

Understanding Behavior in Escalation Situations

BARRY M. STAW* AND JERRY ROSS

Everyday observation reveals that both individuals and organizations often become overly committed to losing courses of action; in a sense, throwing good money after bad. More than 10 years of research on this escalation problem shows that persistence is associated with at least four major classes of determinants: project, psychological, social, and organizational variables. The influence of these four sets of variables evolves over time, forming a dynamic model of behavior in escalation situations.

AT AN EARLY STAGE OF THE VIETNAM WAR, GEORGE BALL, then Undersecretary of State, wrote the following memo to Lyndon Johnson, warning him about the likely consequences of making further commitments of men and material:

The decision you face now is crucial. Once large numbers of U.S. troops are committed to direct combat, they will begin to take heavy casualties in a war they are ill-equipped to fight in a noncooperative if not downright hostile countryside. Once we suffer large casualties, we will have started a well-nigh irreversible process. Our involvement will be so great that we cannot—without national humiliation—stop short of achieving our complete objectives. Of the two possibilities I think humiliation will be more likely than the achievement of our objectives—even after we have paid terrible costs” [1 July 1965 (1), p. 450].

George Ball’s remarks were not only prophetic about the U.S. experience in Vietnam. They also pointed to the more general problem of coping with what are now called “escalation situations.” These are situations in which losses have resulted from an original course of action, but where there is the possibility of turning the situation around by investing further time, money, or effort.

The frequency of escalation situations can be depicted by everyday examples. When an individual has a declining investment, a faltering career, or even a troubled marriage, there is often the difficult choice between putting greater effort into the present line of behavior versus seeking a new alternative. At the organizational level, similar dilemmas occur. Laboratories must make difficult decisions about whether to continue with or withdraw from disappointing research and development (R&D) projects; banks must decide how to manage their involvement in nonperforming loans; and industrial firms often need to determine whether to abandon a questionable venture versus investing further resources. In each of these situations

it is frequently observed that individuals as well as organizations can become locked in to the existing course of action, throwing good money or effort after bad. This “decision pathology” has been variously labeled the escalation of commitment (2), the psychology of entrapment (3), the sunk cost effect (4), and the too-much-invested-to-quit syndrome (5). We will review the state of research on this problem and then provide a summary theoretical model along with some guidelines for future research.

Classes of Escalation Determinants

Much of the early work on the escalation problem focused on psychological factors that lead decision-makers to engage in seemingly irrational acts—that is, behavior not explained by either objective circumstances or standard economic decision-making (5–7). In response, some researchers have stressed that escalation does involve rational decision-making, because individuals do attend to the economic realities of escalation situations once they are made salient or clear to the person (8). Alternatively, others have found (9) that escalation behavior can be depicted as a rational calculus, but this requires going beyond the narrow economics of the situation to include many psychological and social costs of withdrawal, such as the personal and public embarrassment of admitting failure.

Debates over the rationality of behavior in escalation or any other situation are not likely to be settled soon. In fact, these arguments may detract attention away from the central phenomenon of interest, which is the tendency of individuals and organizations to persist in failing courses of action. To understand this tendency, one must account for a variety of forces, both behavioral and economic. We will therefore summarize research on four classes of determinants: those associated with objective characteristics of the project as well as psychological, social, and organizational variables.

Project Determinants

Project variables are the most obvious determinants of persistence in a course of action. Research has shown, for example, that commitment is affected by whether a setback is judged to be due to a permanent or temporary problem (10); by whether further investment is likely to be efficacious (11); by how large a goal or payoff may result from continued investment (7); by future expenditures or costs necessary to achieve a project’s payoff (12); and by the number of times previous commitments have failed to yield returns (13).

A few project variables are less obvious causes of persistence. Endeavors such as R&D and construction projects often foster

B. M. Staw is at the School of Business Administration, University of California at Berkeley, CA 94720. J. Ross is at the Institut Européen d’Administration des Affaires, Fountainebleau, France.

*To whom correspondence should be addressed.

commitment because there is a long delay between expenditures and economic benefits. In these cases, shortfalls in revenue or outcomes may not be monitored closely or cause alarm, since losses are (at least initially) expected to occur. In other cases, projects may continue, in part, because they have little salvage value and involve substantial closing costs if terminated in midstream (8). For example, the World's Fair Expo 86 reached the point late in its construction in which continuation was expected to produce large losses, but even larger losses would have been sustained if the project had been aborted before its formal opening (14). In a few cases, projects can become so large that they literally trap the sponsoring organization into continuing the course of action. The Long Island Lighting Company's construction of the Shoreham Nuclear Power Plant is an example of such a no-win situation, in which persistence was seen as costly, yet withdrawal was (until very recently) viewed as bringing even worse economic consequences to the organization (15).

Psychological Determinants

In addition to the objective properties of a project, several psychological variables can also influence persistence in losing courses of action. Probably the simplest of these determinants are information processing errors on the part of decision-makers.

Although accounting and economics texts routinely state that investments should only be made when marginal (future) revenues exceed marginal costs (16), people may not actually behave this way. Consider the responses of college students to the following two questions posed by Arkes and Blumer (4):

Question 3A. As the president of an airline company, you have invested 10 million dollars of the company's money into a research project. The purpose was to build a plane that would not be detected by conventional radar, in other words, a radar-blank plane. When the project is 90% completed, another firm begins marketing a plane that cannot be detected by radar. Also, it is apparent that their plane is much faster and far more economical than the plane your company is building. The question is: should you invest the last 10% of the research funds to finish your radar-blank plane? Yes, 41; No, 7.

Question 3B. As president of an airline company, you have received a suggestion from one of your employees. The suggestion is to use the last 1 million dollars of your research funds to develop a plane that would not be detected by conventional radar, in other words, a radar-blank plane. However, another firm has just begun marketing a plane that cannot be detected by radar. Also, it is apparent that their plane is much faster and far more economical than the plane your company could build. The question is: should you invest the last million dollars of your research funds to build the radar-blank plane proposed by your employee? Yes, 10; No, 50.

These data clearly indicate that sunk costs (those previously expended but not supposed to affect investment decisions) are not sunk psychologically. They continue to influence subsequent investment decisions.

Not only do escalation situations involve sunk costs in terms of money, time, and effort; they also are framed as losing situations in which new investments hold the promise of turning one's fortunes around. Unfortunately, this is exactly the context in which Kahneman and Tversky (17) and others (18) found individuals to be risk-seeking. People take more risks on investment decisions framed in a negative manner (for example, to recover losses or prevent injuries) than when the same decision is positively framed (to achieve gains).

The miscalculation of sunk costs and negative framing can be characterized as rather "cool" information processing errors, as heuristics (however faulty) called on by individuals to solve escalation problems. Escalation situations can also involve "warmer," more motivated cognitions, however. Self-justification biases (19) have been singled out as a major motivational cause of persistence.

In one of the earliest escalation experiments, Staw (6) hypothe-

sized that people may commit more resources to a losing cause so as to justify or rationalize their previous behavior. He suggested that being personally responsible for losses is an important factor in becoming locked in to a course of action. This hypothesis was first tested in an experimental simulation with business school students. All subjects played the role of a corporate financial officer in allocating R&D funds to the operating divisions of a hypothetical company. Half the subjects allocated R&D funds to one of the divisions, were given feedback on their decisions, and then were asked to make a second allocation of R&D funds. The other half of the subjects did not make the initial investment decision themselves, but were told that it was made by another financial officer of the firm. Feedback was manipulated so that half the subjects received positive results on their initial decisions, while half received negative results.

Data from Staw's study showed that subjects allocated significantly more money to failing than to successful divisions. It was also found that more money was invested in the chosen division when the participants, rather than another financial officer, were responsible for the earlier funding decision. These results suggest that individuals responsible for previous losses may try to justify (or save) their earlier decisions by committing additional resources to them. Also, because both high- and low-responsibility subjects faced a negative financial scenario (one with previous losses), it can be argued that justification motives may affect commitment above and beyond any sunk cost or framing effects. Several experiments have replicated this self-justification finding with similar responsibility manipulations (20).

Closely related to the self-justification explanation of persistence are the findings of other motivated biases. Cognitive studies show that people slant data in the direction of their preexisting beliefs and discredit information that conflicts with their opinions (21). Parallel effects in the escalation area have demonstrated that decision-makers responsible for a failing course of action tend to make greatest use of positive and exonerating information (22). Thus, it appears that justification motives may not only affect decisions to save a risky course of action, but may also affect the accuracy of data on which such decisions are made.

In addition to efforts to justify behavior, some passive self-inference processes may also affect individuals in escalation situations. Salancik (23) and Kiesler (24) have posited that individuals are likely to become especially bound or committed to a prior behavior when (i) the individual's acts are explicit or unambiguous, (ii) the behavior is irrevocable or not easily undone, (iii) the behavior has been entered into freely or has involved a high degree of volition, (iv) the act has importance for the individual, (v) the act is public or is visible to others, and (vi) the act has been performed a number of times. These six self-inference conditions assume that individuals draw inferences about their own behavior and the context in which it occurs. Though self-inference theories are less motivational than those that use self-justification concepts (no needs for rationalization are implied), the two approaches overlap almost entirely in their empirical predictions (25).

Social Determinants

Although most of the research on escalation has dealt with psychological or project variables, escalation situations are often more complicated social phenomena. For example, administrators may persist in a course of action, not just because they do not want to admit a mistake to themselves, but because they hesitate to expose their errors to others. Fox and Staw (26) tested this notion of external justification in a role-playing experiment. They found that

subjects holding administrative roles with low job security and lack of support by management allocated the greatest resources to a losing course of action. Conceptually similar results were reported by Brockner, Rubin, and Lang (12). They found persistence to be highest under a large audience, high social-anxiety condition and interpreted these results as a face-saving effect. Additional evidence of face-saving can also be found in the bargaining literature (27), in which it is common to find an escalation of hostilities as both parties refuse to back down from earlier positions. For example, using Shubik's (28) dollar auction game, Tegar (5) found that competitive bidding was influenced first by a simple desire to make money, then as a way to recoup prior losses, and finally, as a means to defeat the other party.

The external binding of people to behavior may also be important in escalation situations. Just as it is possible for individuals to form personal beliefs through a self-inference process (23, 24), observers tend to infer motivation and personal characteristics to actors after observing their behavior (29). Thus, people's social identity may become externally bound by their actions with respect to a project. Though no research has specifically tested this idea, one would expect decision-makers to be most closely identified with a project when their advocacy of it has been public, explicit, perceived to be high in volition, and repeated. At the extreme, a project may start to carry the name of its sponsor (for example, "Reaganomics" or "Thatcherism"), increasing the binding of the person to the behavior, thus making withdrawal from the course of action much more difficult.

Although face-saving and external binding can both be viewed as social factors that increase decision-makers' costs of withdrawal, research has also isolated some social rewards for persistence. Staw and Ross (30) had business students study the behavior of managers in a failing situation. Managers were described as either persisting in a losing course of action or switching to another alternative. The descriptions read by subjects also noted that managers' persistence or experimentation led either to further negative results or ultimate success. As predicted, managers were rated highest when they were persistent and successful. Most interestingly, the data also showed a significant interaction of persistence and outcome. This interaction can be interpreted as a "hero effect"—special praise and adoration for managers who "stick to their guns" in the face of opposition and seemingly bleak odds (31).

Organizational Determinants

Since many of the most costly escalation situations involve the persistence of an entire organization (rather than an isolated individual) to a losing course of action, it is important to consider some organizational determinants of persistence. Unfortunately, few organization-level studies have yet been conducted. Therefore, we are forced to rely more on relevant theory than concrete data in outlining likely organizational determinants of escalation.

Probably the simplest organizational determinant is institutional inertia. Just as there is less than full consistency between individual attitudes and behavior (32), there is also a very loose coupling between organizational goals and action (33). Organizations have imperfect sensory systems, making them relatively impervious to changes in their environments. And, because of breakdowns in internal communication and difficulties in mobilizing their constituents, organizations are slow to respond. Thus, even when the need for change is recognized, it may not occur. Moreover, if actions require altering long-standing policies, violating rules, or discarding accepted procedures, movement is not likely to happen at all, even though (to an outsider) it may seem obviously useful.

Organizations attempting to withdraw from a losing course of action must also contend with political forces. Not only those who are directly involved with a project will resist its dismantling, but so too will units interdependent or politically aligned with the venture. This can become a special problem when projects are important or central enough to have political support on governing bodies and budget committees charged with their fate. As Pfeffer and Salancik (34) have shown in their research on organizational decision-making, organizational actions may turn as much on politics as any objective economic criteria.

At times, a project's support can go beyond politics. The project may be tied so integrally to the values and purposes of an organization that it becomes institutionalized (35), making withdrawal almost an "unthinkable" proposition. Two examples illustrate the problem. The first is Lockheed's L1011 Tri-Star Jet program. Although most outside analysts found the plane unlikely to earn a profit, Lockheed persisted in the venture for more than a decade, accumulating enormous losses (36). The issue was not ending the project, *per se*, but in having to reinterpret the company's role in commercial aviation. For Lockheed to drop the L1011 meant having to change its identity from a pioneer in commercial aircraft to that of simply a defense contractor. Pan American Airlines recently faced a similar institutional issue. More than most airlines, Pan Am suffered major losses after deregulation of the industry. However, as losses accumulated, it successively sold off most of its nonairlines assets. First, the Pan Am building was sold to meet debt obligations. Then, as losses continued to mount, the Intercontinental Hotel chain was sold. Finally, Pan Am was forced to sell its valuable Pacific routes to United Airlines. Withdrawing from the real estate and hotel business was probably an easier decision for this organization than ending the more institutionalized airline operations, irrespective of the economics involved.

The Dynamics of Escalation

This review of escalation research has been more illustrative than exhaustive. Yet, it is evident from even this brief summary that studies of escalation behavior have focused primarily on psychological determinants, with social and organizational variables only recently receiving attention. Unfortunately, this difference in research emphasis has had less to do with the relevance of particular determinants of escalation than the difficulty of operationalizing concepts and conducting empirical studies at more macroscopic levels. Because many of the most disastrous escalation situations involve larger social entities such as governmental and business organizations, further macro-level studies of escalation are therefore needed.

As we have noted, escalation situations are also a forum for a variety of forces, both behavioral and economic. Consequently, an important question for future research is how these various forces combine to affect behavior in escalation contexts. Already some research suggests that escalation behavior may not only be multi-determined, but also temporally dependent. That is, escalation situations may change character over time, such that different determinants of persistence and withdrawal become dominant at separate stages in an escalation cycle. A preliminary model of how the influence of several key variables may unfold over time, based on two field studies of naturally occurring escalation situations (14, 15), is shown in Fig. 1.

The first phase of escalation is dominated by the economics of a project, with the decision to begin a course of action made largely on the basis of the anticipation of economic benefits. However, when questionable or negative results are received (at Phase 2), the

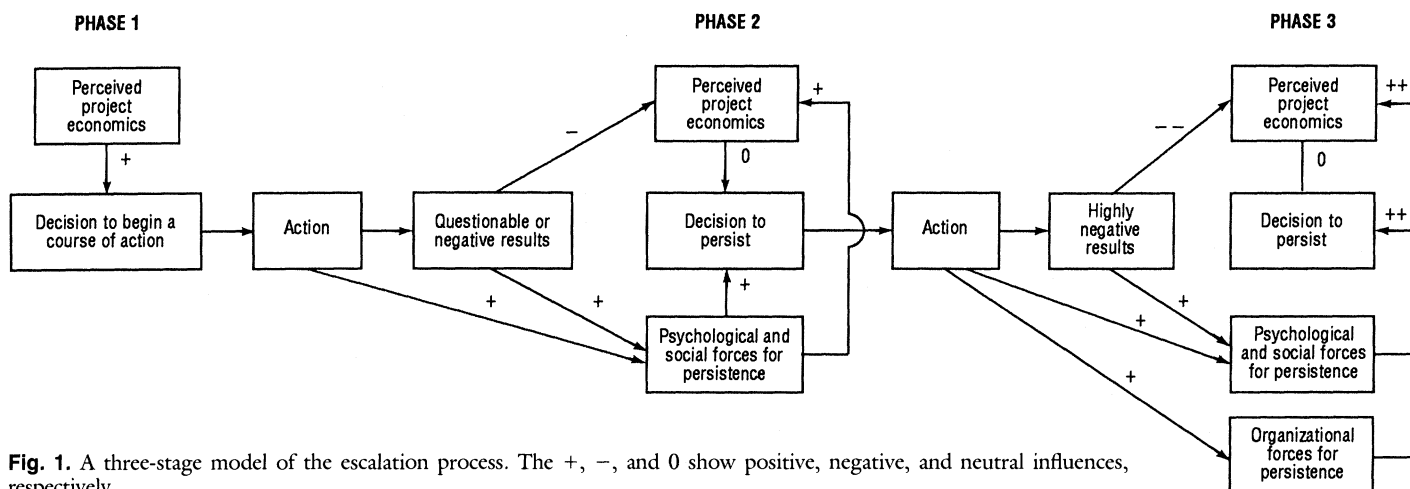


Fig. 1. A three-stage model of the escalation process. The +, -, and 0 show positive, negative, and neutral influences, respectively.

decision to persist is based not just on project economics, but also on psychological and social determinants. Assuming that psychological and social forces are strong enough to outweigh (or bias) any negative economic forecasts, further investment or persistence in the project is likely. If this additional investment does not turn the situation around and further negative results are received (at Stage 3), withdrawal tendencies may be heightened. Unfortunately, at this advanced stage in the escalation cycle any withdrawal tendencies (due to negative project economics) may be counterbalanced and biased by organizational forces for persistence. Thus, as economic outcomes worsen over time, it is possible for projects to be maintained by the accumulation of psychological, social, and organizational forces, each adding some weight to the decision to persist in a course of action.

At this time, the idea of distant stages of escalation remains more of a heuristic for understanding the process of persistence than an empirically tested theory. Yet, two in-depth field studies—an analysis of British Columbia's decision to hold Expo 86 (14) and an examination of Long Island Lighting's commitment to the Shoreham nuclear power plant (15)—have provided support for a temporally based model. In each situation, economic variables were salient early on and psychological and social variables became important after negative consequences started to accumulate, whereas organizational determinants were manifested rather late in the escalation cycle. Of course, whether these time dependencies are always abrupt enough to constitute distinct stages, or whether in other contexts a more gradual shifting of influence occurs, is still an open question.

No doubt an important step in validating a temporal model of escalation will be the isolation of critical incidents setting off or preconditioning particular determinants of persistence. If these preconditions are found to follow a predictable sequence (that is, arising early or late in the escalation cycle) across a variety of contexts, then a strong case can be made for a temporal model.

In searching for the preconditions of escalation, we would argue that escalation situations typically involve the following sequence of events. First, in launching a new product or project, individual "project champions" will not only work hard to promote the venture but in so doing will probably sow the seeds for subsequent commitment (for example, via self-inference effects). Once questionable or adverse results are received, a negative perceptual frame and sunk costs may then become associated with the project. At this time, those who have had an active hand in developing the project will likely suffer personal embarrassment (or even loss of employment) with the failing situation, leading to self-justification and face-saving effects. And, once the losses associated with the project are

fully recognized throughout the organization, external binding of the proponents to the project (for example, "that's Jim's baby") is likely to make withdrawal even more costly to the individuals involved. Finally, assuming that the project does survive several rounds of negative feedback, then more global, organizational processes may start to manifest themselves. Political support may arise as individual careers and whole departments become dependent on the project. And, if the project lasts long enough, withdrawal can become extremely costly not only in terms of the economics involved, but also in terms of the identity of the firm itself.

As elaborated here, the sequence of critical incidents in escalation situations may tend to move from the individual, to the interpersonal environment, and then to the larger organization. We believe this is a natural evolution as project originators (or champions) try to defend a losing course of action, first by themselves (via risk-taking and information biasing) and then by the mobilization of resources involving the larger organization. Additional research on the development of escalation situations is obviously needed to verify these temporal dynamics.

Escalation as a Multidetermined Event

Since several sources of commitment can be triggered by losing courses of action, one might conclude that persistence is an overdetermined variable, an almost inevitable consequence of escalation situations. A contrary view is that escalation is created by a series of small-impact variables, each insufficient by itself to cause one to remain in a losing situation. For example, if economic losses are large and they occur early in a project's life cycle, withdrawal may well be the dominant response. However, if losses do not appear until later in the process (after several behavioral effects have been initiated), then persistence could be the typical response. Thus, the speed and severity of negative economic data could be a crucial element in how relative forces unfold in escalation situations. Though not an explicit test of this hypothesis, an experiment by Golz (37) has shown how sensitive investment decisions are to the pattern of negative consequences. A slow and irregular decline may not only make a line of behavior difficult to extinguish (in the reinforcement theory sense), but may also allow the forces for persistence to grow over time. Adding support to this "unfolding argument" is a study by Brockner and Rubin (3), in which they found that negative economic data prompted withdrawal when it was introduced early in an escalation situation, but had little influence when introduced after the decision to commit resources had already been made.

Conclusion

As shown by our temporal model, escalation situations contain a confluence of forces—some pulling toward withdrawal and others pushing toward persistence—with their relative strengths varying over time. This dynamic view of escalation is consistent with the contextualist perspective (38) in which social reality is seen as dependent on the situation in which it occurs. Contextualist reasoning supports the continued pursuit of case studies on the dynamics of escalation situations and supports efforts to add realism to experimental tests. Greater efforts are needed to capture experimentally the life-span of escalation episodes so that the relative influence of contributing variables can be tracked over time. Only with such temporally based studies, from both the laboratory and the field, are the dynamics of escalation situations likely to be fully understood.

REFERENCES AND NOTES

1. The New York Times (based on the investigative reporting of Neil Sheehan), *The Pentagon Papers* (Bantam Books, New York, 1971).
2. B. M. Staw, *Acad. Manage. Rev.* **6**, 577 (1981).
3. J. Brockner and J. Z. Rubin, *Entrapment in Escalating Conflicts* (Springer-Verlag, New York, 1985).
4. H. R. Arkes and C. Blumer, *Organ. Behav. Hum. Decis. Processes* **35**, 124 (1985).
5. A. Tegar, *Too Much Invested to Quit* (Pergamon Press, New York, 1980).
6. For example, B. M. Staw, *Organ. Behav. Hum. Performance* **16**, 27 (1976).
7. J. Z. Rubin and J. Brockner, *J. Pers. Soc. Psychol.* **31**, 1054 (1975).
8. For example, G. B. Northcraft and G. Wolf, *Acad. Manage. Rev.* **9**, 225 (1984).
9. B. M. Staw and J. Ross, in *Research in Organizational Behavior*, L. L. Cummings and B. M. Staw, Eds. (JAI Press, Greenwich, CT, 1987), vol. 9, pp. 39–78.
10. L. Leatherwood and E. Conlon, "The impact of prospectively relevant information and setbacks in persistence in a project following setback" (working paper 85-1, College of Business Administration, University of Iowa, 1985).
11. B. M. Staw and F. V. Fox, *Hum. Relat.* **30**, 431 (1977); T. Bateman, "Resource allocation after success and failure: The roles of attributions of powerful others and probabilities of future success" (Department of Management, Texas A&M, College Station, TX 91983).
12. J. Brockner, J. Z. Rubin, E. Lang, *J. Exp. Soc. Psychol.* **17**, 68 (1981).
13. B. E. McCain, *J. Appl. Psychol.* **71**, 280 (1986).
14. J. Ross and B. Staw, *Adm. Sci. Q.* **31**, 224 (1986).
15. ———, "Escalation and the Long Island Lighting Company: The case of the Shoreham Nuclear Power Plant" (Working paper, Institut Européen d'Administration des Affaires, Fontainebleau, France, 1989).
16. P. A. Samuelson, *Economics* (McGraw-Hill, New York, 1988); C. T. Horngren, *Cost Accounting: A Managerial Emphasis* (Prentice-Hall, Englewood Cliffs, NJ, 1982).
17. D. Kahneman and A. Tversky, *Econometrica* **47**, 263 (1979); D. Kahneman and A. Tversky, *Science* **211**, 453 (1981).
18. M. A. Davis and P. Bobko, *Organ. Behav. Hum. Decis. Processes* **37**, 121 (1986).
19. E. Aronson, *The Social Animal* (Freeman, San Francisco, 1984); L. Festinger, *A Theory of Cognitive Dissonance* (Stanford Univ. Press, Stanford, CA, 1970).
20. M. H. Bazerman, R. I. Beekun, F. D. Schoorman, *J. Appl. Psychol.* **67**, 873 (1982); M. H. Bazerman et al., *Organ. Behav. Hum. Performance* **33**, 141 (1984); D. F. Caldwell and C. A. O'Reilly, *Acad. Manage. J.* **25**, 121 (1982).
21. T. Gilovich, *J. Pers. Soc. Psychol.* **44**, 1110 (1983); C. Lord, L. Ross, M. R. Lepper, *ibid.* **37**, 2098 (1979).
22. E. J. Conlon and J. M. Parks, *J. Appl. Psychol.* **72**, 344 (1987).
23. G. R. Salancik, in *New Directions in Organizational Behavior*, B. M. Staw and G. R. Salancik, Eds. (Krieger, Malabar, FL, 1977).
24. C. A. Kiesler, *The Psychology of Commitment* (Academic Press, New York, 1971).
25. P. E. Tetlock and A. Levi, *J. Exp. Soc. Psychol.* **18**, 68 (1982).
26. F. V. Fox and B. M. Staw, *Adm. Sci. Q.* **24**, 449 (1979).
27. H. Raiffa, *The Art and Science of Negotiation* (Harvard Univ. Press, Cambridge, MA, 1982).
28. M. Shubik, *J. Conflict Resolut.* **15**, 109 (1971).
29. E. E. Jones and K. E. Davis, in *Advances in Experimental Social Psychology*, L. Berkowitz, Ed. (Academic Press, New York, 1965), vol. 2.
30. B. M. Staw and J. Ross, *J. Appl. Psychol.* **65**, 249 (1980).
31. M. G. Evans and J. W. Medcof, *Can. J. Adm. Sci.* **1**, 383 (1984).
32. M. P. Zanna and R. H. Fazio, in *Consistency in Social Behavior*, M. P. Zanna, E. T. Higgins, C. P. Herman, Eds. (Erlbaum, Hillsdale, NJ, 1982).
33. J. G. March and J. P. Olson, *Ambiguity and Choice in Organizations* (Universitetsforlaget, Bergen, Norway, 1976).
34. J. Pfeffer and G. R. Salancik, *Adm. Sci. Q.* **19**, 135 (1974); G. R. Salancik and J. Pfeffer, *ibid.*, p. 453.
35. P. S. Goodman, M. Bazerman, E. Conlon, in *Research in Organizational Behavior*, B. M. Staw and L. L. Cummings, Eds. (JAI Press, Greenwich, CT, 1980), vol. 2, pp. 215–246; L. G. Zucker in *Research in the Sociology of Organizations*, S. Bacharach, Ed. (JAI Press, Greenwich, CT, 1983).
36. U. E. Reinhardt, *J. Finance* **28**, 821 (1973).
37. S. M. Golz, "A learning-based analysis of escalation of commitment, sunk cost, and entrapment," paper presented at American Psychological Association meeting, Atlanta, GA, August 1988.
38. W. J. McGuire, in *Advances in Experimental Social Psychology*, L. Berkowitz, Ed. (Academic Press, New York, 1984).
39. Supported by the Institute of Industrial Relations, University of California, Berkeley.

