THE EFFECT OF AN ORGANIZATION'S RECENT PERFORMANCE HISTORY ON STRATEGIC PERSISTENCE AND CHANGE:

THE ROLE OF MANAGERIAL INTERPRETATIONS

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ABSTRACT

This paper explores how an organization's recent performance history may activate certain psychological and inertial processes that bias managers' strategic thinking and interpretations of the organization's environment. We argue that the cumulative effect of these processes is to incline managers toward persisting with a prior strategy under conditions of both success and failure. Understanding the role that psychological and inertial processes play in influencing managers' strategic thinking may help to explain the patterns of convergence and reorientation found in past research. We also discuss environmental and organizational factors that may mitigate persistence pressures in organizations.

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Top-level managers have the difficult task of navigating their organizations through a complex and changing environment. A central part of this navigational task involves deciding when and how to change the organization's strategic direction in order to achieve a successful "fit" with the demands imposed by the environment (Weick, 1987). These decisions require managers to interpret the environment, the organization's past performance outcomes, and analyze whether there is a fit between the organization and its environment. Complicating this already difficult process is the fact that managers' interpretations may be systematically affected by various psychological and inertial factors.

In recent years, interpretive or cognitively-based models of strategy have been attracting increasing theoretical and empirical attention (e.g., Bateman & Zeithaml, 1989; Daft & Weick, 1984; Dutton & Duncan, 1987; Dutton & Jackson, 1987; Jackson & Dutton, 1988; Thomas & McDaniel, 1990). Such models seek to explain the cognitive processes that underlie strategy formulation tasks and to explore the various factors that may affect managers' strategic choices. Examples of studies based on such interpretive models of the strategic decision making process include: examining how characteristics of environmental issues affect the likelihood that they will be labeled "threats" and "opportunities" (Dutton & Jackson, 1987; Jackson & Dutton, 1988); exploring the effect of organizational characteristics on the manner in which strategic issues are interpreted (Meyer, 1982; Milliken, 1990; Thomas & McDaniel, 1990); and exploring the role that managerial characteristics play in the issue identification and interpretation process (Fiol; 1989; Walsh, 1988). A related body of work has examined how heuristics and framing may affect managers' strategic decision making processes (Barnes, 1984; Bateman & Zeithaml, 1989; Schwenk, 1984). This growing body of research is beginning to provide us with insights into how managers' strategic choices may be systematically influenced by contextual characteristics, by managerial characteristics, by managers' cognitive limitations, and by the characteristics of the issues they confront.

In this paper, we seek to contribute to this stream of research by examining how an organization's recent performance history might systematically influence managers' interpretive processes and subsequent strategic choices. As Einhorn (1986, p. 269) notes, "a great deal of learning from experience involves the learning of action-outcome linkages." Making interpretations about cause and effect relationships is, thus, a key part of organizational learning. In other words, managers must attempt to figure out why the organization achieved the performance outcomes it did. At the most fundamental level, managers must analyze past performance outcomes and make a decision as to whether to persist with the prior strategy or to change strategies. In this paper, we argue, however, that recent experiences of success and failure may also activate powerful psychological and inertial processes that influence managers' strategic

thinking about whether to persist with a past strategy or undertake a major strategic change or reorientation (Tushman & Romanelli, 1985).

Although much has been written about patterns of organizational convergence and reorientation over time (Miller & Friesen, 1980; Tushman, Newman, & Romanelli, 1988; Tushman, & Romanelli, 1985; Tushman, Virany, & Romanelli, 1989), the question of what determines managers' inclination to persist or reorient has not been specified adequately. In this paper we argue that patterns of convergence and reorientation do not necessarily originate from rational, adaptive decisions; rather, we attempt to explain this observed pattern of strategic choice by placing ourselves in a world that resembles the world in which practicing managers operate. In such a world, managers receive feedback about the organization's performance and must make judgments about the causes of this performance in order to adjust the organization's actions. They must do so given considerable uncertainty both about the nature of the organizational environment and about action- outcome linkages (Hall, 1984; March & Olsen, 1976; Masuch, 1985; Miller & Friesen, 1980). This ambiguity makes accurate learning about cause-effect relationships extremely difficult (March & Olsen, 1976; Nystrom & Starbuck, 1984). In this paper, we focus particular attention on the role of managers as "bounded" interpretors of information who not only experience considerable uncertainty but also may be subject to various psychological and inertial forces stimulated by the organization's past performance history that may bias their thinking.

We argue that a number of forces tend to push managers toward persistence after experiences of both success and failure. These forces include structural inertia and the psychological responses triggered by success and failure. We also consider the role that slack may play in fostering persistence, particularly given a recent history of successful performance. These forces are mediated by various organizational and environmental characteristics that either exacerbate or mitigate specific persistence pressures.

The paper is organized into four major sections. In the first section we briefly review the literature on convergence and reorientation in order to define these two types of strategies. We then suggest that, contrary to what normative models of strategy might predict, persistence forces make convergence the more likely strategy after both success or failure. In the second section we describe the various forces that push an organization toward a persistence or convergence strategy given a past history of successful performance. In the third section we highlight the persistence forces that are likely to become activated after a period of unsuccessful performance. We then discuss environmental and organizational factors that may mediate the strength of persistence forces in organizations under conditions of both success and failure. Finally, we discuss the research and practical implications of the ideas discussed in the paper.

THE RELATIONSHIP BETWEEN PAST PERFORMANCE AND STRATEGIC CHOICE: THE ROLE OF INTERPRETATION

In this paper, we classify an organization's strategic options by the degree to which they represent a change from past strategic choices. For simplicity, we categorize these options as (1) alternatives that involve persisting with a past strategy, or convergence and (2) alternatives that involve major changes in strategies or, in the extreme, reorienting the organization. We derive this classification from Tushman and Romanelli (1985) and Miller and Friesen (1980) who observed that organizations experience long periods of convergence punctuated by short periods of reorientation.

Convergence is defined as a period of equilibrium characterized by "relatively long time spans of incremental change and adaptation that elaborate structures, systems, controls, and resources toward increased coalignment" (Tushman & Romanelli, 1985, p. 173). Miller and Friesen (1980) use the term "momentum" to describe a similar phenomenon. During times of convergence or momentum, organizations persist with a particular strategy and attempt to hone their capacity to implement the strategy effectively by making incremental adjustments in their structures and procedures. Lant and Mezias (1988) argue that since these adjustments do not reflect changes in underlying assumptions about goals or means to achieve those goals, they reflect first-order learning. First-order learning is a routine process of gaining competence in existing activities, routines, or technologies, and serves to maintain system stability.

The punctuations in these equilibria are called reorientations or upheavals (Tushman, Newman, & Romanelli, 1986). They involve "simultaneous and discontinuous shifts in strategy, the distribution of power, the firm's core structure, and the nature and permissiveness of control systems" (Tushman & Romanelli, 1985, p. 179). Miller and Friesen (1980) use the word "revolution" to capture these same ideas. These periods are thus characterized by changes not only in strategy but also in a host of organizational systems and procedures designed to implement these strategies (Miller & Friesen, 1980; Tushman & Romanelli, 1985; Tushman, Newman & Romanelli, 1988).

Tushman and Romanelli (1985, p. 180) suggest that in order for reorientations to occur, there must be a "recognition of an actual or potential organization-environment inconsistency and direct intervention on prior convergent processes." Lant and Mezias (1988) expand on this and argue that reorientations require fundamental changes in managerial assumptions and thus, require second-order learning. Second-order learning involves searching for and exploring new activities, technologies, and goals.

Decisions to converge or reorient are made under conditions of uncertainty; managers must make decisions today, the success of which cannot be assessed

until some time in the future (Ford & Baucus, 1987; Smircich & Stubbart, 1985). While the current literature on convergence and reorientation stresses the importance of executive leadership in determining the likelihood of convergence and reorientation and suggests that executives' interpretations are likely to play an important role in these choices (Tushman & Romanelli, 1985; Tushman et al., 1988; Tushman et al., 1989), the precise mechanisms by which interpretations influence the leaders' choices have not been specified. The model developed in this paper suggests that the recent performance history of the organization plays a critical role in activating the psychological and inertial processes that influence interpretations, and thus, when these periods of convergence and reorientation will occur.

We couple these two potential outcomes of strategic choice with two potential performance outcomes, success and failure, as a way of outlining, in a simplified way, the universe of possible relationships between past performance and strategic choice. Success and failure are defined broadly as performance relative to the average performance level in the industry on standard performance indicators such as profitability (Miller & Friesen, 1984). Using this simple scheme, it is easy to see that there are four possible effects of past performance on strategic choice, as indicated in Figure 1.

Although each of these relationships is both theoretically and empirically plausible, some of the relationships are more probable than others. Conventional wisdom, which assumes that behavior is guided by reinforcement principles (cf. Bandura, 1977a), would suggest that past success would yield persistence and past failure would yield change, and that the off-diagonal cells would be relatively unlikely. We argue, however, that biases in managerial interpretive processes result in behaviors that may not be predicted by the

	Persistence	**Change**
Past Success		
Past Failure		

Figure 1. Strategic Choice Consequences of Past Performance

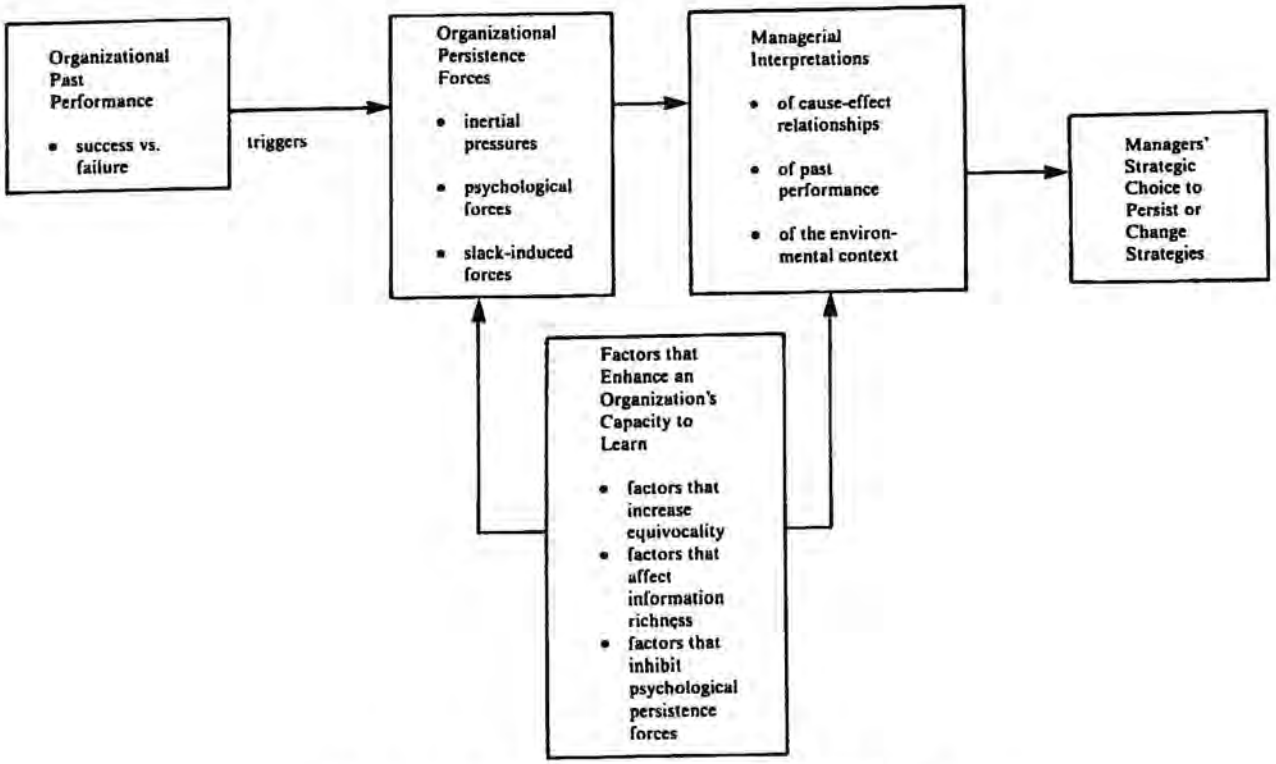

Figure 2. An Interpretive Model of Strategic Choice: The Role of Organizational Persistence Forces and Their Effect on Managers' Interpretations and Actions

application of a simple reinforcement model of behavior. The psychological and inertial forces that influence the interpretation process make persistence the more likely response under conditions of both success and failure. However, these forces are mediated by several organizational and environmental factors that may exacerbate or mitigate this tendency to persist. Figure 2 outlines the general model on which the paper builds. The following sections explore in detail the factors that may influence managers' decisions to persist or reorient.

Managerial Interpretations Following Successful Performance

Success tends to lead to persistence with the strategy that is perceived to have yielded the successful performance. In this section we discuss three factors that may influence managers of successful organizations to make decisions that result in strategic persistence; these are: inertial forces, psychological forces, and perceptions of financial and psychological slack.

The Effect of Inertial Forces on Managerial Interpretations

Many organizational theorists have suggested that organizations experience tremendous structural forces that push them towards inertia or stability (Hannan & Freeman, 1984; Nystrom & Starbuck, 1984; Perrow, 1987; Tushman et al., 1988). Inertial forces may arise from a variety of sources, both external and internal. Hannan and Freeman (1984), for example, argue that stable organizational structures are selected for in organizational populations because they represent reliability, accountability, and structural reproducibility. Further, institutional theory (Meyer & Rowan, 1977) suggests that external constituents who value consistency in an organization's strategy and operating procedures may cause managers to feel pressured to stick with previous strategies in order to maintain organizational legitimacy (Staw & Ross, 1978).

The internal forces for inertia can be categorized along the same dimensions as those used to define strategic orientation: business strategy, power distribution, structure, and control systems (Tushman & Romanelli, 1985). There is frequently inertia in an organization's strategies because of managers' commitment to previously made decisions (Chatman, Bell, & Staw, 1986; Pfeffer, 1981). Commitment makes it difficult for decision makers to experiment with alternatives to their current strategic choices (Kiesler & Sproull, 1982), especially if commitment to current activities has been stated publicly (Staw & Ross, 1978). Power distributions are also characterized by inertia because they become institutionalized in organizations through a process of commitment, institutionalization of beliefs and practices, and self-perpetuation (Pfeffer, 1981). Control systems and organizational structures represent rules for the distribution of scarce resources; these systems are put in place by powerful players in the

organization, and thus are characterized by the same inertial forces that influence the power distribution.

Successful organizations are likely to experience a greater amount of inertial pressure than less successful organizations (Ginsberg, 1988). One reason is that external pressures for consistency are likely to be much stronger after a period of success than after a period of failure. External constituents are likely to place a much higher value on consistency in an organization's behavior when that behavior has yielded positive outcomes in the past. In addition, inertial pressures are likely to be stronger after a period of successful performance because managers can use the past success as a rationale for justifying the preservation of the status quo. In other words, they can reasonably argue "if it ain't broke, why fix it?"

The Effect of Psychological Forces on Managerial Interpretations

Reading reinforcement contingencies. According to a reinforcement model of learning, organizational actions that are associated with success will tend to be repeated, while actions associated with failure will decrease in frequency (cf. Bandura 1977a; Levitt & March, 1988). The reason is that associations form between behavior and their apparent outcomes. That is, success becomes causally linked with a strategy or routine in the minds of organizational decision makers and external constituents (Cyert & March, 1963; March & Olsen, 1976) irrespective of whether such a causal link, in fact, exists. Thus, reinforcement effects make successful organizations more likely than less successful organizations to resist change and to persist with past strategies (Cyert & March, 1963; Ginsberg, 1988; Levitt & March, 1988; March & Simon, 1958; Nystrom & Starbuck, 1984; Tushman et al., 1988). However, the ambiguity about cause-effect relationships means that there is some probability that managers may misread reinforcement contingencies and engage in superstitious learning (March & Olsen, 1976). In other words, managers may believe that their prior behavior will continue to be successful when, in fact, the reinforcement contingencies have changed. Thus, managers may fail to "unlearn" old behaviors even though the context has changed so as to require new behaviors (Nystrom & Starbuck, 1984).

Successful organizations, like individuals, are also subject to competency traps (Levitt & March, 1988). When individuals or organizations develop experience and competencies with various routines and strategies, they may resist changing to a superior alternative because it is perceived to be too costly. The benefits associated with exploiting the efficiencies connected with the old routine are perceived to outweigh the start-up costs associated with change.

Attributing causes for past performance. Attributional tendencies also play an important role in fostering persistence. When organizations are successful, managers are likely to make internal attributions for their success. The tendency

to make internal attributions for good performance outcomes has been documented extensively in social-psychological research (Fiske & Taylor, 1984; Miller & Ross, 1975; Nisbett & Ross, 1980; Schlenker & Miller, 1977) and organizational studies (Fahey & Narayanan, 1986; Salancik & Meindl, 1984; Staw, McKechnie, & Puffer, 1983). One cause of this internal attribution tendency may be the felt need for a sense of efficacy or control. Another cause may be the desire to manage external impressions (Chatman et al., 1986). When an internal attribution is made for an organization's performance outcomes, success is attributed to the organization's strategy and/or systems, structures, and programs rather than to serendipity or to environmental forces. This internal attribution tendency may, in fact, be one of the major reasons why superstitious learning occurs.

The tendency to make internal attributions for past success is exacerbated under certain conditions. For example, the internal attribution tendency is likely to be stronger when the managers who are doing the attributing are the same managers who designed the strategy, and thus believe that they are responsible for the organization's past performance. Managers who are under pressure to manage the impressions of internal and external constituents are also more likely to make internal attributions for past success (Salancik & Meindl, 1984).

Perceiving the environment. As long as conditions in the external environment are perceived to have remained stable, then persistence with a strategy that is believed to have caused success in the past may be sensible. Persistence may not be functional if the environmental contingencies associated with prior success have changed. However, a past history of success may bias managers' perceptions of environmental contingencies, inclining them to perceive environmental contingencies as stable.

Success, as Weick (1987) and Tushman et al. (1988) have noted, may breed complacency; complacency, in turn, may result in decreased vigilance to environmental conditions. Tushman et al. (1988, p. 68) have argued that "a paradoxical result of long periods of success may be heightened organizational complacency, decreased organizational flexibility, and a stunted ability to learn." Organizations that are not vigilant in their attention to the environment may fail to notice changes in key environmental variables. Consequently, managers who have experienced long periods of success may be less likely to notice the changes in environmental contingencies that signal a need to change the strategic orientation of the firm.

Milliken (1990), for example, found that managers were less likely to perceive an environmental change as threatening when they perceived that the organization had been performing well in the past. One reason may be that individuals are likely to discount information that is disconfirming (Kiesler & Sproull, 1982; Schwenk, 1984). Thus, managers may not notice information

about trends that might threaten the viability of their current strategy because they are looking for confirmatory rather than disconfirmatory information. Kiesler and Sproull (1982) also argue that even if potentially threatening environmental changes are noticed, they may be ignored or their effects may be underestimated because of managers' cognitive commitment to previous strategies or programs. We call the process whereby success breeds complacency, decreased vigilance, and the tendency to interpret environmental change as temporary or unimportant, a complacency trap.

The tendency for past success to alter perceptions of the environment is mediated by several variables. Perceived uncertainty about the environment can lead to increased environmental scanning and information processing (Kiesler & Sproull, 1982), which may mitigate the tendency for successful organizations to pay less attention to their environment. Organizations that engage in active scanning of their environment (Aguilar, 1967; Daft & Weick, 1984) may be more likely to recognize change, and thus, may contemplate and enact strategic reorientations more frequently. The effect of past success on perceptions of the environment is also influenced by the type of environment managers have experienced historically. These mediating factors are discussed in more detail later in the paper.

The Effect of Financial and Psychological Slack on Managerial Interpretations

Cyert and March (1963) suggest that successful organizations tend to build up financial slack due to certain inefficiencies within organizations. This argument is based on the concept of satisficing, where individuals and organizations set aspiration levels for performance rather than maximizing expected outcomes. Actual performance is evaluated relative to this aspiration level, and aspirations will adjust upward or downward depending on actual performance. Since the adjustment of aspirations is usually slower than actual changes in performance (Lant, forthcoming), excess resources from superior performance can accumulate in the form of organizational slack. Slack is a stabilizing force in that it absorbs excess resources during good times without requiring that aspirations and intentions regarding the use of these excess resources be updated, and provides a source of resources during periods of poor performance.

While slack represents inefficiency in the economic sense, it often represents survival in the organizational sense. Slack resources allow the organization to survive bad times (Cyert & March, 1963) by maintaining organizational performance in the face of environmental changes as Meyer (1982) found in his study of hospitals. Thus, slack acts as a buffer between the organization and environmental variation, reducing managers' perceived need to change. Because successful performance also increases the tendency to perceive environmental changes as temporary or unimportant, manager of successful

organizations may use their slack resources to wait out the unfavorable environmental activity. The existence of slack resources may also reduce the organizations' vigilance to environmental activity since they view the environment as less of a threat.

It is important to note, however, that pressures toward persistence may be mitigated by the process of slack search. It has been hypothesized that slack resources can provide a financial cushion that enables organizational search processes to become broader and more experimental (Cyert & March, 1963; Levinthal & March, 1981) and may encourage innovation (Bourgeois, 1981). We suggest that the tendency for slack resources to produce persistence may be mitigated when new strategic alternatives are discovered through the process of slack search. Thus, slack search becomes a mediator of the direct effects of financial slack.

Finally, organizational success may also result in a kind of psychological slack such that managers may believe that they are capable of overcoming almost any obstacle that presents itself (Bandura, 1977b). This psychological slack creates the perception of a buffer between organization and environmental variation in much the same way that financial slack does. Starbuck and Milliken (1988) further suggest that repeated instances of success may result in overconfidence and fine-tuning behavior. Managers believe that because they were successful in the past, their probability of being successful in the future has increased. Thus, they believe that they should persist and may, in fact, believe that they can cut back their effort or resources and still achieve good results. This psychological slack is a form of overconfidence about the probability of future success. Such overconfidence leads to persistence with the activities that are believed to have yielded the success and may lead to decreased attention to the environment and to the internal organizational activities required to keep the strategy working. This lack of vigilance further increases the likelihood of persistence, since internal and external factors that might suggest the need for a change are not noticed.

Summary: Persistence Forces Under Conditions of Success

Organizations with a recent history of successful performance experience tremendous persistence forces that act to increase the probability that the organization will engage in a convergence strategy. Figure 3 outlines the persistence forces that are triggered by a past history of successful performance. These persistence forces, however, are not solely the result of a rational analysis of the organization's resources, distinctive competencies, and environmental conditions but rather are driven in part by the psychological and inertial forces that successful performance is likely to elicit. Consequently, organizations that have experienced recent success will be likely to persist with a convergence strategy even in the presence of environmental changes.

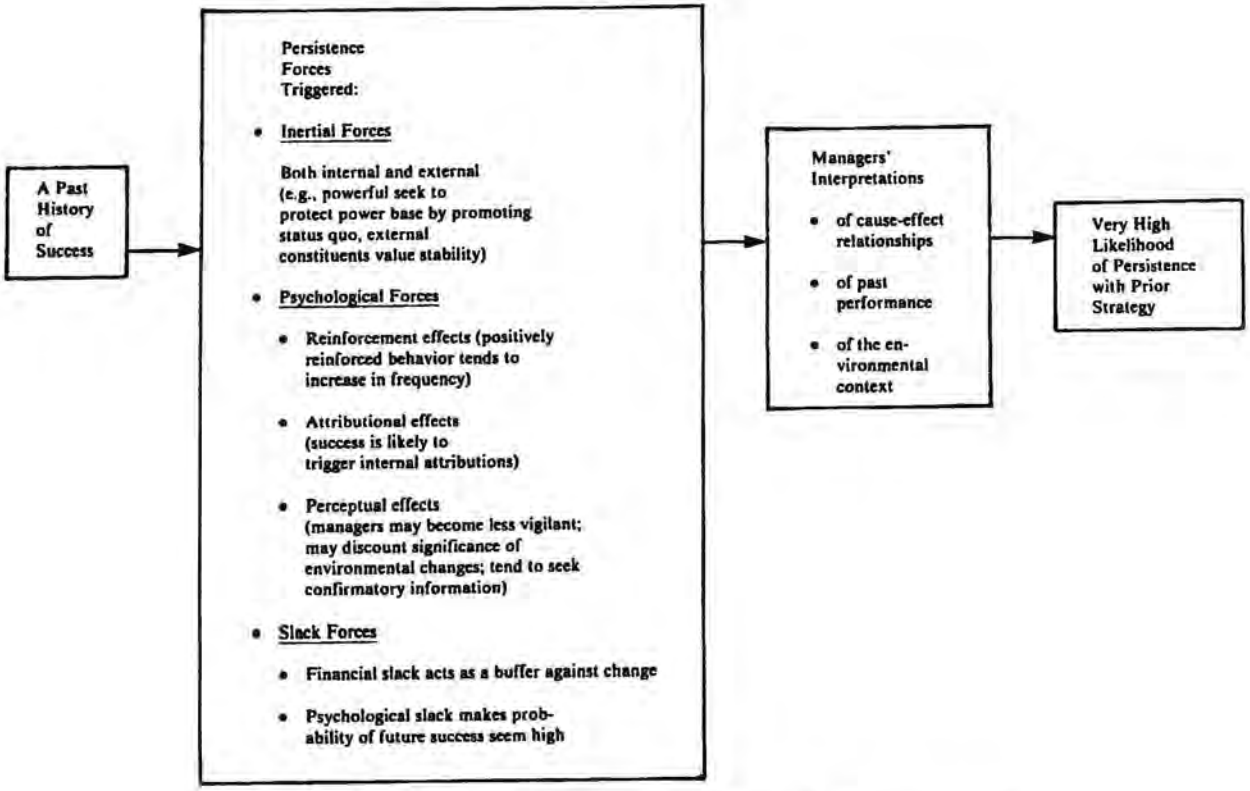

Figure 3. The Effect of Success on Managerial Interpretations and the Likelihood of Persistence

Such a model of persistence behavior can be used to explain why successful organizations often fail to remain successful over time ("Who's excellent now," 1984). Because of these success-induced persistence pressures, managers of successful organizations may be less likely to notice environmental changes and may be less capable of adapting to them quickly. In fact, one might hypothesize that the more successful the organization has been in the recent past, the less quick it will be to adapt to an "environmental jolt" (Meyer, 1982). Meyer's research on hospitals lends support to this argument in that the best-performing hospital adopted a "weather the storm" strategy in the face of the environmental jolt created by a doctor's strike in the San Francisco Bay area. Meyer (1982) notes that the hospital, unlike other hospitals, did not foresee the strike and when the strike occurred, elected to use the slack resources created by its past success to "weather the storm" rather than change. Meyer (1982) also notes that this hospital, unlike the others, suffered monetary losses during the strike.

Interpretations of Unsuccessful Performance

Decisions to persist with a strategy that has failed in the past may seem like an irrational choice and thus, a rare occurrence. Persistence forces, however, are likely to remain strong even after a period of poor performance, although they are likely to be weaker than they are after success for several reasons. First, competency traps tend not to develop when procedures are associated with failure. Second, behavior that is not positively reinforced tends to decrease in frequency, thus increasing the likelihood of change. Third, reductions in financial slack following failure reduce the performance buffer that encourages persistence. Thus, some of the forces toward persistence that exist after the experience of success are, in fact, reduced or eliminated under conditions of failure. The persistence forces that are triggered by poor performance are also somewhat different from those triggered by good performance, although they fall into the same broad categories of inertial forces, psychological forces, and perceptions of slack.

The Effect of Inertial Forces on Managerial Interpretations

Failure typically calls into question current organizational structures and routines. Thus, one would expect that forces toward inertia would be reduced by experiences of failure. The extent to which this is the case depends on the source of inertial pressure. External constituents experience organizational failure differently from managers, and are less subject to the psychological forces that push managers toward persistence. Thus, the inertial pressures that arise from evaluation of the organization by external constituencies are likely to be reduced by failure because failure tends to reduce organizational

legitimacy. The inertia of strategic decisions, structures, power distributions, and control systems that arises from the commitment of managers to the status quo, on the other hand, may not be reduced by failure. The reasons for this can be found primarily in the psychological forces that prevail under failure conditions, which are discussed below. In sum, although failure is likely to trigger external pressures for change, it does not necessarily energize internal forces for change. Over time, however, external constituents may become sufficiently frustrated by the internal inertia that they exercise their power to force change (e.g., boards choosing to replace members of the top management team).

The Effect of Psychological Forces on Managerial Interpretations

Escalation of commitment and threat rigidity. As noted above, failure does not necessarily reduce managerial commitment to previously chosen courses of action and may, in fact, increase it (Staw, 1981; Staw & Ross, 1978). Escalation of commitment is due, in part, to the psychological responses triggered by failure experiences. First, because the admission of responsibility for failure involves high psychological costs (e.g., cognitive dissonance) as well as real "sunk costs," managers may tend to escalate their commitment to a past strategy rather than change strategies in order to avoid confronting these losses. Persistence in the face of failure may be justified with the argument that insufficient resources were allocated to making the strategy work in the first place.

Second, escalation of commitment to a failing course of action may also occur because of common attitudes toward risk. Evidence suggests that when faced with current losses, individuals tend to choose a course of action that risks a much more significant loss but also holds the slim possibility of breaking even or resulting in an overall gain, rather than accept a smaller loss for certain (Kahneman & Tversky, 1979). Individuals, thus, resist accepting losses as "sunk costs" that cannot be recouped (Bazerman, 1986). Consequently, managers may be motivated to persist with their current strategy, despite evidence of poor performance, in the hope that the strategy will eventually be successful.

Third, apart from the fact that failure may arouse feelings of cognitive dissonance, it may also arouse feelings of stress and threat. Staw, Sandelands and Dutton (1981) argue that under conditions of perceived threat, both individuals and organizations tend to resort to their dominant, well-learned responses rather than novel responses, referred to as the threat-rigidity effect. Thus, failure may lead to persistence simply because failure experiences are threatening and stressful. At the extreme, a long series of failures may lead to learned helplessness (Seligman, 1975).

Attributing causes for performance. People tend to make external attributions for failure; locating the cause of the failure in some external force rather than in their own actions. Research suggests that external attributions are common

after periods of poor performance (Salancik & Meindl, 1984; Staw et al., 1983). At the individual level, acknowledging responsibility for failures is painful and creates an aversive state of cognitive dissonance which actors seek to avoid (Festinger, 1957). This desire to avoid dissonance may cause managers to seek excuses or external explanations for their failures, particularly when the failure occurred during their tenure. Alternatively, top-level managers' desire to appear competent may motivate them to make external attributions for poor performance even if they do not truly believe in these external attributions. Thus, they may make external attributions for failures in order to manage impressions (Ford, 1985; Salancik & Meindl, 1984).

Not only do external attributions for failure foster persistence, but they may also prevent managers from learning about the impact of their behavior on organizational outcomes. The conventional wisdom that "nothing teaches like failure" is based on the assumption that individuals' behavior is guided by simple reinforcement models of behavior. If managers perceived that their actions caused the failure, they would learn to change the behaviors that led to failure. However, we have seen that psychological forces tend to produce external attributions for failure, thus preempting these important lessons.

External attributions are most likely when managers feel a need to account for or explain the organization's poor performance and when the failure occurred during their tenure. Conversely, managers who do not feel personally responsible for the organization's poor outcomes may be less likely to make external attributions for them. Thus, any factor that acts to reduce the sense of perceived responsibility for failure is likely to reduce the psychological pressures to persist or escalate commitment under conditions of failure.

Perceiving the environment. A past history of failure may also bias managers' perceptions of environmental contingencies. Although failure heightens the emphasis on external factors believed to have caused the failure, it does not necessarily increase the probability of strategic change. Biased perceptions of the environment created by recent failure experiences may lead simply to more persistence. These interpretive biases can be classified under the general rubric of "wishful thinking." Managers who make external attributions for failure are likely to perceive the external factors that led to failure as bad luck; they may also underestimate the permanence and significance of changes in environmental contingencies (Ford & Baucus, 1987), and may perceive the environment as changing in favorable ways. They may then tend to search for information that confirms their belief that these external causes of their troubles are temporary and ignore information that might tend to disconfirm this belief (Kiesler & Sproull, 1982; Schwenk, 1984). To the extent that managers come to believe that the external contingencies to which they attribute their performance are significant and permanent, their focus on external factors may lead them to change strategies rather than persist.

The Effect of Financial and Psychological Slack on Managerial Interpretations

Although slack accumulates during periods of success, its effects linger during periods of failure. Financial slack in the organization will not disappear immediately during a period of poor performance. Rather, financial slack previously built up in the system will continue to serve as a buffer that the organization can draw upon in order to survive periods of poor performance without making major changes in strategy (Cyert & March, 1963). The existence of such a buffer may increase the tendency for managers to engage in wishful thinking about the permanence and importance of environmental changes. Thus, in the case of recent failure experiences, both slack and the type of thinking it encourages may promote persistence strategies. If failure persists, slack may be exhausted eventually, resulting in a reduction of its influence on strategic persistence. Psychological slack functions in much the same way as financial slack during periods of failure. If success is fairly recent, the lingering overconfidence produced by psychological slack will result in failure being interpreted as temporary bad luck. The belief that success is just around the corner will decrease over time with repeated or catastrophic failures. In summary, the effects of slack are dynamic; while sufficient slack exists to provide a buffer, strategic persistence is likely. As the buffer is depleted, strategic change becomes more likely.

Summary: Persistence Forces Under Conditions of Failure

Although poorly performing organizations are more likely to change strategies or reorient than successful organizations, managers of poorly performing organizations are likely to experience considerable pressures to persist nevertheless. Figure 4 outlines the persistence forces that are triggered by a past history of unsuccessful performance.

In the case of failure-induced persistence, it is apparent that the factors that motivate this persistence stem from psychological and inertial forces that are likely to affect managers after a recent period of poor performance rather than from a rational appraisal of the organization's environment and of its strengths and weaknesses.

Taken to its logical extreme, this interpretive perspective suggests that poorly performing organizations are likely to persist to the point of bankruptcy unless environmental conditions change so as to reward organizational persistence. Although such extreme persistence does occur, sometimes managers can successfully implement turnaround strategies (Hambrick & Schechter, 1980; O'Neill, 1986). This raises the question: Under what conditions can the persistence forces to which managers are subject be mitigated or at least, reduced sufficiently to eliminate the tendency to make persistence errors? This is the focus of the next section of the paper.

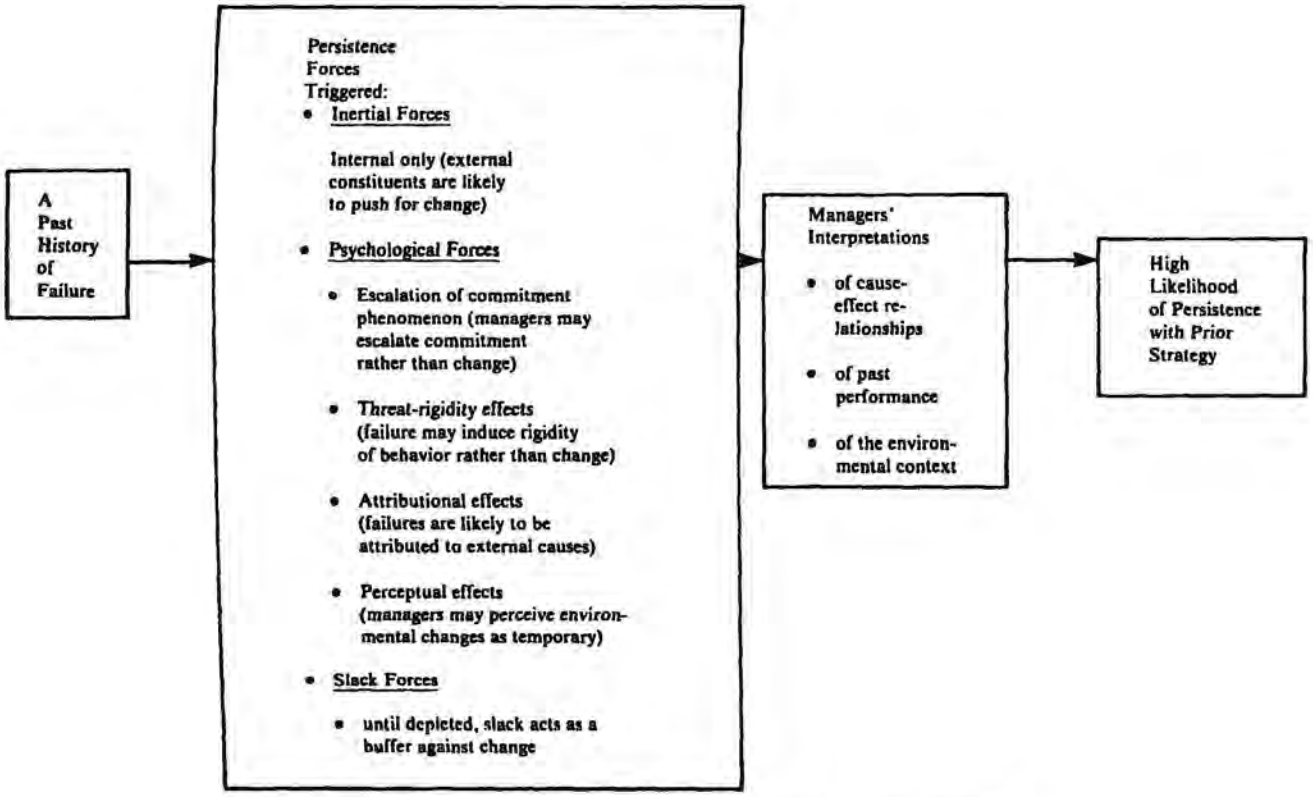

Figure 4. The Effect of Failure on Managerial Interpretations and the Likelihood of Persistence

FACTORS ENHANCING THE CAPACITY TO LEARN

We have alluded to the idea that biases in the managerial thought processes not only tend to produce persistence, but also tend to inhibit managerial learning about cause and effect relationships. We have noted, however, that several organizational and environmental factors may counteract the forces that bias the learning process and foster persistence with past strategies. In this section, we discuss several factors that can reduce the strength of persistence forces by enhancing the organizations' learning capabilities. We group these mediating variables into environmental and organizational factors. These mediators have in common the effect of enriching the managerial learning experience and increasing the likelihood of second-order learning, and thus, strategic change. They do so by providing either equivocal experiences or rich information, or by reducing the psychological forces that foster persistence and inhibit learning.

Environmental Factors Mediating Persistence Pressures

The Nature of the Environmental Context

Common sense would suggest that it is much easier to manage an organization in a stable environment than in a turbulent one. Interestingly, however, a historically stable environmental context may make accurate learning about cause-effect relationships more difficult and increase persistence pressures because the paucity and redundancy of experience in such contexts inhibits second-order learning (Levitt & March, 1988). Managers in stable environments do not have as many opportunities to learn about the role of the environmental context in determining reinforcement probabilities as managers of organizations in more volatile or turbulent contexts. As a result, they are less likely to be vigilant and more likely to expect the environment to remain stable, and to underestimate the significance of any changes that occur. They may devote fewer resources to environmental scanning and may be less likely to notice environmental changes. Thus, the nature of the environmental context acts on persistence forces primarily through its effects on managerial perceptions of the environment.

In contrast, a turbulent environment is likely to mitigate the strength of persistence forces by providing managers with many equivocal experiences and opportunities for learning. Managers whose past experience has been in an environment with constant change will come to expect change, are likely to remain more vigilant, devote more resources to environmental scanning, and consequently may be less likely to underestimate the significance of environmental changes. Just as experience with a technology increases the firm's technical competence, experience with change may increase the firm's competence at responding to change. Managers in turbulent environments have

the opportunity to learn largely because they are more likely to have experienced poor performance as a result of environmental change, and to have learned that change is often necessary in order to maintain good performance.

The degree of perceived environmental uncertainty also influences the strength of persistence forces. Although perceived uncertainty covaries with the actual volatility of the environmental context (Duncan, 1972), there is not necessarily a one-to-one correspondence between the two and so, we discuss the effects of uncertainty separately. Perceived uncertainty about the environment has been found to lead to more active environmental scanning, particularly when uncertainty is coupled with resource dependence (Daft, Sormunen, & Parks, 1988). Organizations that engage in active scanning of their environments (Aguilar, 1967; Daft & Weick, 1984) may be more likely to recognize change and thus, may contemplate and enact strategic reorientations more frequently. Thus, the equivocal experiences resulting from environmental uncertainty provide the impetus for increasing the richness of information available to decision makers.

Organizational Factors Mediating Persistence Pressures

Managerial Decision Making Processes

A top management team's decision-making process is fundamental to organizational learning and thus mediates all of the forces toward persistence. Decision processes that provide equivocal experiences by allowing for the questioning of assumptions and beliefs are more likely to provide the opportunity to discuss and consider strategic alternatives. Such discussion may uncover the potential need or desire to consider a strategic reorientation. Several variables may encourage such discussion in top management teams.

Organizations that use systems such as the Dialectical Inquiry System (Mason & Mitroff, 1981), Devil's advocate approaches (Cosier & Aplin, 1980), or Model II approaches to encourage double-loop learning (Argyris & Schon, 1978) that require managers to question their assumptions and beliefs, may be more likely to surface environmental interpretations that suggest a potential need to consider a strategic reorientation. The process of questioning assumptions and beliefs may also bring both success and failure-triggered traps into managers' consciousness. Critical discussion of cause and effect relationships among managers of a successful organization may, for example, reveal the presence of competency traps, and may suggest that the organization needs to learn new activities as well as exploiting those that they do well already.

The Composition of the Top Management Team

It has been argued that the older and more homogeneous a management team, the stronger the inertial pressures likely to exist within the organization

(Katz, 1982; Tushman & Romanelli, 1985; Wagner, Pfeffer, & O'Reilly, 1984). Thus, composing a top management team that is heterogeneous with respect to backgrounds, perspectives, and ages of team members may mitigate persistence pressures stemming from inertia. Such diversity can provide equivocal experiences, resulting in disagreement and extensive discussion of strategic alternatives. To the extent that this disagreement revolves around beliefs about the environment, uncertainty about the environment may increase. As discussed earlier, uncertainty is likely to increase environmental scanning activities and thus, may increase the probability of strategic change. To the extent that this disagreement revolves around strategic options, there is likely to be more debate about the likely efficacy of each of the options surfaced. Tushman and Romanelli (1985) similarly suggest that the greater the level of political and conflictual behavior within the organization, the weaker will be the persistence pressures.

Top Management Team Change

Although the composition of the top management team and its decision making process are powerful mediators of persistence forces, some experimental evidence suggests that groups as well as individuals are subject to various biases and heuristics (Argote, Seabright, & Dyer, 1986; Bateman & Zeithaml, 1989). Thus, a management team that has shared similar experiences, even though they have different backgrounds and enlist structured decision-making techniques, may still be subject to some of the biases that influence these interpretations. This is why change in the top management team's composition becomes so important as a force for counteracting persistence; new individuals are introduced who have not shared the organization's past success or failure. In fact, empirical studies suggest that successful strategic reorientations in the absence of management change may be rare (Tushman, Virany, & Romanelli, 1989).

One reason why top management team change may be such an important factor in mitigating organizational persistence pressures is that newly appointed managers, particularly outsiders, are not subject to the psychological forces that create persistence pressures for managers with tenure on the team. For instance, tenured managers of unsuccessful organizations have a built-in resistance to change because failure is likely to trigger dissonance, external attributions, a desire to avoid sunk costs, and potentially a threat-rigidity response. These psychological responses to performance feedback, whether of success or failure, are likely to be fairly uniform across managers currently in the organization. New managers, however, do not feel responsible for the organizations' past performance because they were not the ones to decide on the past strategy; thus a large part of the psychological incentive to engage in internal attributions for success or external attributions for failure is

removed. Further, these new managers may be motivated to manage impressions and prove their efficacy by making major changes in the organization's strategy and systems.

Additionally, changing key players in the organization reduces organizational inertia and commitment to the status quo. For example, Katz (1982) argues that innovative and adaptive behaviors are less likely to occur as the same individuals work together for long periods of time. Such groups become increasingly rigid and committed to established practices, increasingly insulated from and selectively exposed to critical information, and increasingly rely on their own experience and expertise, with narrowing cognitive abilities and increased cognitive similarity. Weick (1979) has noted a similar effect; as individuals work together, their cognitive maps converge and their behaviors become more homogeneous. Similarly, Nystrom and Starbuck (1984) have suggested that introducing a new top management team may be an effective way for ensuring that poorly performing organizations engage in the "unlearning" processes that allow strategic reorientations to occur.

The Design of Organizational Reward Systems

Reward systems can reduce strategic persistence through their potential effect on psychological forces that encourage persistence. Strategic change can be made more probable even in the absence of top management team change if the organizational incentive system emphasizes long-term rather than short-term performance, allows for failure, and encourages learning from mistakes. Because failure experiences enhance learning, reward systems that allow individuals to fail on occasion will increase second-order learning and the likelihood of strategic change. Further, if managers do not fear punishment for small failures, then their felt need to justify failures by rationalizing them would be reduced. To the extent that self-justification interferes with learning, these reward systems would facilitate organizational learning. Peters and Waterman (1982) note that companies that achieved consistently excellent results tended to have reward systems that encouraged innovation and experimentation.

Organizational Emphasis on Environmental Scanning

One of the major causes of persistence under conditions of both success and failure is the tendency to underestimate the significance of environmental changes. Organizations that devote proportionately more resources to environmental scanning may be able to overcome this tendency by increasing the richness of information available. Organizations that maintain this resource commitment even though they have been successful are more likely to spot critical changes in environmental contingencies. Thus, these organizations would be at a major advantage over successful organizations

that did not maintain this resource commitment should there be a sudden environmental jolt.

In addition to the amount of resources devoted to environmental scanning, the organization's information processing structure may be important in determining the probability that environmental changes are noticed and seen as significant (Milliken, Dutton, & Beyer, 1990; Thomas & McDaniel, 1990). In order for environmental changes to be noticed and interpreted as significant by an organization's top-level managers, there must be clear channels for communicating information about environmental trends to the top of the organization. Because people perceive environmental threats as negative and associated with losses rather than gains (Jackson & Dutton, 1988), they may be hesitant to communicate information about potential environmental threats up the organizational hierarchy unless there are clear channels for doing so and the absence of disincentives for communicating negative information.

SUMMARY

In this paper we have sought to illustrate a number of forces that may tend to push managers toward persisting with past strategies after both success and failure experiences. These forces include inertia, psychological responses to success and failure, and slack. Inertial forces that originate both inside and outside the firm push managers toward persistence under conditions of success. Under conditions of failure, internally generated inertia continues to push toward persistence, but externally generated forces, such as legitimation, tend to push for change. The psychological forces triggered by success include competency traps, the internal attribution bias, and reinforcement effects, while those triggered by failure include the external attribution tendency, the desire to avoid sunk costs coupled with the tendency towards risk seeking behavior, and the threat rigidity effect. All of these psychological forces push for persistence. Under conditions of success, managers tend to become less vigilant, and tend to perceive the environment as stable, or to believe that changes are likely to be temporary or not significant. The tendency to react defensively in the face of failure may also bias managers' perception of the environment in such a way that persistence occurs. Managers may believe that persistence will pay off if they are patient enough to wait for the environment to become more favorable. This tendency is exacerbated by the presence of financial and psychological slack.

Although persistence tends to be a dominant response under conditions of both success and failure, the reduction of several persistence forces under conditions of failure makes strategic change more likely under conditions of failure than under conditions of success. In particular, the persistence pressures created by competency traps, reinforcement effects, and the availability of slack

	Persistence	Change
Success	1	4
Failure	2	3

Figure 5. Rank Order of Strategic Choice Consequences of Past Performance

are either reduced or eliminated after a period of unsuccessful performance. Although the prevalence of psychological forces tends to make persistence a common response than change even after failure, failure experiences are likely to produce a higher rate of strategic change than success experiences. Referring to Figure 5, the numbers of the cells correspond to the rank order of the likelihood of each performance-strategy relationship.

We have also noted that there are several environmental and organizational factors that may affect the strength of persistence pressures within an organization. We have argued that persistence pressures are likely to have a particularly significant influence on decision making when the managers who are formulating current strategy are the same individuals who were the architects of the past strategy. However, changing the top management is not the only way of mitigating the biasing effect of psychological forces. We predicted that organizations in turbulent environments would be less likely to succumb to decreased vigilance effects because they had gained competence in learning how to negotiate a changing environment. That is, they had gained competence in second-order learning (Lant & Mezias, 1988) and had learned how to learn about new situations (Bateson, 1972). We have also suggested that diversity in the top management team's composition and the use of structured decision making processes can enhance the team's ability to learn. For instance, demographic and experiential variety on the top management team may increase the variety of perspectives considered in strategic decision making (Katz, 1982; Nystrom & Starbuck, 1984). Structured conflict methods like Dialectical Inquiry (Mason & Mitroff, 1981), Devil's Advocate procedures (Cosier & Aplin, 1980), and double-loop learning (Argyris & Schon, 1978) may be effective for developing second-order learning capability in organizations in general. We also discussed the role that the organizational reward system and scanning activity can play in breaking down persistence pressures in organizations.

DISCUSSION

In this paper we have tried to live in a world that resembles the world in which practicing managers live. In such a world, cause-effect relationships are rarely obvious, learning is extremely difficult even under the best of circumstances, and various forces within organizations may cause strategic decisions to be made in less-than-rational ways. This world is very different from the one we see when using retrospective methodologies such as those used to construct cases for classroom discussion. Such methodologies make cause-effect relationships appear obvious (Fischoff, 1975), learning seem easy, and psychological forces seem important only as mechanisms of irrationality that produce failure.

We believe that by including psychological and inertial processes in models of strategic decision making we will improve our ability to predict the likely strategic choices of managers. Further, we suggest that managers may benefit from recognizing that they may ignore environmental changes, may be motivated to explain performance outcomes in ways that protect themselves, and may persist with outdated strategies, or even undermine the organizational properties that have produced success. Managers who understand decision-making processes and the potential role of psychological and inertial forces may be able to make more informed choices than managers who are unaware of these influences. Further, an understanding of the forces that impact strategic decision making can help managers predict more accurately the behavior of competing organizations.

The interpretive model we have outlined in this paper highlights the critical need for more empirical research on managers' interpretive processes. The general research question posed by this paper is: Does a model that includes interpretive forces explain more variance in managers' strategic choices than a model that only includes objective data on environmental conditions, the organization's past performance, and resource availability? In other words, can we better understand managers' strategic choices by understanding the forces that influence the interpretive process and the learning of cause and effect relationships?

More specifically, we see several potentially fruitful areas for future research that stem from the ideas we have proposed in this paper. For example, future research could explore whether, in fact, periods of past success and failure activate the various psychological and cognitive processes we have proposed. For example, are managers of organizations that have a recent history of success more likely to make internal attributions for their performance than managers of moderately successful or poorly performing organizations? Are successful organizations more likely to persist when internal attributions are made than when managers have a more complex pattern of attributions? Do managers, in fact, become less vigilant to their environment after a period of

successful performance? If so, then one would expect that successful organizations would devote proportionately fewer resources to environmental scanning than moderately successful organizations. Future research could also explore the effects of the environmental and organizational factors that we have suggested mediate persistence pressures, particularly their impact on managers' interpretive processes.

In conclusion, we argue that if we are seeking to understand and predict managers' actual behavior, we need to recognize the potential impact that psychological and inertial forces are likely to have on strategic decision-making processes. We believe that it is only through understanding these processes that we can begin to predict managers' strategic choices accurately. Models that fail to recognize that managers often do not and cannot interpret information in keeping with the assumptions of normatively rational models may have limited validity for predicting the actual behavior of managers.

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