

Deescalation Strategies: A Comparison of Techniques for Reducing Commitment to Losing Courses of Action

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Previous research suggests that decision makers have a tendency to become locked into courses of action—to throw good money after bad in dealing with losing projects. The present study directly compared the effectiveness of several deescalation strategies designed to make decision makers more responsive to the available evidence. Three deescalation procedures were found to be most effective: (a) making negative outcomes less threatening; (b) setting minimum target levels that, if not achieved, would lead to a change in policy; and (c) evaluating decision makers on the basis of their decision process rather than outcome. The theoretical and practical implications of each of these strategies are discussed.

A long stream of empirical research has investigated the commitment of decision makers to losing courses of action. Under the rubrics of sunk cost effects (Arkes & Blumer, 1985; Garland & Newport, in press), entrapment (Brockner & Rubin, 1985), too much invested to quit (Tegar, 1980), and the escalation of commitment (Staw, 1976, 1981), numerous studies have shown how individuals can become locked into failing courses of action. To date, this literature has isolated a wide variety of determinants of behavior in escalation situations, ranging from psychological to social, organizational, and project concerns not typically dealt with in the economics of investment (Staw & Ross, 1987).

Much of the research in this area has focused on the determinants of escalation, and little attention has yet been given to procedures that might help people avoid the escalation trap. This is unfortunate because, just as debiasing research has helped behavioral decision theory provide policy recommendations (e.g., Fischhoff, 1982), deescalation research could potentially aid managers in avoiding the overcommitment of resources. So far, however, only the rudiments of a deescalation literature are in place. In such a stream of research, one might place Tegar's (1980) and Brockner, Shaw, and Rubin's (1979) studies showing that limit-setting can reduce escalation. Also in this group would be Nathanson et al.'s (1982) experiment showing that information about the problem of entrapment can deter individuals from initially engaging in an escalation situation. McCain's (1986) experiment showing the reduction of investment when losses are repeated and clear-cut, as well as Staw and Ross's (1987) more general discussion of possible techniques for reducing escalation are also relevant. Nonetheless,

what this line of research lacks is even a single study that compares the relative merits of various deescalation techniques.

Developing Deescalation Techniques

There are several ways one could develop procedures for reducing escalation. One logical approach would be to lessen those variables or forces that have been shown previously to underlie escalation tendencies. Such a reverse-treatment approach of course assumes that there are linear causes of escalation that influence decision behavior when they are either increased or decreased. A second line of development might capitalize on the fact that most escalation research has considered overcommitment of resources as a departure from decisional accuracy. Thus, any external stimuli that heighten decision-making prowess might also reduce escalation behavior. In the research reported here, we followed these two general lines of argument in designing a comparative test of deescalation techniques.

Reducing Self-Justification

To date, much of the work on escalation has relied on cognitive theories; the mechanism that has been singled out as perhaps most relevant to escalation has been self-justification. Justification research has emphasized how receiving negative consequences can itself lead to increased persistence (Staw, 1976; Tegar, 1980). In particular, decision makers may seek to justify an ineffective course of action by increasing their commitment to it. Individuals feeling most responsible for previous losses may place increasing resources in the course of action in hopes of turning the situation around or saving their original actions from failure. The justification motive has also been extended externally to suggest that decision makers are hesitant to expose their errors to others (Brockner & Rubin, 1985; Fox & Staw, 1979).

These findings suggest that a logical deescalation technique might be based on reduction of the need for self- or external

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justification. For example, knowing that a previous decision was not indicative of one's true abilities or intelligence would likely reduce the need for self-justification, whereas assurances of confidentiality would decrease the necessity of justifying one's actions to others. These forms of threat reduction should thus decrease escalation tendencies by allowing the decision maker to withdraw from a failing course of action without experiencing high psychological and social costs.

Stimulating More Accurate Decision Making

Some critics of the escalation literature (e.g., Bowen, 1987; Northcraft & Wolf, 1984) have argued that tendencies to commit new resources to a losing course of action may result from a paucity of information at the time of decision. These critics have proposed that, with explicit data about the rate of return on additional investments in the current course of action versus alternative courses of action (the opportunity cost for one's money), escalation tendencies may be nil. Northcraft and Wolf also argued that reinvestment in a losing course of action may in fact be economically rational when additional expenditures to complete a project yield large returns at its conclusion.¹

There is little doubt that people will withdraw from an investment situation when the economic facts become sufficiently negative and clear-cut.² For example, Brockner and Rubin (1985, pp. 34–36) reported that investment can depend on the value of a goal as well as on the costs involved in reaching that goal. Work by Northcraft and Neale (1986) has also shown that withdrawal is greater when opportunity costs for one's money (returns available from not investing in the original course of action) are presented explicitly to individuals. However, few naturalistic situations include such clear-cut data on either the current or an alternative course of action. Whereas subjects in a study like Northcraft and Neale's could assume that the financial returns were known in the cases they read, real-world decision makers must face a much more ambiguous situation, in which future returns depend on innumerable uncertainties in one's organization and economic environment. Thus, reducing escalation by providing negative information about a current course of action or by providing positive data on alternative investments begs the question of escalation; such procedures give decision makers the very information they must themselves estimate in a naturalistic situation. More useful as a deescalation strategy would therefore be efforts to change the process of decision making—to increase individuals' vigilance and skills in dealing with the ambiguity inherent in most escalation situations.

In general, evidence from behavioral decision research shows that individuals do not usually evaluate all the available information before reaching a decision and that they use a variety of heuristics and shortcuts to simplify decision tasks (Nisbett & Ross, 1980). Therefore, in the context of ongoing projects, decision makers may tend simply to continue with old policies without reevaluating their earlier decisions, thus saving decision time and effort (Payne, Bettman, & Johnson, 1988). This logic suggests that establishing procedures to ensure a thorough evaluation of all options, including a consideration of the reasons for and against selecting each alternative, might decrease decision makers' susceptibility to escalation. For example, outlin-

ing reasons for and against alternatives has been shown to reduce overconfidence (Koriat, Lichtenstein, & Fischhoff, 1980). With on-going projects, one might similarly expect that an evaluation of the reasons supporting each option would lead to a more balanced and thorough evaluation of the available courses of action, thus reducing escalation effects.

Another procedure designed to stimulate more accurate decision making involves clarification of the original goals of a project. Brockner et al. (1979) showed that setting limits before outcomes are known can deter entrapment, possibly reflecting the role of limits as psychological contracts that bind decision makers to behave in a manner consistent with their goals (Brockner & Rubin, 1985, p. 201). It is also possible that goal setting makes it more difficult to interpret negative results as inconclusive or somehow supportive of a failing course of action. Thus, managers could be instructed to outline minimum target levels which if not achieved will lead to a change in policy. Ideally, such targets should be set before any feedback is received, so that they cannot be biased by subsequent results. And, in line with prior research on goal setting (Locke, Saari, Shaw, & Latham, 1981), these targets should be set as precisely and unambiguously as possible, so as to minimize the possibility for misinterpretation of the project's success or failure.

Mixing the Two Approaches

As we have noted, it is possible to design deescalation strategies by either decreasing an escalation determinant, such as self-justification, or by stimulating more accurate decision making. The validity of these two general approaches can be established by testing the relative effectiveness of deescalation strategies based on them. However, the relative strength of these approaches can also be examined by testing deescalation strategies that invoke conflicting psychological processes. For example, by assessing deescalation techniques in which decisional vigilance and self-justification are both heightened, it may be possible to ascertain which of these underlying mechanisms is more powerful in escalation situations. If escalation is reduced when both of these processes are invoked, then one might conclude that stimulating more vigilant decision making is the most effective approach to deescalation. If escalation is increased when both processes are invoked, then one might conclude that reducing self-justification is the more effective deescalation route.

Self-diagnostics: Increasing the self-diagnostics of results should induce a dual effect on escalation tendencies. On the one hand, individuals who feel that the outcomes of their decisions are indicative of their true ability might be motivated to evaluate more carefully the available information and pay greater attention to the economics of a losing project (Brockner

¹ Note, however, that the major purpose of escalation research has been to isolate noneconomic motives relevant to investment situations—to show how economic data must compete with psychological and social forces in determining investment behavior.

² Unfortunately, case research (e.g., Ross & Staw, 1986) shows that, once an escalation situation has become sufficiently imbedded with other (e.g., social and organizational) forces, negative data may need to be overwhelming in magnitude to stimulate withdrawal.

& Rubin, 1985; Hall & Lindzey, 1978). On the other hand, if one assumes that justification motives are important determinants of escalation, then any increase in the self-diagnostics of outcomes could actually increase commitment to a failing course of action. Thus, self-diagnostics may heighten needs for decisional accuracy but may do so at the risk of increasing justification motives.

Accountability. Another factor that might have a dual effect on escalation tendencies is accountability for one's decision-making behavior. Research on the impact of accountability suggests that a need to justify one's views to others may have a debiasing effect (e.g., Tetlock, 1985; Tetlock, Skitka, & Boettger, 1989). In particular, the evidence indicates that accountability leads decision makers to make more complex judgments, to be less influenced by prior beliefs, and to be more driven by available evidence. However, although accountability manipulations may stimulate more accurate decision making, they may also invoke justification motives. For example, Campbell (1969) has long argued that administrators can become trapped into defending programs that do not work if they are worried about losing their jobs after ratings of ineffectiveness are received. And, in the context of escalation, Fox and Staw (1979) found that evaluation apprehension can in fact increase commitment to a losing course of action. Thus, one could argue that accountability, although it may increase cognitive vigilance, also may increase people's need to justify or defend their prior investment mistakes.

One way of dissecting the dual (or conflicting) effects of accountability is to separate accountability for outcomes from accountability for process. When one is accountable for outcomes, the need for justification may be heightened along with any increase in decisional vigilance. However, with accountability for process, individuals who use proper decision strategies and who thoroughly evaluate the available alternatives before reaching a decision should be favorably evaluated regardless of the decision's outcome. Thus, one could expect accountability for process to be a superior deescalation technique to accountability for outcomes.

We have characterized both self-diagnostics and accountability as complex (or mixed) treatments because, although they each have potential for stimulating more accurate decision making, they can each also heighten self-justification motives. The self-diagnostics treatment could therefore either increase or decrease escalation tendencies, depending on the strength of its underlying forces. The same conflict might also be inherent in any accountability manipulation based on outcomes rather than process. Thus, these mixed treatments are interesting to examine on theoretical as well as practical grounds. Because of their inherent complexity, they can be considered a comparative test of the underlying constructs of escalation in addition to an application of these constructs to the problem of deescalation.

Comparison of Deescalation Techniques

As noted, it is possible to deduce several deescalation techniques from two simple theoretical mechanisms related to escalation behavior. These techniques constitute either simple, one-way manipulations of self-justification and decisional vigilance

or some combination of these underlying processes. We therefore examined the comparative merits of the following deescalation techniques: (a) *thorough decision making*—instructing decision makers to prepare a detailed outline of the advantages and disadvantages of each action alternative prior to reaching a decision; (b) *minimum goal setting*—instructing decision makers to outline minimum target levels which if not achieved will lead to a change in policy; (c) *threat reduction*—reducing concerns about both self- and external justification; (d) *self-diagnostics*—informing decision makers that their decisions are reliable indicators of their abilities; (e) *accountability for decision process*—informing decision makers that their decisions will be evaluated on the basis of the effectiveness of their decision process; and (f) *accountability for decision outcome*—informing individuals that they will be evaluated on the effectiveness of their initial investment decisions.

Each of these deescalation techniques was hypothesized to decrease commitment to a course of action. No a priori predictions were made about the relative strength of the various procedures, except that accountability for process should be more effective than accountability for outcomes because it is more likely to stimulate careful decision making without provoking self-justification motives. Because increasing the self-diagnostics of outcomes may also invoke mixed motives, its effectiveness also was expected to be below that of the other deescalation techniques.

To test the effectiveness of the various techniques, we contrasted each with a condition parallel to that of Staw (1976). The high-responsibility condition of Staw's (1976) study involved both prior choice of a course of action and the receipt of negative consequences, two conditions thought necessary to invoke escalation effects. By comparing the described deescalation procedures with this baseline, we were able to establish a measure of the effectiveness of the various techniques.

Method

As in much of the escalation literature, the present study involved a laboratory experiment, using business students as subjects (Brockner & Rubin, 1985; Staw & Ross, 1987). A controlled experiment is especially useful at this stage of research on deescalation techniques because contrasts will not be contaminated by the particular correlates of a field setting or confounded by differences in organizational implementation.

Overall Design

The subjects were 193 business administration students enrolled in marketing management classes at either the University of California at Berkeley or California State University at Hayward. Participation was part of a course requirement. Subjects were randomly assigned into one of seven conditions (a 1×7 design), including one baseline cell. In each condition, subjects made two decisions concerning the experimental task.

Experimental Task

All subjects were asked to work on the Berk Beer Company Case, an exercise modeled on Staw's (1976) original experiment. The case described an American company (whose name was disguised) that sold beer both domestically and in Europe. The case focused on the com-

pany's operations in Switzerland, indicating that the Swiss beer market is quite different from that in the United States. In 1981, Berk started marketing two new products in Switzerland: a nonalcoholic beer and a low-calorie beer. Described in the case were the size, growth, competitive situation, and the role of advertising and sales promotions in these two product markets in 1984. It was indicated that, as of 1984, Berk had a 5% share of the light beer market and 6% of the nonalcoholic beer market. Between June 1981 and June 1984 the company spent \$2 million on marketing support for each product. The case provided sales and earnings figures for each product since its introduction in the Swiss market. These data suggested that both products were performing about equally well, with the light beer's sales slightly larger but growing at a slightly lower rate.

As outlined in the case, Berk's management determined that both beer products needed larger marketing support budgets for advertising, promotions, and product modifications in order to be more successful in the long run. Management also decided that it would be more effective if they focused primarily on one of the two products. Thus, although both products would receive the standard allocation of \$2 million for the period from July 1984 to June 1987, one product would receive an additional allocation of \$3 million. Subjects were asked to put themselves in the position of the marketing vice president and to submit a recommendation to the president as to which of the two products should receive the extra \$3 million. It was emphasized that the decision should be made on the basis of the potential benefit of the added funding to the future performance of the product and to the Berk Company in general. Subjects then entered their product choice and provided a brief explanation for their decision.

Each subject submitted a funding recommendation to the experimenter who, on the basis of this initial investment decision, gave the subject the second part of the case. The second part of the case stated the following:

Your recommendation to allocate the additional \$3 million to the [light/nonalcoholic] beer [depending on the subject's initial decision] was adopted by the president of the company and implemented during the period July 1984 to June 1987. As you will note on the next page, the results have been rather disappointing.

The data indicated that the sales and profits of the product the subject had selected initially went up (a trend started in the first 3-year period), then went down, and finally settled at a slightly lower level than that at the beginning of the 1984–1987 period. The sales and profits of the product not chosen also continued to go up, then went down very slightly, and finally settled at a slightly higher level than that at the beginning of the 3-year period. Subjects were informed that the sales and profit figures following their recommendation were based on a "computer simulation of industry conditions and company sales."

After these sales and profit data were presented in the case, subjects read that, as of July 1987, the company decided to allocate \$10 million of additional marketing support for the following 3 years (in addition to the standard allocation of \$2 million for each product). However, this time it was determined that the additional funds could be split between the two products. As the marketing vice president, subjects were again asked to determine how much of the additional \$10 million should be allotted to each of the two products. Subjects then allocated the \$10 million and provided a brief explanation for their decision.

The case concluded with three manipulation checks. Rather than simply asking subjects to recall the conditions of the experiment, subjects were asked to indicate on a 0 to 10 scale the perceived likelihood that (a) their performance on the exercise reflected their real effectiveness as managers (testing the self-diagnosticsity manipulation); (b) they would be asked to explain their responses to the researchers (accountability manipulation); and (c) whether the long-term outcome of their original decisions (made in the first part of the case) would be a major evaluation criterion (type of accountability manipulation).

This case was pretested in a pilot study designed to establish its suitability for research on escalation. Following Staw (1976), the main focus of the pilot was on the contrast between subjects who were in high- versus low-responsibility conditions. As shown in previous research (see Staw & Ross, 1987, for a review), escalation is demonstrated if those responsible for an initial allocation decision invest more than those who face the same financial situation without having made an earlier commitment to a course of action. For the pilot study, 32 subjects were assigned to the high-responsibility condition and 31 to the low-responsibility condition. Results showed that the average allocation (out of \$10 million) was \$5.4 million in the high-responsibility condition and \$3.7 million in the low-responsibility condition, $t(1) = 3.6, p < .01$. These findings indicate that the Berk Beer Company case is capable of inducing escalation in a manner similar to the original Adams and Smith case used by Staw (1976).

Given the results of the pilot test, as well as those in the earlier escalation literature (see Staw & Ross, 1987), it is possible to consider the high-responsibility condition as invoking escalation behavior. Therefore, it is logical to compare each deescalation technique to this baseline to determine whether escalation has been significantly decreased.

Experimental Conditions

Baseline. As explained, the baseline condition was parallel to the high-responsibility cell of Staw's (1976) study. As in earlier research, subjects in this condition were told that the amount of information provided in the case should be sufficient for a business school student to make a good decision, and they were encouraged to do the best job they could on the case. As a baseline, this information was included in all the experimental conditions except the threat reduction cell.

Threat reduction. In this condition, none of the introductory materials indicating that business students should be able to make a good decision with the available information were provided. Rather, it was stated that it was not possible in a paper-and-pencil exercise with limited information to represent the conditions and complexities of the real world. Furthermore, it was noted that prior research so far indicated that there was no connection between how a person responded on this exercise and his or her managerial effectiveness or intelligence. It was stated that the purpose of the study was to determine if there was any relation between the respondent's age and how he or she responded to the problem. Subjects were told that their responses would be confidential and that they should enter not their name but their age.

Thorough decision making. In addition to the instructions from the baseline condition, subjects were asked to thoroughly evaluate the pros and cons of each available alternative before making a decision. Before making the second allocation decision, subjects were told to list all the reasons they thought supported allocation of funds to each of the two products.

Goal setting. In this cell, subjects were asked to outline their expectations regarding the performance of the product chosen for marketing support. They were also asked to specify what results would cause them to change their recommendation in the next period. Specifically, immediately after making the first decision, subjects were told that the president of the company had asked them to prepare an estimate of the sales and profits for the last 6 months of the current planning period (January through June of 1987), assuming their recommendation was adopted. They then entered the predicted sales and profits for the selected product, and indicated the levels of sales and profits below which they would consider their recommendation a mistake. After receiving feedback on their initial decision, but before making the second allocation of funds, subjects were asked to copy their earlier sales and profits predictions as well as the actual results for that period.

Self-diagnosticsity. In this condition subjects were informed that

the case was used extensively with managers and business students and found to be a fairly reliable predictor of managerial ability, particularly in the area of marketing. It was emphasized that the main purpose of the case was to let the participant test his or her managerial ability. To conduct that self-evaluation, participants were told that they would be asked at the end of the task to summarize and note their decisions, and that summary (which they would keep) would provide information about their decision-making effectiveness. Because the self-diagnostic condition was concerned with reflecting individual ability rather than external evaluation of decisions, subjects were instructed not to put their names on the questionnaire and were told that even the experimenter would not know how any particular person had responded.

Outcome accountability. In addition to the baseline instructions, subjects were informed that, if they made particularly effective or ineffective decisions, these data would be shared with other students and instructors. Subjects were also told that their evaluation as a decision maker would be based on whether the course of action they initially recommended turned out to be most beneficial to the company in the long run. To further enhance accountability, subjects were asked to sign a form granting permission to audiotape a subsequent interview about their decisions and to select a time and day for the interview.

Decision process accountability. Subjects were informed that their evaluation would be based on their use of effective decision strategies rather than the outcomes of those strategies. In addition to the baseline instructions, subjects were informed that, if they used particularly effective or ineffective decision strategies, these data would be shared with other students and instructors. To further enhance accountability, subjects were also asked to sign a form granting permission to audiotape a subsequent interview about their decision strategies and to select a day and time for the interview.

Results

Manipulation Checks

Two of the experimental manipulations, thorough decision making and goal setting, were checked by examining the relevant actions of subjects. For example, inspection of experimental questionnaires revealed that all subjects in the thorough decision-making condition listed the advantages of each of the two decision alternatives, just as they were instructed to do. Likewise, in the goal-setting condition all subjects specified target levels for sales and profits of the products they selected, as well as the levels of sales and profits below which they would consider their investment decisions to have been a mistake. Thus, because specific actions were undertaken by subjects, we can be relatively assured both that goals were set and that the pros and cons of alternatives were considered by subjects.

The remaining experimental conditions were checked via rating scales. Although there is conceptual overlap among several of the experimental conditions (e.g., the baseline condition entails some self-diagnosticity and accountability), it is important that an interpretable pattern of results be demonstrated on these items. The data in Table 1 show such a pattern. As expected, when subjects were accountable for decision process or outcomes, they perceived the highest likelihood that they would have to justify their decisions to the researchers. Contrasting the average of the two accountability cells with the average of the other experimental conditions yielded a significant difference, $t(1) = 3.34, p < .01$. Also, as expected, subjects in the self-diagnosticity condition were the most likely to perceive the task as reflecting their true managerial ability, $t(1) =$

Table 1
Manipulation Check Results

Condition	<i>n</i>	Check 1 ^a	Check 2 ^b	Check 3 ^c
Baseline: Staw (1976)	30			
<i>M</i>		4.5	3.4	4.5
<i>SE</i>		0.38	0.53	0.42
Threat reduction	28			
<i>M</i>		3.7	2.8	3.8
<i>SE</i>		0.63	0.54	0.64
Self-diagnosticity	25			
<i>M</i>		3.2	5.3	4.5
<i>SE</i>		0.60	0.55	0.53
Outcome accountability	30			
<i>M</i>		5.1	3.7	5.3
<i>SE</i>		0.43	0.51	0.38
Decision process accountability	30			
<i>M</i>		5.5	4.1	4.5
<i>SE</i>		0.42	0.51	0.42
Thorough decision making	24			
<i>M</i>		4.0	3.2	4.8
<i>SE</i>		0.54	0.62	0.49
Goal setting	26			
<i>M</i>		4.4	2.8	4.1
<i>SE</i>		0.53	0.51	0.50

^a The likelihood that the subject would be asked to explain his or her decisions to the researchers (on a 0–10 scale). ^b The likelihood that the performance on this task would reflect the subject's true managerial ability (on a 0–10 scale). ^c The likelihood that the long-term effectiveness of the first decision would be the major evaluation criterion (on a 0–10 scale).

3.31, $p < .01$ (contrasting the self-diagnosticity cell with the average of the other conditions). In addition, subjects in the outcome accountability condition perceived most strongly that evaluation would be based on the outcome of their initial decision, $t(1) = 2.26, p < .05$ (contrasting this cell with an average of the other conditions). Finally, as expected, subjects in the threat reduction condition were among the lowest in their perceptions that they would either have to explain their decisions to the researchers or that their decisions reflected their true managerial ability, $t(1) = 1.8, p < .05$ (contrasting the threat reduction cell with the average of the other conditions across the two items).

Allocation of Resources

Analysis of variance was conducted to determine the effect of the six techniques on the allocation of resources. The dependent measure was the amount (out of \$10 million) that was allocated to the product selected in the first period. One independent variable was the task condition (seven levels), and another factor, used as a covariate, was the identity of the product initially selected. This covariate was included to account for the possibility that the product initially selected may have influenced the later allocations.

Subjects' average allocations of resources to the original course of action are shown in Table 2. The 1×7 analysis of variance yielded a significant effect of experimental condition,

Table 2
Effect of Condition on Amount Allocated to Original Choice

Condition	<i>n</i>	Amount (in millions of dollars) allocated to original choice ^a
Baseline: Staw (1976)	30	
<i>M</i>		5.1
<i>SE</i>		0.31
Threat reduction	28	
<i>M</i>		4.3 ^b
<i>SE</i>		0.30
Self-diagnosticsity	25	
<i>M</i>		4.9
<i>SE</i>		0.37
Outcome accountability	30	
<i>M</i>		5.8
<i>SE</i>		0.37
Decision process accountability	30	
<i>M</i>		4.0 ^b
<i>SE</i>		0.36
Thorough decision making	24	
<i>M</i>		5.1
<i>SE</i>		0.39
Goal setting	26	
<i>M</i>		3.9 ^a
<i>SE</i>		0.39

^a Significantly different from the baseline condition, $p < .01$. ^b Significantly different from the baseline condition, $p < .05$.

$F(6, 183) = 4.02$, $p < .001$. Examination of planned contrasts between the baseline and each of the five deescalation conditions also showed three significant effects. As predicted, setting minimum goals significantly reduced escalation below that of the baseline condition, $F(1, 183) = 5.49$, $p < .05$. Also, as predicted, threat reduction yielded lower commitment of resources than the baseline condition, $F(1, 183) = 3.94$, $p < .05$. Finally, as predicted, holding subjects accountable for the decision process produced a significant decrease in resource allocation compared with the baseline condition. $F(1, 183) = 4.07$, $p < .05$. Thorough decision making and self-diagnosticsity produced no effects relative to the baseline.

An additional planned contrast was between process accountability and outcome accountability. As predicted, process accountability was associated with significantly lower allocations to the initial choice than was outcome accountability, $F(1, 183) = 12.41$, $p < .01$.

In addition to the effects of experimental condition, the covariate representing the initial choice (light beer vs. nonalcoholic beer) also had a significant effect on the allocation, $F(1, 183) = 6.45$, $p < .01$. On average, those who initially selected the light beer allocated \$5.1 million to the light beer in their second decision. In contrast, those who initially chose the nonalcoholic beer allocated, on average, \$4.4 million to the same product in their second decision. This difference may reflect the greater confidence associated with a proven product, such as light beer, relative to the newer concept of nonalcoholic beer. The interaction between experimental condition and initial choice was not statistically significant ($p > .5$).

Discussion

This research examined procedures designed to reduce escalation tendencies by stimulating more accurate decision making and by moderating forces for self-justification. The procedures designed to increase decisional vigilance had mixed results. Instructing individuals to prepare an outline of the advantages of each alternative (the thorough decision-making condition) did not have an effect on escalation. However, setting minimum targets for performance and having decision makers compare their performance with these target levels (the goal-setting condition) did significantly reduce escalation.

The principal technique designed to reduce self-justification (the threat reduction condition) also significantly reduced escalation. Here individuals were assured of confidentiality for their responses and informed that the results of their decisions were not reflective of their true abilities. This deescalation technique was, in a sense, a reverse of the justification manipulations used in earlier escalation research. Because of this operationalization, if a decrease in commitment had not been found, it could be interpreted as a theoretical challenge to the self-justification explanation of escalation. As the data turned out, however, self-justification theory was upheld as a means of explaining decreases as well as increases in escalation.

The mixed deescalation techniques, those using procedures that might simultaneously invoke both justification needs and more accurate decision making, produced rather mixed results. Increasing the self-diagnosticsity of results did not reduce escalation tendencies. However, as one might predict from the self-justification perspective, being held accountable for the results of one's initial course of action tended to heighten escalation. In contrast, individuals who were held accountable for decision process and expected to be evaluated on the basis of their decision strategies were less likely to increase their commitment to the initial course of action.

Some Theoretical Implications

Though not the primary purpose of this research, the results of this study provided some support for the more general escalation paradigm. As expected, the outcome accountability condition, in which individuals were held accountable for their original course of action, produced the greatest commitment. Also, the self-diagnosticsity condition, which might arguably heighten defensiveness in addition to any increases in vigilant decision making, did not produce a significant reduction in escalation compared with the baseline condition. And, as expected, the threat reduction condition did reduce escalation tendencies. From this pattern of results, it can be reasonably concluded that justification motives are at least one important force underlying the escalation phenomenon.

Vigilant decision making. The argument that escalation tendencies are due to mindless or "top-of-the-head" decision making (Langer, 1989; Fiske & Taylor, 1984) received less support. In the thorough decision-making condition, individuals were warned to weigh the pros and cons of each alternative and even asked to list the reasons for allocating more money to each alternative course of action. Yet, these instructions did not reduce commitment below that of the baseline condition. Simi-

larly, one might have expected more vigilant decision making when tasks were self-diagnostic. However, the self-diagnostic condition did not reduce escalation tendencies below the baseline level.

Though vigilance did not seem to reduce escalation tendencies, this does not mean that individuals are incapable of economic decision making. As Northcraft and Neale (1986) showed, if economic data (such as opportunity costs) are made explicit to individuals, then escalation tendencies can be reduced. In their study, opportunity costs were made explicit by telling half the subjects how much could be gained by diverting the funds needed to finish a project into either a separate investment account or another project. Interestingly, without such explicit information, only 15% of Northcraft and Neale's subjects mentioned opportunity costs, even though they were implicitly built into the escalation case (85% noted opportunity costs when they were explicitly told of them). Thus, decision makers may not naturally pay attention to key aspects of investment decisions. As a deescalation technique, increasing vigilance may therefore be analogous to attempting to increase performance by telling untrained workers simply to try harder. Individuals may need to be directed to the right elements of an economic decision and their skills increased, rather than being given more general instructions designed to increase their care or diligence.

Accountability. Tetlock (1985) proposed that accountability can reverse many information-processing errors and presented data showing a reduction in belief perseverance when a person was held accountable for performance. However, Tetlock's findings also suggest that accountability might enhance escalation tendencies if managers feel committed to their earlier positions. Consistent with these ideas, the present research showed that increasing accountability for decision process was a potent deescalation technique but that raising accountability for outcomes only seemed to strengthen escalation tendencies. Thus, the form rather than the degree of accountability must be considered in any effort to reduce commitment to a failing course of action.

Practical Implications

Routinely, managers prepare forecasts of expected performance in terms of such measures as sales, profits, and market share. The results of this research suggest that initiators of projects should also be asked to provide specific minimum target levels, below which failure would be recognized, triggering changes in policy or action. This goal-setting technique might reduce the likelihood of escalating commitment to a failing project in several ways. First, setting precise decision rules before knowing the outcome should make it more difficult for a manager to interpret negative evidence as ambiguous or supporting continuation of the project. Second, including in the original plan the possibility of not achieving target performance and having to change the course of action might increase the legitimacy of withdrawal. Finally, the simple act of setting minimum targets is likely to make managers more mindful of the possibility that goals may not be achieved, increasing the perceived necessity of backup procedures and alternative courses of action (Brockner & Rubín, 1985).

A second potentially effective deescalation technique would be for organizations to emphasize decision process rather than to simply focus on decision outcomes. This strategy is consistent with Edwards's (1984, p. 7) notion that

a good decision cannot guarantee a good outcome. All real decisions are made under uncertainty. A decision is therefore a bet, and evaluating it as good must depend on the stakes and the odds, not on the outcome.

In line with this recommendation, it is important to recognize that evaluation of decisions should take place prior to knowing the results of the decision, so as to avoid the potential biasing effect of outcomes on the assessment of decision process (cf. Baron & Hershey, 1988).

A third potentially applicable technique is that of threat reduction. Although we do not recommend that organizations eliminate individuals' responsibility for their actions, there can be substantial reduction in the consequences of failure. As noted by Kanter (1985), some organizations already use limited and temporary penalties for managers of failing projects, avoiding procedures that jeopardize managers' job security or eventual promotion in the organization. By making managers less fearful of the consequences of failure, the desire to save a course of action at almost any cost may be diminished.

Conclusion

This study was an attempt to formulate strategies for deescalation. As such, several leads were substantiated, ranging from threat reduction to goal setting and accountability for decision process. Although the primary purpose of the research was to formulate deescalation procedures that could be applied to organizational settings, the results of the study also provide at least indirect validation of prior escalation theory. Given the findings of this study and their fit with existing theory, a stronger case can now be made for further research on modes of deescalation, using both laboratory and field investigations.

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Correction to Yammarino and Markham

In the article "On the Application of Within and Between Analysis: Are Absence and Affect Really Group-Based Phenomena?" by Francis J. Yammarino and Steven E. Markham (*Journal of Applied Psychology*, 1992, Vol. 77, No. 2, pp. 168-176), the exponents in Equations 4 and 5 are incorrect. The correct exponent in each equation is $1/2$.
