

The Threat-Rigidity Thesis in Newly Formed Teams: An Empirical Test

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An empirical test of hypothesized interactions between external or internal attribution of threat and likelihood of success or failure for newly formed decision-making teams based on Staw, Sandeland, and Dutton's (1981) threat-rigidity thesis. Results suggest that both the level of threat and internal attributions of threat have a significant effect on decision-making processes. Specifically, groups in this study with either a higher level of threat or internal attribution of the threat used more rigidity in their decision-making processes. Rigidity was defined as a restriction of information and constriction of control within the group. Based on this initial test and the extant literature, future research is proposed.

A popular belief in the business literature is that the competitive environment is growing increasingly complex, uncertain, and adverse. Hitt, Ireland, and Hoskisson (1999) suggested that firms in the "new competitive landscape" need to have abilities to adapt to environmental change with innovation and speed. Contingency theorists have maintained that firms in uncertain environments should develop flexible processes to react successfully to adversity or unexpected change (Burns & Stalker, 1961; Galbraith, 1977; Lawrence & Lorsch, 1967).

In addition, decision-making is believed to be at the heart of all organizational activity (Butler, 1997). Hambrick and Mason (1984) suggested that the core of all organizational action is a decision-making process, and strategic decision-making usually takes place in a group process using top management teams. Thus, if the decision-making process is at the core of all organizational action, then it is logical to infer that the flexibility or rigidity of the decision-making process will impact the ability of an organization to adapt and survive in an uncertain and often adverse environment. Moreover, researchers have indicated that decision-making teams of firms operating in adverse environments should develop decision-making processes that feature decentralized control, openness to new ideas, and benefits from diversity within team members (Eisenhardt, 1989; Krishnan, Miller, & Judge, 24; Sharfman & Dean, 1997). We posit that these attributes of the decision-making process tend to make it more "flexible." Further, we suggest that flexibility in decision-making processes is the key to effectively interacting with the environment in terms of adaptation, innovation and speed.

In 1981, Staw, Sandelands, and Dutton proposed the threat-rigidity thesis, which suggested that threat might cause decision-makers to rely on well-learned responses—restricting information processing and constricting decision control. This thesis suggested effects at multiple levels including the individual, group, and organization. Very little empirical research has been done testing this thesis. Most research using the threat-rigidity thesis has focused

on the organizational level (e.g., Baker & Cullen, 1993; Palmer, Danforth, & Clark, 1995; Sharfman & Dean, 1997). Studies that considered the group or individual levels did not test the moderating relationships originally proposed in the thesis (Chen, 1992; Gladstein & Reilly, 1985; Pyle, 1989). The purpose of this analysis is to extend previous empirical research by investigating how the hypothesized moderating effects suggested in the threat-rigidity thesis may affect decision-making processes for group members in newly formed teams. Specifically, we test the hypothesized effects of internal or external attribution of threat and likelihood of success or failure on constriction of control and restriction of information. Our study intends to shed some light on the relationship of threat and rigidity in group decision-making processes by posing two main questions: Is the threat-rigidity thesis relevant in the group setting for newly formed teams? And, if it is, does the type of attribution and likelihood of success/failure have moderating effects on decision-making processes as originally suggested or differently for newly formed groups?

The second purpose is to suggest an extension of the threat-rigidity cycle to include other group-related constructs developed in the extant literature. Given that the empirical test verifies the hypothesized effects of attribution and likelihood of success on rigidity in group decision-making, what other variables might have a moderating impact in the case of newly formed groups? Here we hypothesize that group climate and composition may have moderating effects on the relationship between perceived threats and rigidity/flexibility in this unique circumstance.

DEFINITIONS AND BOUNDARY CONDITIONS

Over the past decade, interest in decision-making groups and teams has been of significant interest in the psychology, organizational behavior, and strategic management literature (Guzzo & Dickson, 1996; Krishnan, Miller & Judge, 1997; Wilpert, 1995). For the following discussion, "team" and "group" will be used interchangeably. The definition of team is "a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems" (Cohen & Bailey, 1997, p. 241). In addition, our hypotheses are aimed at newly formed decision-making teams operating in an adverse environment. Our concept of a newly formed team is a group that may or may not be familiar with each other and have not worked together in this same project area. In other words, the team has not had the opportunity to develop preconceived scripts of how the team has dealt with similar situations in the past. An example of a newly formed team would be a newly created special project team. Our definition of an adverse environment is an environment that is perceived as having relatively high uncertainty; this may include unexpected or unpredictable change, fast-paced change or appear threatening to the team. The perceived adversity in the environment by the decision-making team is posited to include one or a configuration of these elements.

The concept of flexibility/rigidity considered in this study is based on an integration of previous studies that considered decision-making processes (Butler, 1997; Eisenhardt, 1989; Gladstein & Reilly, 1985; March, 1988; Sharfman & Dean, 1997). For example, Eisenhardt's (1989) analysis of decision-making in the microcomputer industry suggested high performing decision-making teams in adverse environments should develop flexible systems that allow

them to integrate more information, use decentralized decision-making, and effectively resolve conflicts.

Research in cognitive psychology has suggested that when placed in an adverse environment, a team’s most well-learned script or schema may be emitted instead of a response appropriate to the new environment (Fiske & Taylor, 1991; Lord & Kernan, 1987; Zajonc, 1966). Similarly, the threat-rigidity thesis and “groupthink” research has suggested that decision-making groups in adverse environments may reduce their flexibility, sealing off new information and controlling deviant responses (Janis, 1972; Staw, *et al.*, 1981). Hence, decision-makers in an adverse environment might rely on well-learned responses, restrict information processing, and constrict decision control. In other words, the decision-making group may rely on centralized and rigid processes when an adverse environment is present. In this study, flexibility is defined as decision-making processes that utilize more information, create systems to promote debate and information sharing, and use a decentralized method of control over decision-making processes of the team, while rigidity is defined as just the opposite.

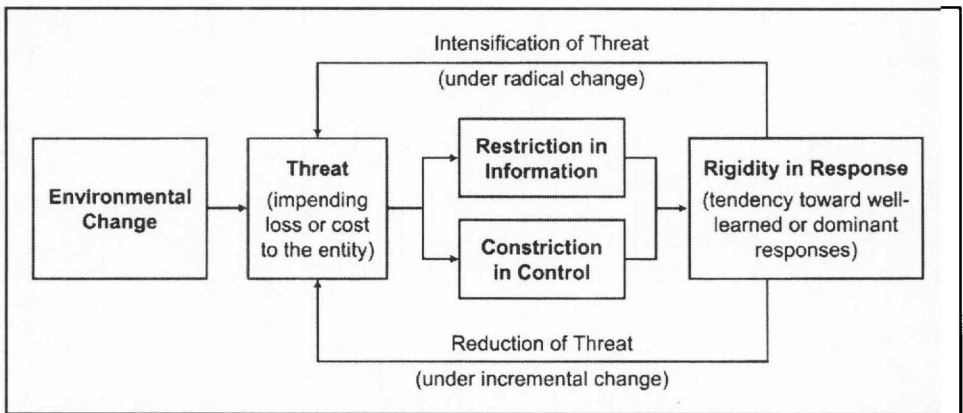


Figure 1. Staw, *et al.*'s Threat-rigidity Cycle.

THE THREAT-RIGIDITY THESIS

Staw, *et al.*'s general thesis proposed that a “threat to the vital interests of an entity, be it an individual, group, or organization, will lead to forms of rigidity” (Staw, *et al.*, 1981, p. 502). In this thesis, threat was treated as “an environmental event that has impending negative or harmful consequences for the entity” (Staw, *et al.*, 1981, p. 502). Figure 1 presents the original threat-rigidity cycle proposed by Staw, *et al.* (1981). Presumably, threat is brought on by environmental change, which will result in a restriction of information and constriction of control. When these two things occur, decision-makers will have a tendency to rely on dominant responses that are defined as rigidity. As in the general threat-rigidity cycle (Figure 1), Staw, *et al.* (1981) hypothesized that antecedents of a rigid response in the group setting (Figure 2) were restriction of information and constriction of control in their decision-making processes. This suggests that the use of more information and decentralization of control (in decision-making processes by group members) are antecedents of a “flexible” response. For

convenience, Staw, *et al.*'s (1981) antecedents of a rigid response (restriction of information and constriction of control) will be referred to as "rigidity" in group decision-making processes. Because the opposite of this (use of more information and decentralization of control) suggests a lower probability of formulating a rigid response by the group, "flexibility" in group decision-making processes will refer to just the opposite of "rigidity." This flexibility concept is closely aligned with suggestions by other research in decision-making processes (Butler, 1997; Eisenhardt, 1989; March, 1988; Sharfman & Dean, 1997). Following the threat-rigidity thesis, we hypothesize that teams in a high threat situation will respond with more rigidity in decision-making processes than teams in a low threat situation.

H1: Teams under high threat will use more rigid decision-making processes than teams in a low threat situation.

Beyond the basic threat-rigidity cycle, there are hypothesized effects of threat for groups in particular. Figure 2 provides the model for group response proposed by Staw, *et al.* (1981). The principle idea is that, when a threat impacts group processes, it will be analyzed in terms of external or internal attribution and likelihood of success or failure. Attribution of threat is concerned with whether the team interprets the threatening situation to be a result of factors outside of the team's control (*i.e.*, a lack of available information) or a result of factors internal to the team (*i.e.*, a lack of confidence in team members). The likelihood of success or failure concept relates to the team's belief in whether or not they have the ability to overcome the threatening situation. We acknowledge that these concepts are not (necessarily) mutually exclusive of each other.

Interpretation or perception of threat has been used as a construct in a number of recent studies on the impact of both group and individual responses. Although the distinction between threat and a number of related terms (*i.e.*, stress, harm or loss) is left unclear in the literature, summaries of individual findings include the link between threat situations and psychological stress and anxiety (Gladstein & Reilly, 1985). Typically, stress is defined as harm/loss, threat, or challenge to the individual (Lazarus, 1991). Early research on the effect of stress at the group-level found that threatened groups were less task-oriented, less forceful, initiating,

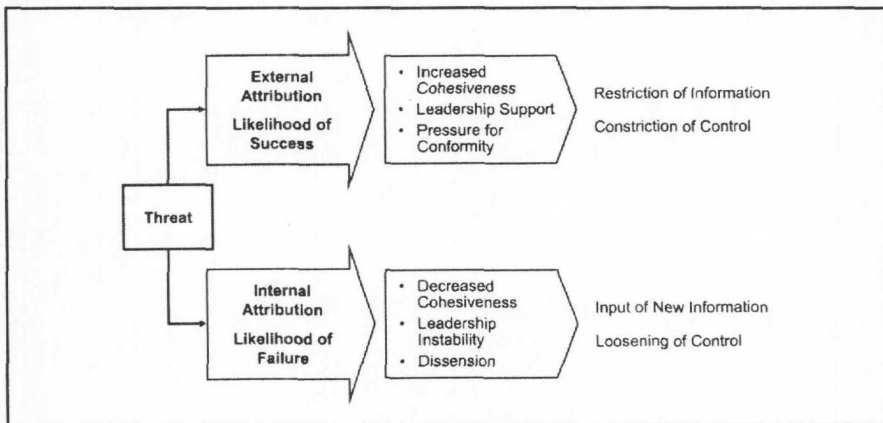


Figure 2. Staw, *et al.*'s, model of group response to threat.

and active in their attack on the problem (Lanzetta, Haefner, Langham & Axelrod, 1954). Although the findings have been inconsistent (Renner & Renner, 1972), early empirical research found that the level of stress resulting from perceived threat determines whether problem-solving ability is enhanced or decreased (Lanzetta, 1955).

Feldman and Stenner (1997) examined the relationship between perceived threat and authoritarianism. The authors suggested that distinctions exist between long-term societal threat and short-term threatening events. Their interest was in the latter and the impact of this personality trait (authoritarianism) under conditions of short-term threat. The measure of a perceived threat in this instance was the increase in anxiety caused from significant short-term change. The evidence presented in the study found an interaction between authoritarian predisposition and perceived threat. This interaction resulted in the manifestation of authoritarian behaviors, which lead individuals high in authoritarianism to become more intolerant and punitive. The findings suggested that perceived threat activity resulted in a manifestation of existing authoritarian traits rather than an increase in the traits themselves (Feldman & Stenner, 1997).

While the literature has been inconsistent in its findings, we propose that the group interpretation of the threatening situation (measured by attribution type in this study) is an important intervening variable between threat and rigidity as defined by the original threat-rigidity thesis. Not only that, but we suggest that attribution may be a moderating variable that helps define the relationship between the objective threat and the perceived threat. The concept of perceived threat is closely related to the measure for likelihood of success used in our analysis and appears to be related to team decision-making processes used by newly formed groups. However, objective measures of threat, such as economic or competitive factors, may impact an individual's interpretations of that threat. For example, an attribution of the threat as being caused by external (a competitor releasing a new product) or internal (our failure to get to the market with a new product before the competition) factors may have different impacts on decision-making rigidity.

As shown in Figure 2, the implicit assumption of Staw, *et al.*'s (1981) study was that attribution and/or likelihood of success/failure mediates the impact of threat on group processes. In addition, Staw, *et al.* (1981) suggested that attribution of threat and likelihood of success or failure would have an interaction or moderating effect on group processes. Specifically, they proposed that the group response to threat attributed to external sources with a high likelihood of success would moderate group processes resulting in restriction of information and constriction of control within the group. The interaction of external-attributed threat and likelihood of success is proposed to facilitate group cohesiveness, leadership support and pressure for conformity (Staw, *et al.*, 1981), thus, leading to rigidity in response as depicted in the threat-rigidity cycle (Figure 1).

In contrast, a group's response to a threat attributed to internal sources with a likelihood of failure moderates group processes and results in input of new information and loosening of control. This interaction facilitates decreased group cohesiveness, leadership instability and dissension within the group (Staw, *et al.*, 1981) and, presumably, more flexibility in decision-making. A problem with the Staw, *et al.* (1981) article and Figure 2 is that it is unclear what the group response will be with external attribution of the threat coupled with likelihood of

failure or with internal attribution of the threat coupled with likelihood of success. The lack of discussion for these potential interactions suggests that Staw, *et al.* (1981) presumed that these combinations would have little or no effect on group processes. In other words, the interaction between external attribution of threat and likelihood of failure or internal attribution of threat and likelihood of success would have no significant effect on restriction of information or constriction of control.

TABLE 1
Original Threat-rigidity Thesis Proposed Moderating Relationships

Attribution of Threat	Likelihood of Success	
	High	Low
External	Predicted More Rigidity	No Effect Explicitly Predicted
Internal	No Effect Explicitly Predicted	Predicted More Flexibility

HYPOTHESIZED EFFECTS FOR NEWLY FORMED TEAMS

The predicted moderating effects of the original threat-rigidity thesis are shown in a 2X2 matrix in Table 1. These predicted effects were based on the assumption that the decision-making teams are not newly formed but have previous well-learned responses to rely on. Because newly formed teams do not have a collectively developed well-learned response to the situation, we predict that attribution of threat will have an opposite impact on the decision-making processes of newly formed teams. Specifically, we hypothesize that an external attribution of the threat will be perceived as less threatening to the entity (in this case the newly formed team) and will be least disruptive to team decision-making processes. Conversely, we hypothesize that an internal attribution of threat by the newly formed group will result in more rigidity in decision-making processes. The reasoning behind this is that internal attribution of the threat implies that some members perceive deficiencies in other group members. This implies that group members will feel that more flexibility in decision-making processes (sharing information with deficient members and decentralizing decision control among all members of the group) will result in poor decisions. Thus, internal attribution of threat will be the most disruptive of teams in this context. In other words, we hypothesize that external and internal attribution of threat will have opposite effects on newly formed teams' decision-making processes than those predicted by Staw, *et al.* (1981) for intact decision-making teams. Formally stated:

H2a: Teams with externally attributed threat will use more flexible decision-making processes.

H2b: Teams with internally attributed threat will use more rigid decision-making processes.

The original threat-rigidity thesis suggested that the moderating effect of externally attributed threat and likelihood of success may increase rigidity in decision-making processes. For newly formed groups, we hypothesize the opposite effect from this interaction. Our reasoning for this hypothesized effect is that the source of the threat appears external to the team, and the task at hand does not appear to be insurmountable.

Further, internally attributed threat and likelihood of failure is explicitly stated in the original thesis to increase flexibility in decision-making processes. Because this situation will be perceived as the most threatening situation for the team, we predict that for newly formed groups this interaction will increase rigidity in decision-making processes. Formally stated:

H3a: Teams with an interaction of externally attributed threat and high likelihood of success will use more flexibility in their decision-making processes.

H3b: Teams with an interaction of internally attributed threat and low likelihood of success use more rigidity in their decision-making processes.

While the moderating effect of externally attributed threat and likelihood of failure or internally attributed threat and likelihood of success is not explicitly stated in the original thesis, we predict that when these two constructs are combined in this fashion, they will have significant effects on rigidity in decision-making processes. First, although we hypothesize that external threat will promote flexibility, the interaction of external attribution and likelihood of failure is hypothesized to increase rigidity of the team process. When the team interprets their probability of success to be low, they will perceive the threat to be much greater to the entity. Hence, their general perception of the threat will be greater and will result in more rigidity. Because an internal attribution of threat is most disruptive to the team, we hypothesize the interaction of internal attribution of threat and high likelihood of success will result in more rigidity in team decision-making processes of newly formed teams. Our next two hypotheses formally state the predicted effects.

H4a: Teams with an interaction of externally attributed threat and low likelihood of success will use more rigidity in decision-making processes.

H4b: Teams with an interaction of internally attributed threat and high likelihood of success will use more rigidity in decision-making processes.

METHODS

Study Context and Sample

The context of the study described below permits careful monitoring of the process, control of threats (treatments) and provides a realistic context for the participants. The study was conducted in an academic setting that provides more control than the typical field study, more realism than a laboratory study, and measures of both internal and external validity.

The subjects for this pilot study were undergraduate students enrolled in a large western U.S. university. The data was collected as part of a student team project in six classes during the spring and fall semesters. The study resulted in 534 individual measures and 153 initial

team measures. The task of the student teams entailed strategic decision-making and developing a strategic business plan. The average age of the respondents was 23.1 years (range 20-32). Sixty-one percent of the subjects were female and thirty-nine percent were male. The manipulation for this study was whether the threat was a high or low level.

We acknowledge that the student groups who formed our subject pool were not totally naive. By the time students are taking a strategy class, they have served on many student project teams. As such, they have probably “learned” a number of skills for dealing with social loafers, defining appropriate roles, and completing the task at hand. While this is acknowledged to be the case, this situation is no different than newly formed groups in other work settings that have a number of learned skills about how to function as a team. Thus, while these learned team skills are believed to have an impact on team decision-making processes in general, our interest in this study is the effect of increased threat and attribution of threat on team decision-making processes rather than measuring population parameters. The use of student groups in our study was highly appropriate because our objective was not to draw conclusions about a population but about the threat-rigidity thesis, which specifies what subjects ought to do (Mook, 1983). Therefore, previously learned team skills will not diminish the importance of any significant results that are found in this study.

The instrument used to collect data for this study was a 16-item questionnaire. The instrument measured perceived internal and external threat levels, likelihood of success, and group decision-making processes. The overall reliability of this instrument was .89. The instrument used a 10-point Likert-type scale with anchors at the upper and lower ends of each item. The items were chosen from previous research (Eisenhardt, 1989; Gladstein & Reilly, 1985; Sharfman & Dean, 1997; Taylor & Bowers, 1972) where possible so that the measurement instrument reflected the most reliable measures available. Items were modified slightly to fit the context of this study. For example, the wording of items was changed to match the nature of the student project.

The analysis for this study was linear regression to test main effects and a 2X2 ANOVA to test the hypothesized moderating effects (Baron & Kenny, 1986). For this analysis, aggregated team responses were used to test for differences and all of the groups were assessed for inter-rater reliability. Responses of teams were retained and used in the analysis if Cronbach's alpha was greater than .70 (George, 1990). Measures for 95 teams were included in the study because of a satisfactory level of agreement between group members.

Measures

- **High or low threat**

This variable was treated as dichotomous. The assessment of the relative level of threat during a particular measurement period was determined through agreement by the researchers in this study. The criteria used for this decision were based on the relative weight of the project on students' grade, the level of competition, time pressure, and the complexity of the project. Team measures assessed in a relatively high threat treatment were coded as “1” and team measures assessed in a relatively low threat treatment were coded as “0”.

- **External attribution of threat**

This variable was measured using five items on the instrument. Example questions included “Did you feel threatened by the time constraints for this task?” and “How apprehensive do you feel about how your instructor will respond to your decision?” The mean of these five measures was assessed for each team. The team mean was used for tests of the main effects with a higher score representing more external attribution of threat. For tests of interactions between external attribution of threat and likelihood of success, a dichotomous variable was determined. Team responses that were at or above the mean for these five items were coded as high externally attributed threat, and team responses below the mean as low externally attributed threat.

- **Internal threat attribution of threat**

This variable was measured using three items on the instrument. Example questions included “How satisfied are you with your teams standards of performance?” and “To what extent do you have confidence in your team members?” The mean of these three measures was assessed for each team and was reverse scored for the analysis. This mean was used for tests of the main effects with a higher score representing more internal attribution of threat. For tests of interactions between internal attribution of threat and likelihood of success, a dichotomous variable was determined. Team responses that were at or above the mean for these three items were coded as high internally attributed threat, and team responses below the mean as low internally attributed threat. While it is conceptually possible for a team to be high in both external and internal attribution of threat, team scores were inspected to determine the primary type of attribution.

- **Likelihood of success**

This variable was measured using three items on the instrument. These items asked, “What is the probability of your being successful in the task?” and “How confident is your team that you will achieve your expected outcome for this task?” The mean team response for these three items was used to test the interaction effects of attribution type and likelihood of success; the variable was treated as dichotomous. Team responses that were at or above the mean were coded as “1” for a high likelihood of success, and team responses below the mean were coded as “0” for a low likelihood of success.

- **Flexibility/rigidity in decision-making processes**

Flexibility/rigidity in decision-making processes was viewed as a continuous variable for our analysis and was measured using five items on our instrument. The overall level of flexibility/rigidity was calculated as the summed score of 5 items that loaded on the team process component using principal component analysis. Greater flexibility in the group process was represented by a higher value, whereas, greater rigidity in the group process was represented by a lower value. Example measures included “To what extent do people in your team offer new ideas for solving decision related problems?” and “How much influence did each team member have in the final decision-making process?”

TABLE 2
Inter-correlation of Variables

	2	3	4	5	6
1. Flexibility/Rigidity	-.810**	.030	.304**	-.822**	.231*
2. Internal Attribution		.204*	-.521**	.973**	-.185
3. External Attribution			-.352**	.157	.686**
4. Likelihood of Success (LOS)				-.351**	.426**
5. Internal X LOS					-.095
6. External X LOS					

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

RESULTS

The correlations between the variables used in our analysis are provided in Table 2. The inter-correlations indicate that the team measure of flexibility/rigidity in decision-making processes is highly correlated with internal attribution of threat in addition to the interaction between internal attribution and likelihood of success. Additionally, the flexibility/rigidity measure is moderately correlated with likelihood of success and the external attribution and likelihood of success interaction. Table 3 shows the sample size, mean, and standard deviation for each variable used in tests using ANOVA.

In general, the threat-rigidity thesis was supported. As suggested in Hypothesis 1, teams in the high threat treatment used a more rigid approach to the decision-making process. Teams in the high threat treatment had a mean flexibility/rigidity measure of 37.25; whereas, teams in the low threat treatment had a mean flexibility/rigidity measure of 41.77. This finding was significant ($p \leq .001$) and was in the predicted direction. Teams in the high threat treatment shared less information and ideas. In addition, decision influence was more centralized in the high threat group.

Hypothesis 2 was tested using linear regression to assess the main effects for external and internal attribution of threat on team decision-making process flexibility. When external attribution was regressed on the flexibility/rigidity measure, it was non-significant ($p = .776$) with an R^2 value of only .001. Thus, Hypothesis 2a was not supported and external attribution of threat had no significant effect on the flexibility/rigidity of decision-making processes for newly formed groups in this study.

When internal attribution of threat was regressed on the flexibility/rigidity measure, it was significant ($p \leq .001$), and it explained 65.6% of the variance in the flexibility/rigidity measure (Adjusted $R^2 = .652$). The unstandardized coefficient was -3.646; thus, a higher level of internal attribution resulted in more rigidity of team decision-making processes. Hypothesis 2b was supported. Results from the tests of main effects using linear regression are shown in Table 4.

TABLE 3
ANOVA Results and Descriptive Statistics

Variable	N	Mean	Std. Dev.
Flexibility/Rigidity in Decision-making Processes	95	39.96	5.51
Likelihood of Success	95	7.65	1.09
Internal Attribution (Reverse scored)	95	2.13	1.22
External Attribution	95	6.36	1.13
Flexibility/Rigidity - High threat vs. Low threat			
High threat	38	37.25***	5.51
Low threat	57	41.77	4.75
Flexibility/Rigidity - External Threat & High Likelihood of Success vs. Other			
External Threat & High Likelihood of Success	17	40.79	5.55
Other	78	39.79	5.51
Flexibility/Rigidity - Internal Threat & Low Likelihood of Success vs. Other			
Internal Threat & Low Likelihood of Success	29	35.62***	4.69
Other	66	41.87	4.72
Flexibility/Rigidity - External Threat & Low Likelihood of Success vs. Other			
External Threat & Low Likelihood of Success	31	39.78	5.51
Other	64	40.05	5.54
Flexibility/Rigidity - Internal Threat & High Likelihood of Success vs. Other			
Internal Threat & High Likelihood of Success	10	34.02***	4.50
Other	85	40.66	5.20

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Hypotheses 3 and 4 were tested using a 2X2 ANOVA design where attribution type and likelihood of success (high or low) were treated as dichotomous variables. This was done to test the hypothesized combination of variables while removing any multicollinearity problems (Baron & Kenny, 1986). Teams with external attribution of threat and high likelihood of success had a mean flexibility/rigidity score of 40.78. The level of flexibility/rigidity in decision-making processes used by these teams was not significantly different from the mean for all other teams ($p \leq .50$). Hence, Hypothesis 3a was not supported. Teams with internal attribution and low likelihood of success used more rigid decision-making processes with a mean score of 35.62, and the mean difference was significant ($p \leq .001$). Hypothesis 3b was supported.

Hypothesis 4a was not supported indicating no significant difference ($p \leq .827$) in flexibility/rigidity of decision-making processes for teams with external attribution and low likelihood of success. The mean flexibility/rigidity score for this interaction was 39.78 with all other

TABLE 4
Regression Output of Main Effects of Attribution on Flexibility/Rigidity

Model	Variable Entered	R	R Square	Adj R Sq.	Std. Error of Est.	
1	External Attribution	0.03	0.001	-0.01	5.53	
2	Internal Attribution	0.81	0.656	0.652	3.24	
Analysis of Variance		Sum of Sq.	Df	Mean Sq	F Ratio	Sig.
1	Regression	2.504	1	2.505	0.082	0.776
	Residual	2850.574	93	30.651		
	Total	2853.078	94			
2	Regression	1871.504		1871.504	177.317	0.001
	Residual	981.574		10.555		
	Total	2853.078				
Coefficients		B	Std. Error	Beta	T	Sig.
1	Constant	39.048	3.266		11.957	0.001
	External Attribution	0.144	0.506	0.03	0.286	0.776
2	Constant	47.741	0.672		71.015	0.001
	Internal Attribution	-3.646	0.274	-0.81	-13.316	0.001
Dependent Variable: Flexibility/Rigidity						

interactions having a mean of 40.05. Hypothesis 4b was supported. Groups with an interaction of internal attribution and high likelihood of success had significantly ($p \leq .001$) more rigidity in decision-making processes (mean = 34.02) when compared to groups with other interactions (mean = 40.66).

DISCUSSION

In general, threat was shown to impact decision-making processes within groups in our study. Staw, *et al.* suggested that threat was a broad construct, and the threat-rigidity thesis defined threat as "an environmental event" (Staw, *et al.*, 1981, p. 502). Their view of the primary types of threat would be external in nature, interact with time pressure or anticipation, and "probably be the driving force behind most of the events that the term crisis attempt to explain" (Staw, *et al.*, 1981, p. 512). A review of studies considering the threat-rigidity thesis (D'Aunno & Sutton, 1992; Gladstein & Reilly, 1985; Pyle, 1989) indicates that an external and objective measure of imposed threat was generally used. As suggested for future research by D'Aunno and Sutton (1992), group member reactions to actual threat are based on their interpretation or perception of the threat. This view was supported with team attribution of the threat having an impact on decision-making. Specifically, higher levels of threat and an internal attribution of the threat increased rigidity in group decision-making processes.

Our data suggest that external attributions would not inhibit a more flexible response but that internal attributions would result in a more rigid decision-making process. Because our study utilized a sample of newly formed teams, our findings suggest that newly formed

groups place a greater apparent importance on internal attribution of threat. This is supported by previous research, which suggested that newly formed teams might react differently compared to groups who have worked together over a period of time. Specifically, internal factors such as group climate or group composition may have a significant impact on the flexibility/rigidity in decision-making processes of newly formed groups (Guzzo & Dickson, 1996; Lau & Murnighan, 1998; Veiga, 1991).

Support for moderating effects opposite of those proposed by the original thesis suggests that these interactions (attribution type and likelihood of success) may manifest themselves in different ways in different contexts (*i.e.*, existing teams vs. newly formed teams). Based on the variables we tested, the results suggest that attribution of threat is the strongest predictor of decision-making processes used by the team. Our measure of likelihood of success was highly correlated with attribution and the flexibility/rigidity used in the team process. Likelihood of success is closely aligned with a team's interpretation of the threat and appears to be closely connected with attribution type. While the reaction to an interaction of attribution of threat and likelihood of success or failure was hypothesized to impact the decision-making process, our measure of high or low likelihood of success had no significant interaction effects with attribution type. Therefore, future research should consider other important variables to replace the likelihood of success construct.

Overall, the findings suggest that a team's interpretation of the threat may be a better predictor of rigidity in group decision-making processes. This contention is consistent with the notion of open and closed system views of organizations and decision-making. That is, managers who view organizations as open systems look to the external environment and interfaces with it to guide decision-making. On the other hand, those with a closed system view focus internally and often revert to "tried and true" solutions that have worked in the past. Again, our conclusions are based on data from newly formed teams, but systems theory and contingency theory literature would suggest generalizability beyond that unique circumstance.

LIMITATIONS AND FUTURE RESEARCH

A limitation of this study is that it did not explicitly assess the impact of group climate and group composition. While the study assigned team members to minimize differences in their composition, the variance in composition/diversity between teams was not evaluated satisfactorily. Based on previous research and the findings from this study, a revised threat-rigidity cycle is presented in Figure 3. In this model, we have included the moderating effects of attribution, group composition, and group climate. Our logic here is driven in part by the phenomenon of newly formed groups and the associated literature, but again, it may be generalizable to all types of groups involved in decision-making.

Group Climate

Generally, the use of the term climate refers to the "social climate" or interpersonal practices of an organization or group (Schneider, 1985). Group climate has been shown to be a legitimate construct in research measuring consensus among group members of the consistency in perception of climate within a group (Howe, 1977). In addition, Howe (1977) found that the climate response of group members was more a function of group membership than person

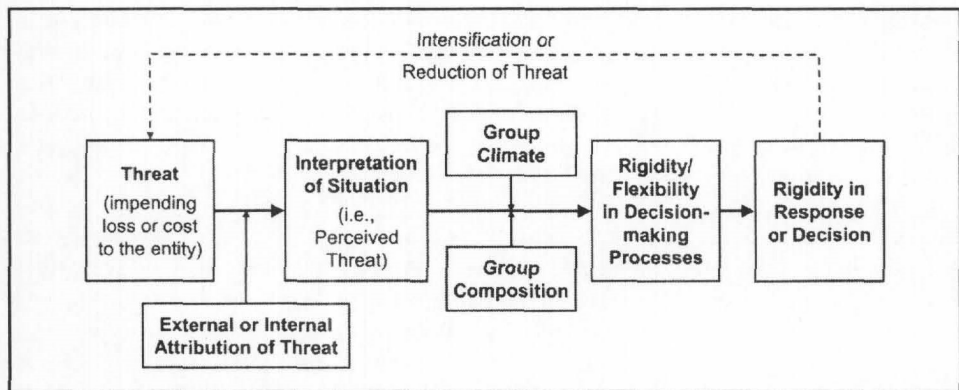


Figure 3. Proposed Threat-Rigidity Cycle for Newly Formed Groups.

type or group by person type effects. This suggests an interaction effect between group membership and the aggregated person type within the group.

Veiga (1991) suggested an indifferent group climate may be one reason that managers restrict their behavior within a group (*i.e.*, limit information sharing and debate within the group). Hence, group climate may impact the level and nature of information acquisition and information processing within the decision-making group. For the purposes of this paper, the group climate factors of interest are those factors that influence the social climate of the group. As such, group climate consists of a shared perception among the group members as to how the group functions in respect to member participation, support, group goals, and task orientation (Agrell & Gustafson, 1994). For our purposes, group climate factors are separated from group composition factors (*i.e.*, demographics, team size, backgrounds, *etc.*) with the realization that there is an interaction between what this study is defining as climate and composition factors.

Group Composition

The ability to process sufficient information and elicit input from all of the team members is partially determined by the composition of the group as well as the familiarity of group members with each other. Group composition design variables may include demographic characteristics, differences in backgrounds or experiences, group size and group tenure (Cohen & Bailey, 1997). For the current study, group size and tenure were controlled for and consistent between teams.

Group diversity refers to both visible demographic differences (such as age, race and gender) as well as differences in education levels, functional backgrounds, and values (Clark, Anand & Roberson, 1999). Group diversity and composition are closely related; Guzzo and Dickson define group composition as “the nature and attributes of group members” (1996, p. 310). For the purposes of this discussion, group diversity will refer to the variance within the team of attributes predicted to influence the decision-making process. These attributes include things such as age, race, gender, nationality, education level, functional background, and

values. A team with a greater variance in the composition of its members will have a higher level of diversity.

Previous research indicates that group diversity may impact the interpretation of cues in the environment. Interpretation occurs when a decision-making group has to make sense of environmental events that are important to the decision (Milliken & Martins, 1996). Because diversity influences perceived differences among members and their interpretation of events, diversity affects group information processing (Dougherty, 1990). Diverse group members may ascribe different labels or meanings to information because of differences in experiences or worldviews (Cox, 1993). Overall, however, studies have found an unclear relationship between heterogeneity of team members' backgrounds or expertise with effectiveness. The direction of the relationship seems highly dependent on the criterion of measurement and the group context (Guzzo & Dickson, 1996).

Lau and Murnighan (1998) suggested that a group's faultlines can be an important determinant of subgroup conflict. Faultlines are related to diversity within organizational groups and focus on the underlying patterns of group member characteristics. Specifically, group faultlines are defined as "hypothetical dividing lines that may split a group into subgroups based on one or more attributes" (Lau & Murnighan, 1998, p. 328). The strength of group faultlines is hypothesized to depend on "the number of individual attributes apparent to group members, their alignment, and, as a consequence, the number of potentially homogeneous subgroups" (Lau & Murnighan, 1998, p. 328). The authors suggested that members of new groups were more likely to develop faultlines due to initial impressions based on physical characteristics, and the formation of unspoken subgroupings that may limit cross-group communication and cohesion. As faultlines are likely to have the greatest effect early on in group formation, conflict becomes more prevalent and "the process sets a precedent for subsequent group processes" (Lau & Murnighan, 1998, p. 336).

Numerous researchers have discussed the effect group composition may have on the ability of decision-making teams to effectively communicate (Clark, *et al.*, 1999; Cox, 1993; Guzzo & Dickson, 1996; Larkey, 1996; Milliken & Martins, 1996; Palmer, Danforth & Clark, 1995). Recent evidence indicates that groups composed of individuals who are familiar with one another work with greater effectiveness than those composed of strangers (Guzzo & Dickson, 1996). Additionally, the likelihood of ineffective communication and unresolved conflict between team members in newly formed groups is significantly increased (Lau & Murnighan, 1998). A diverse team made up of unfamiliar members needs significantly more thought and effort to ensure that minority positions are heard and that the decision-making process develops a feeling of openness and flexibility from the beginning.

Figure 3 provides a basic framework to expand the threat-rigidity cycle to include other important constructs to consider in future research in this area: group interpretation of the threat, the impact of group composition, and the impact of group climate on decision process rigidity. Future research needs to be done to determine the interaction effects of attribution of threat and likelihood of success or failure on both newly formed and intact groups.

Additionally, few measurement instruments in this research area are supported with sufficient evidence of validity and reliability. Hence, a contribution of future research might be to

create discriminating measures and clearly define flexibility in team decision-making processes. Specifically, additional work is needed to clarify team processes that promote greater “flexibility” or less likelihood of rigidity in response by the team. Finally, tests are needed to look at changes in decision-making processes of newly formed groups over time, situational factors, trust, team cohesion, and team member commitment.

Management Implications

The results of this study suggest a number of issues that have direct implications for the formation and management of newly formed work teams in a variety of settings. First, a threatening situation may negatively impact the decision-making process and can be severely hampered if the decision requires an innovative response or solution. Therefore, those in charge of supervising the team need to ensure that the team members understand the importance of the situation at hand but that they do not feel overly threatened in their new role.

Second, the selection of the team members should be derived so that certain members of the team are not perceived as weaker in potential contribution to the solution or response. Therefore, the composition of the team membership should be designed to minimize the potential of internal attribution of the threat. There seems to be a fine line that needs to be followed to simultaneously take advantage of member diversity (whether functional backgrounds, tenure, demographic or other differences) yet not create faultlines that may increase internal attribution of the threat.

CONCLUSIONS

Eisenhardt’s (1989) findings suggest that the success of decision-making teams in an uncertain environment is dependent on their ability to utilize more information, create systems to promote debate and information sharing, and use a decentralized method of control over decision-making processes of the team. Our findings suggest that internal attribution of threat had the greatest impact on decision-making processes of newly formed groups. Thus, teams that attributed the threat to internal causes were more likely to utilize less information and centralize decision-making within dominant members of the group. This suggests that other situational factors (internal to the group) may have a significant effect on the decision-making processes used by newly formed groups. The purpose of the new framework presented here (Figure 3) is to include the effects of situational factors such as group climate, group composition, and interpretation of the situation on decision-making processes (particularly for newly formed groups).

As suggested in this framework, threat should be measured and defined by the team’s interpretation of the situation (*i.e.*, attribution type and perceived threat level). Because of differing interpretations of a situation, decision-making teams may use rigid or flexible decision-making processes to what seems to be the same level of threat by an external measure. Thus, it seems appropriate for future research to consider extending the threat-rigidity framework.

The discussions in this paper are a first step in attempting to clarify ambiguous relationships in flexibility/rigidity in decision-making processes. It also suggests that these measures of flexibility/rigidity in decision-making processes represent a significant factor that is later played out in the type of response implemented by the organization. For firms in uncertain environments, it is crucial that decision-making processes are flexible so that decisions will have a higher probability of success against a high level of threat.

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