmed this pattern of results. Also consistent with the previous study, experimental treatments did not affect measures of omission in the survey of objectives ($p > .14$), omission in the survey of alternatives ($p > .13$), biased information processing ($p > .57$), information search ($p > .59$), and failure to develop contingency plans ($p > .32$).

Discussion

The results of this experiment provide converging evidence regarding the poor quality decision making associated with groupthink antecedent conditions. Replicating the first study, groups in the groupthink condition—that is, the high-threat cell—formulated poorer quality solutions than did groups in the low-threat cell (recall that all groups were given the high-cohesion induction). Furthermore, the findings provide evidence regarding the social identity maintenance perspective on groupthink: Groups facing the same antecedent conditions as those in the groupthink treatment but who were given an excuse for their potential poor performance developed significantly higher quality solutions than did those in the groupthink treatment. Moreover, groups facing groupthink conditions and given an excuse were capable of performing at the same level as groups working under nonthreatening conditions.

One potential alternative explanation for the performance data is that the distraction manipulation, rather than inducing self-handicapping and identity protection, might have motivated subjects to overcome the supposed obstacles they faced. This interpretation is unlikely. Prior research (as well as pretesting we conducted) suggests that this type of manipulation does in fact induce the processes hypothesized and does not, by itself, produce enhanced performance. Moreover, Kruglanski and Webster (1991) suggested that distraction (albeit a different type than what we used) motivates members to terminate, rather than overcome, the distracting situation.

Self-reports of groupthink and defective decision-making symptoms replicated previous research by their very inconsistency. Measures affected by group cohesion in our first study, such as evaluations of solution risk, were quite similar across the two studies. Similarly, in both studies, high-threat subjects

said they reappraised their initially rejected solutions to a greater extent than did subjects in the low-threat conditions. In contrast to the first study, high-threat subjects exhibited neither greater rationalization nor less pressure on dissenters. We also failed to obtain more pronounced groupthink and defective decision-making symptoms in the groupthink conditions, once again replicating much previous research and failing to support either the strict or the additive interpretations of the groupthink theory.

The view of groupthink as social identity maintenance may be useful in pointing out traditional strategies that are likely to be ineffective in overcoming groupthink. For example, if groups are concerned about avoiding the presentation of a negative image, strategies such as a “second-chance” meeting are more likely to reinforce, rather than reduce, that tendency. Other strategies, such as dividing the group into competing work teams, calling in outside experts, and assigning members to the role of devil’s advocate, may work only to the extent that such procedures reduce the threat to a group’s image. In many cases, such procedures may actually serve to strengthen the threat and the incidence of groupthink itself.

On a more hopeful note, the view of groupthink as social-identity maintenance did identify one strategy for mitigating the adverse consequences of groupthink. The provision of an excuse for potential poor performance was capable of overcoming the lower quality decisions associated with groupthink antecedent conditions of threat and cohesion. This result may point the way to other strategies for mitigating groupthink consequences—strategies that involve divorcing the group’s image from the threatening situation.

General Discussion

Taken together, our results point both to the utility of the groupthink theory and to the need to refine it. Our findings, in conjunction with previous research, underscore the need for revisions to the groupthink theory in at least three areas: (a) clarifying the nature of the antecedents of groupthink, (b) delineating the conceptualization of groupthink itself, and (c) specifying the links among antecedents and consequences of groupthink.

Clarifying Antecedent Conditions

Despite its importance in the groupthink theory, threat previously had not been directly examined as an antecedent condition. Our results lend support to Janis’s delineation of threat. Consistent with Janis (1982), our threat of using videotapes for training purposes presented a direct threat to the esteem that members could derive from being part of a functional group. However, Janis (1982) also noted that other forms of threat (such as financial loss) may produce groupthink. Further research is needed to examine the conditions under which other types of threat will result in groupthink.

Previous groupthink research manipulating cohesion has (a) generally failed to produce the predicted effects of cohesion on groupthink processes and (b) frequently failed to produce perceptual verifications of cohesion. In contrast to much groupthink research, the current manipulation of cohesion produced

effects consistent with previous research on group cohesion and with a liberal interpretation of the groupthink theory. Our results also highlight the importance of the self-categorization and social-identity aspect of cohesion, that is, the categorization of others as members of the group rather than as unique individuals (cf. J. C. Turner et al., 1987).

Refining the Conceptualization of Groupthink

Results obtained in Experiments 1 and 3 reinforce the view of groupthink as a process in which group members attempt to maintain a shared, positive view of the functioning of the group in the face of a collective threat (Janis, 1982). This approach is predicated on the induction of a group social identity—an attribute characteristic of many groups in the original case studies. This identity is important in two respects. First, it ensures that members categorize and perceive themselves as a group and develop a positive view of the group they are motivated to maintain. Second, it provides the basis on which the shared threat can operate.

Specifying the Links Among Groupthink Antecedents and Consequences

Our results have several implications for the causal sequences suggested by the groupthink theory. We found little support for the strict interpretation of groupthink, that is, that consequences should only occur when all antecedents under consideration are present. Similarly, we found little support for an additive interpretation that would suggest that consequences should be most pronounced when greater numbers of antecedents are present. These findings, in conjunction with prior research that also fails to find support for the strict or additive interpretations, suggest that more careful empirical analyses of the unique situational consequences of each antecedent be undertaken. Our pattern of findings is strongly consistent with previous research supporting this more liberal interpretation of groupthink (and indeed some of the case studies in Janis, 1982, do not exhibit all the symptoms). Perhaps more fruitful than adherence to a strict interpretation that seems to lack empirical support might be research directed toward more fine-grained analyses of the links between antecedents and consequences of groupthink and toward a delineation of the groupthink process itself. The current research reinforces one interpretation (among possible others) that might be useful in facilitating this research: The view of groupthink as group members' effort to collectively reduce the potential damage from threat and to ward off negative images of the group that produces, as Janis (1982, p. 167) termed it, "the genuine sharing of illusory beliefs."

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