© Academy of Management Review
2011, Vol. 36, No. 3, 544–566.

THE PARADOX OF STRETCH GOALS: ORGANIZATIONS IN PURSUIT OF THE SEEMINGLY IMPOSSIBLE

SIM B. SITKIN
Duke University

KELLY E. SEE
New York University

C. CHET MILLER
University of Houston

MICHAEL W. LAWLESS
University of Maryland

ANDREW M. CARTON
The Pennsylvania State University

We investigate the organizational pursuit of seemingly impossible goals—commonly known as stretch goals. Building from our analysis of the mechanisms through which stretch goals could influence organizational learning and performance, we offer a contingency framework evaluating which organizations are positioned to benefit from such extreme goals and which are most likely to pursue them. We conclude that stretch goals are, paradoxically, most seductive for organizations that can least afford the risks associated with them.

As highlighted by a number of organizational theorists, organizations must balance short-term performance concerns with long-term learning objectives (e.g., Levinthal & March, 1993; Sutcliffe, Sitkin, & Browning, 2000). An organization can ensure continued survival only by performing well in the near term while positioning itself for strong performance in an uncertain future. Although language and concepts from a number of theoretical domains can be used to characterize the balancing of attention between the short term and the long term, the organizational learning literature provides the most directly relevant conceptualization. From this perspective, organizations must invest in activities that "exploit" their known current capabilities (i.e., refinement, implementation, and execution) while also investing in activities that "explore" new, unknown possibilities (i.e., experimentation, innovation, playfulness; e.g., Kang, Morris, & Snell, 2007; Levinthal & March, 1993; March, 1991; McGrath, 2001; Sitkin, Sutcliffe, & Schroeder, 1994).

Although exploration is critical for long-term learning, change, and survival, organizations often have difficulty searching outside their current routines and processes (Adler & Obstfeld, 2007; Baumard & Starbuck, 2005). Returns to investments that exploit existing capabilities are immediate, whereas returns to exploration and learning are distant and uncertain (March, 1991). Instead of facing uncertainty, organizational actors often fail to look into the distant future, choosing to "solve pressing problems rather than develop long-run strategies" (Cyert & March, 1963: 119). In essence, existing routines can become sources of inertia (Edmondson, Bohmer, & Pisano, 2001; Leonard-Barton, 1992; Levitt & March, 1988).

Organizational theorists have proposed a number of approaches for encouraging exploration and discontinuous advances in learning (for

For their helpful comments on previous versions of this manuscript, we thank Bettina Buechel, Rich Burton, Laura Cardinal, Christina Fang, John Joseph, Theresa Lant, Rick Larrick, Ed Locke, Frances Milliken, Elizabeth Morrison, Gerardo Okhuysen, Randall Peterson, and three anonymous reviewers. We also thank participants in the Harvard–MIT Organizational Economics Seminar Series and the 2008 Academy of Management annual meeting.

reviews see Greve, 2003; Huber, 1991; Levitt & March, 1988; Sitkin, Sutcliffe, & Weick, 1998). March (1991), for example, highlighted the value of turnover that creates new perspectives. Christensen (1997) argued for forming new operating units that are not encumbered by existing routines and capabilities. Siggelkow and Levinthal (2003) considered the role of decentralization. Levinthal and March (1993) suggested a number of diverse tactics for encouraging change, including leveraging employees who have failed to thrive within the existing order or explicitly manipulating risk preferences in the organization. These ideas for promoting exploration have been useful but also have nontrivial drawbacks, such as the substantial structural changes required to implement new operating units or the loss of still valuable tacit knowledge through turnover. Moreover, these and other ideas for promoting exploration often have been built on a foundation of general or abstract theoretical reasoning, leaving the underlying mechanisms underspecified. All of these issues, as well as the inherent complexity of the topic, have helped to keep exploration at the forefront of debates and study within the organizational research community (for recent commentaries see Fang & Levinthal, 2009; Kim & Rhee, 2009; Raisch & Birkinshaw, 2008).

Both theory and intuition suggest that methods for promoting exploration and change should facilitate attention, energy, and action in the domain of alternative routines and capabilities. Without attention being channeled to alternative futures, new paths are not likely to be considered (e.g., D'Aveni & MacMillan, 1990; Drazin & Sandelands, 1992; Starbuck, 1983). Without energy and enthusiasm for major change, challenges to the status quo are unlikely (e.g., Beer, Eisenstat, & Spector, 1990). Without coordinated action, trial-and-error experimentation is less likely to yield meaningful results (e.g., Huber, 1991; Sitkin et al., 1994). The attention-based view of the firm (e.g., Ocasio, 1997), research into organizational change and adaptation (e.g., Barnett & Pratt, 2000; Kotter, 2008), and studies of organizational learning and design (e.g., Argyris, 1985) directly highlight the importance of these cognitive, affective, and behavioral mechanisms, respectively.

One method for exploration that might instigate the mechanisms discussed above is the use of seemingly impossible organizational goals—commonly referred to as *stretch goals*. Because they are extreme, stretch goals have been argued to serve as jolting events that disrupt complacency and promote new ways of thinking and acting (e.g., Hamel & Prahalad, 1993; Rousseau, 1997). In effect, the imposition of such extreme goals can be similar to an autogenic (i.e., intentional, internally generated) crisis meant to spur change (e.g., Barnett & Pratt, 2000; D'Aveni & MacMillan, 1990). By forcing a substantial elevation in collective aspirations, stretch goals can shift attention to possible new futures and perhaps spark increased energy in the organization. They thus can prompt exploratory learning through experimentation, innovation, broad search, or playfulness as organizational actors seek new or varied approaches to reach the target. Stretch goals also can enhance tangible performance outcomes as gaps between aspiration and current performance elicit and guide effort and persistence (Cyert & March, 1963).

Reflecting on both performance and exploration, Rousseau put it this way: "[Stretch goals] motivate high performance by mandating creativity and assumption-breaking thinking" (1997: 528). Winter said the following in the context of stretch goals and organizations developing new capabilities: "It is not a secret that high aspirations can often contribute to high achievement" (2000: 990). These sentiments are echoed in the business press. Steve Kerr, former Chief Learning Officer at General Electric and Goldman Sachs, illustrated the popular motive for, and the method of, stretch goals:

> If done right, a stretch target . . . gets your people to perform in ways they never imagined possible. It's a goal that, by definition, you don't know how to reach. You might, for instance, ask people to cut costs by half or reduce product-development time from years to months . . . [in order to] find dramatically new ways of doing business (Sherman, 1995: 231).

Pursuing goals that are seemingly impossible might stimulate exploratory learning specifically because radically new approaches are required. Southwest Airlines and Toyota provide examples. After being forced to sell part of its fleet early in its history, Southwest Airlines set a goal of ten-minute turnaround times at airport gates in an attempt to use its few remaining planes more efficiently. Although officials with the U.S. Federal Aviation Administration, Boeing, and competing airlines believed the goal to

be unachievable (as did many Southwest employees), the seemingly impossible ten-minute turnarounds were ultimately accomplished by employing an approach (drawn from race car pit crews) that was radically new and unfamiliar to the airline industry (Freiberg & Freiberg, 1996). Likewise, some have argued that at Toyota the seemingly impossible goal of 100 percent near-term improvement in fuel efficiency (relative to prevailing standards) played a key role in the development of hybrid vehicle technology (Takeuchi, Osono, & Shimizu, 2008). Beyond these two anecdotal illustrations, researchers have suggested that the use of stretch goals remains fairly common in practice (for examples see Collins & Porras, 1994; Takeuchi et al., 2008; Thompson, Hochwarter, & Mathys, 1997).

Goals and aspirations in general have long played an important role in organization theory (e.g., Cyert & March, 1963), and stretch goals in particular have generated interest among the business press and the various scholars noted earlier. Yet pushing the boundaries of goal attainability raises organizational implications that require deeper analysis. In this article we integrate the literature on organizational goals with research on learning to examine the role of seemingly impossible goals in facilitating exploratory learning while promoting, or at least not sacrificing, performance. Specifically, we consider a number of fundamental questions at the organizational level of analysis: What are the mechanisms through which this class of goals might promote exploratory learning and organizational performance? What are the risks to such extreme goals that could negatively affect the organization's capacity to perform and to learn? Do stretch goals increase learning or performance in some circumstances but decrease them in others? Do organizations that could benefit the most from stretch goals exhibit the greatest propensity to pursue them?

In gaining an understanding of why organizations would use seemingly impossible goals and how their use influences exploratory learning and performance, we address an important theoretical gap at the intersection of research on organizational goals and organizational learning processes. In particular, we contribute new insights on how the use of extreme goals might relate to exploring new and innovative practices (e.g., Levinthal & March, 1993; March, 1991; Rahmandad, 2008; Uotila, Maula, Keil, & Zahra, 2009), organizational risk taking (e.g., Singh, 1986; Sitkin & Pablo, 1992), learning under ambiguous feedback (March & Olsen, 1976; Weick, 1979, 1995), and dynamic capability development (e.g., Agarwal & Helfat, 2009; Capron & Mitchell, 2009; Winter, 2000). Our work reveals ways that the extremity of stretch goals might challenge core assumptions about the relationships among aspirations, learning, and firm performance (e.g., Ethiraj & Levinthal, 2009; Cyert & March, 1963; Greve, 1998; Lant, 1992; Lant & Shapira, 2008; Mezias, 1988). We suggest that as goals become extreme, there are complex yet predictable organizational effects that are likely to be negative except under a limited set of specifiable circumstances. Moreover, we contribute to scholarly thinking on organizational change and adaptation by examining why organizations would be drawn to using stretch goals as intentional, internally generated jolts or crises (e.g., Barnett & Pratt, 2000; D'Aveni & MacMillan, 1990), as well as the conditions under which such jolts might successfully or unsuccessfully trigger discontinuous advances in learning (e.g., Beer et al, 1990; Meyer, 1982; Romanelli & Tushman, 1994). Our theoretical analysis also advances the understanding of the little-known effects of unattainable goals (e.g., Garland, 1982, 1983; Locke, 1982, 2004; Rousseau, 1997) by examining the underlying mechanisms through which such goals can lead to collective outcomes.

In the following section we specify our conceptual space by providing a definition of stretch goals. We then examine the underlying cognitive, affective, and behavioral mechanisms through which stretch goals might positively or negatively influence organizational learning and performance outcomes. Building directly on this discussion, we formulate propositions around recent performance and slack resources as the key contingency factors determining when stretch goals will facilitate versus disrupt learning and performance. We follow with propositions concerning how these same contingency factors also determine the likelihood that an organization will be drawn to using stretch goals. As part of our closing discussion, we reconsider reported stretch goal success stories in light of our analysis and highlight important contexts for future empirical inquiry.

STRETCH GOALS DEFINED

Consistent with an early stage of conceptual development, stretch goals have not been precisely defined, and the term has not been used consistently within or across previous commentaries. Even so, earlier use of the term does provide guidance in formulating a definition. Drawing on prior descriptions (e.g., Collins & Porras, 1994; Hamel & Prahalad, 1993; Rousseau, 1997; Sherman, 1995), we define a stretch goal as *an organizational goal with an objective probability of attainment that may be unknown but is seemingly impossible given current capabilities (i.e., current practices, skills, and knowledge).*

Because we define stretch goals in terms of an unknown yet seemingly impossible (i.e., 0 percent) probability of attainment, we depart markedly from the focus in organizational behavior research on challenging goals, which have a nonzero (typically, 10 percent) probability of attainment (Locke & Latham, 1990). We do not depart, however, from the usual focus on outcome-oriented performance goals as opposed to process-oriented learning goals (e.g., Seijts & Latham, 2005; Winters & Latham, 1996). Setting a performance goal entails specifying a tangible outcome to be reached (usually a quantifiable level of performance), such as a specific reduction in turnaround times at airport gates, a percentage increase in fuel efficiency of vehicles, a reduction in cycle time in a production process, or an increase in sales from new products. Once that performance goal is set, the entity charged with pursuing it must devise strategies to reach the targeted outcome. Although learning can result as a by-product of dealing with the demands of meeting a performance goal, it is important to emphasize that stretch goals are still articulated by the organization in terms of a specific level of performance or output. In contrast, setting a learning goal that does not make explicit a specific outcome to be reached (but, rather, articulates the acquisition of procedural knowledge as the end in itself) would not qualify as a stretch goal under our definition.

Our characterization of stretch goals highlights that they differ from ordinary difficult goals in two important respects: (1) *extreme difficulty*—an extremely high level of difficulty that renders the goal seemingly impossible given current situational characteristics and resources—and (2) *extreme novelty*—there are no known paths for achieving the goal given current capabilities (i.e., current practices, skills, and knowledge). Although these dimensions imply each other, extreme difficulty and novelty stress different aspects of the stretch goal construct (the specified performance outcome and knowledge of the means to reach it, respectively) and also directly relate to the two different core outcomes of interest in this article (organizational performance and organizational learning, respectively). Thus, below we elaborate on the dimensions separately in order to facilitate systematic theorizing about distinct stretch goal effects.

Extreme Difficulty

Stretch goals involve extreme or radical expectations. Even if the stretch goal involves enhancing a process already in place (e.g., the elapsed time between an order and delivery of a product to the customer), the desired process improvement extends beyond what is possible with current capabilities. Returning to the Southwest Airlines example, the goal of a ten-minute turnaround certainly involved a familiar task (efficient turnarounds at airports), but the target was dramatically beyond the company's then-current performance limits, as well as the industry average and range of industry practices. Regardless of the method Southwest Airlines deployed to try to reach the stretch target, attainment would at best be extraordinarily difficult and was perceived to be impossible.

We note that a goal need not be universally (or eternally) impossible in order to qualify as a "stretch" for an organization in a given context. Although it is likely that seemingly impossible goals for one organization are also seemingly impossible for most other organizations in the industry at the time, there could be exceptions. Overall, the determination of extreme difficulty is context specific.

Extreme Novelty

A second aspect of stretch goals is the lack of a discernible path to attainment. When an organization lacks the skills, knowledge, or practices to attain a stretch goal and does not have knowledge of any feasible approaches, it is effectively forced to search outside of its normal routines and knowledge to see if any ways to achieve the

goal exist or can be created. At issue are the particular circumstances of the organization charged with pursuing the goal. To continue with the Southwest Airlines illustration, the goal of a ten-minute turnaround could only be achieved by learning to employ a radically new approach. There were no guiding templates to use within the organization or even within the airline industry. In other words, the path to achievement was unimaginable at the time the goal was set, and, thus, novel means were required to achieve the goal.

STRETCH GOALS AS FACILITATORS AND DISRUPTORS OF ORGANIZATIONAL LEARNING AND PERFORMANCE

There is as yet no explicit theory of the potential effects of seemingly impossible goals on exploratory learning and organizational performance. Indeed, macrolevel goals are often invoked in the organizational literature, but their unique effects have rarely been examined, and unattainable goals remain outside nearly all of the available scholarly work. Much of the published work focused directly on organizational stretch goals has been restricted to commentaries or applied case studies (Collins & Porras, 1994, 1996; Golovin, 1997; Hamel & Prahalad, 1993; Hughes, 2001; Kerr & Landauer, 2004; Rousseau, 1997; Sherman, 1995; Takeuchi et al., 2008; Thompson et al., 1997). With few exceptions (e.g., Hughes, 2001; Kerr & Landauer, 2004; Sherman, 1995), these authors have focused solely on the presumed benefits of seemingly impossible goals, and their work has remained general, rarely proposing specific causal mechanisms.

Notwithstanding these limitations, we have been able to draw on work in organizational theory and cognition to analyze how stretch goal usage can influence learning and performance outcomes through a variety of specific mechanisms that we sort as cognitive, affective, or behavioral (as summarized in Figure 1). Our analysis surfaces both potential facilitative and disruptive stretch goal effects. We then propose a set of contingency factors that determine whether stretch goals will have positive or negative effects on learning and performance.

In line with our central purpose and with prior work, we conceptualize learning as exploration that yields meaningful insights regarding new practices and capabilities (e.g., March, 1991). We conceptualize performance in terms of an organization's tangible outcomes along such dimensions as productivity, product or service quality, profitability, growth, and market share (e.g., see Hitt, 1988, and Quinn & Rohrbaugh, 1983).

Facilitative Effects of Stretch Goals on Exploratory Learning and Performance

Facilitative effects via cognition. Attention is a well-recognized mechanism of influence on organizational learning and performance outcomes (Cyert & March, 1963; Ocasio, 1997; Sutcliffe, 1994). Because stretch goals involve extreme redefinitions of what an organization is capable of being or achieving, they can capture, shift, and refocus attention. According to Rousseau, "Where performance expectations are elevated well beyond the limits of past experience" and "where previously successful frameworks are questioned, revised, or discarded, prior experience is often a poor guide for stretch-goal achievement . . . [and this] shifts the performers' attention away from old routines and assumptions toward novel and creative approaches" (1997: 529). Stretch goals present an information-processing challenge (Galbraith, 1973) because the organization needs to find new sources and types of information and also new ways to process that information. A positive reaction to this challenge would be for the organization to become heedful (Weick, 1995; Weick, Sutcliffe, & Obstfeld, 2005) or vigilant (Janis & Mann, 1977) in proactively scanning and assessing the situation. The organization could thus become more open to new information from a variety of sources (Huber, 1991; O'Reilly, 1982; Sutcliffe, 1994) and question the validity of old assumptions, old information, and old frameworks (Meyer, 1982; Rousseau, 1997). These conditions can facilitate learning processes.

Because stretch goals move an organization into uncharted waters, they naturally require flexible thinking about revisable alternative strategies for goal attainment (March, 1991; March & Olsen, 1976). Thus, seemingly impossible goals can elicit a more open, reflective, and opportunity-oriented focus that is beneficial for performance (Sitkin, 1992). By allowing the organization to more freely tap previously underutilized sources of information and insight, the jolt of stretch goals can cause an organization to more avidly attend to and consider novel paths

FIGURE 1
Mechanisms Through Which Stretch Goals Can Influence Organizational Learning and Performance

	Facilitation	Disruption
Learning	**Cognitive** • Vigilance (heedfulness/mindfulness) • Systematic processing of new information • Openness **Affective** • Enthusiasm, energy • Optimism • Sense of urgency • Curiosity, playfulness **Behavioral** • Trial-and-error cycles • Broad search for new sources and discontinuous advances	**Cognitive** • Hypervigilance • Inability to process new information **Affective** • Fear • Helplessness • Aversion to change • Defensiveness **Behavioral** • Chaotic change • Insufficient familiarity for interpreting feedback
Performance	**Cognitive** • Focus on internal/controllable factors • Opportunity interpretations • Attention on usable new information sources and analyses **Affective** • Initiative to improve • High resilience to negative feedback **Behavioral** • Effort and persistence • Effective strategy selection	**Cognitive** • Focus on external/uncontrollable factors • Threat interpretations • Attention on quick fixes **Affective** • Low commitment to goal • Low resilience to negative feedback **Behavioral** • Threat rigidity • Impaired coordination • Resource diversion resulting in loss of beneficial routines

for pursuing the stretch target (March, 1991). As part of this response, capabilities could be carefully reevaluated for their potential to be recombined in novel ways (e.g., Henderson & Clark, 1990), which would focus attention productively on controllable internal resources and would have positive consequences for performance (Beer et al., 1990; Lant & Shapira, 2008; Levinthal & March, 1981).

Facilitative effects via affect. Seemingly impossible goals can facilitate organizational learning and performance by positively influencing the collective emotion and initiative infused into the organization (Adler & Obstfeld, 2007). This is not to suggest that organizations feel emotions but, rather, to recognize that significant opportunities or threats can have a collective impact that goes beyond individual members' affective responses through contagion processes (Barsade, 2002; Barsade & Gibson, 2007; Bartel & Saavedra, 2000).

Because stretch goals involve such high levels of ambition directed toward novel and unfamiliar opportunities, they can generate energy and greater initiative to learn by evoking a range of positive collective reactions, such as optimism, urgency, enthusiasm, curiosity, and playfulness (March, 1976, 1991). When U.S. President John Kennedy announced in 1961 the goal of landing a man on the moon within a decade,

he introduced a target that excited those he led, even though at the time they had no idea how to achieve the goal, or even if its achievement was possible. More generally, stretch goals can stimulate exploration by highlighting a potentially better and more exciting future (cf. Shamir, House, & Arthur, 1993). By creating a sense of urgency to take on new challenges and to move toward new understandings, stretch goals can impose a "crisis" that stimulates the initiative within or across the organization to undertake experimentation and learning (Barnett & Pratt, 2000; Baumard & Starbuck, 2005; D'Aveni & MacMillan, 1990; Kim, 1998). In other words, the coupling of positive affective drivers (e.g., enthusiasm, energy) with modest stress-related drivers (e.g., urgency) can provide the spark and collective initiative to explore and learn (Argyris & Schön, 1978; Kotter, 2008).

The extreme difficulty of attaining stretch goals should also elevate aspirations (Rousseau, 1997), which is critical for ensuring that organizations strive to increase performance. Organizational theory suggests that aspirations well above existing performance levels create a problem to be solved and increase the initiative and desire to find a solution (Cyert & March, 1963; Greve, 1998; Lant, 1992; Levinthal & March, 1981). In Greve's work (1998), for example, aspirations well above existing performance led to enhanced motivation to improve performance. Strategic planning research also suggests that plans involving goals positively affect the desire to enhance performance, because strategic goal setting gives direction to the firm and promotes adaptive thinking (e.g., Miller & Cardinal, 1994). The literature on charismatic leadership, visionary leadership, and transformational leadership further suggests that the establishment of targets beyond current capabilities builds collective enthusiasm and resilience (Bass & Riggio, 2005; Dvir, Eden, Avolio, & Shamir, 2002; Nanus, 1992; Shamir et al., 1993).

Facilitative effects via behavior. Since there is no known path to achieving a stretch goal, putting such a goal in place may generate actions directed toward exploring and learning new practices. When compared with other conditions, the extreme demands of stretch goals could stimulate broader and more active search for ideas and solutions (e.g., Baum & Dahlin, 2007; Fang & Levinthal, 2009; Mezias, 1988). Stretch goals could also propel the search for more radical, discontinuous advances (Cyert & March, 1963; Raisch & Birkinshaw, 2008), involving actions such as making contacts with unfamiliar sources of ideas, imitating innovative techniques (e.g., Sitkin et al., 1994), or undertaking trial-and-error learning (see Ingram & Baum, 1997, and Levitt & March, 1988). Moreover, by loosening old restraints and providing focus and energy, stretch goals may allow for trial-and-error learning to be undertaken with faster cycle times (Argote, 1999; Argyris, 1985; March, 1991). In effect, stretch goals can prompt search and experimentation behaviors traditionally associated with learning.

Stretch goals can also instigate actions that have positive effects on performance. Once the organization has identified and focused on a stretch target, prior research suggests that its use of specific and measurable (as opposed to vague) goals can lead to increases in organizational performance outcomes via greater collective effort, persistence, and the development of coherent action strategies for attaining the target (e.g., Chesney & Locke, 1991; Cyert & March, 1963; Smith, Locke, & Barry, 1990). For example, Chesney and Locke (1991) found that specifically articulated goals influenced the development of business strategies that increased simulated firm performance in an experiential strategic management exercise. Moreover, research on top management teams has connected upper-echelon agreement on the goals of the firm to financial performance (e.g., Colbert, Kristof-Brown, Bradley, & Barrick, 2008; Dess, 1987). Moving from the use of attainable goals to the case of stretch goals, to the extent that top management agreement on a stretch goal signals a greater sense of specificity and unified purpose, more effective pathways and strategies for approaching the goal could lead to higher performance. Essentially, when a stretch goal is articulated as achieving a specific outcome, parallel or independent strategies can be more easily developed and coordinated as the beacon-like stretch target directs and channels action toward a singular end point.

Disruptive Effects of Stretch Goals on Exploratory Learning and Performance

Disruptive effects via cognition. In contrast to the positive dynamics of vigilance or mindfulness discussed above (Janis & Mann, 1977; Weick, 1995), the jolt of stretch goals could conceivably elicit negative attentional re-

sponses that compromise information processing and the capacity to learn. In the face of a seemingly impossible problem that is not well understood and for which there are no discrete steps that constitute credible paths toward solution, the organization may respond to the overwhelming situation with hypervigilance (Janis & Mann, 1977). With such a response, the organization's information processing becomes disorganized, impulsive, and less systematic in the consideration of alternatives. Thus, instead of presenting a stimulating intellectual challenge for information processing, stretch goals could constitute an information processing "bridge too far," in that the organization simply lacks the capacity to match the complexity and demands of its situation or to incorporate new approaches or inputs that could lead to learning (Weick, 1979).

The lack of obvious capabilities to respond to the demands of stretch goals can also shift attention to potential quick fixes from outside (Beer et al., 1990), even though the organization may not have the absorptive capacity to import these approaches (Cohen & Levinthal, 1990; D'Aveni & MacMillan, 1990). Attending to outside ideas also diverts attention from a more productive focus on internal resources and ideas for change (Beer et al., 1990; Lant & Shapira, 2008). While shifting some attention externally is generally positive for exploration, the extreme difficulty of pursuing a stretch goal can lead the organization to focus attention too much or too haphazardly on outside ideas (e.g., obsessive monitoring or unsystematic benchmarking of other firms), which would directly limit performance as the organization directs insufficient attention to opportunities that are most useful given its unique history and environment (Cyert & March, 1963).

Disruptive effects via affect. The contagion processes that drive collective affect in organizations occur regardless of whether the affective response is positive or negative (Barsade, 2002). While the high levels of ambition associated with stretch goals could raise the level of positive collective affect, as discussed earlier, stretch goals signal the need for change and, thus, simultaneously have the potential to elicit the negative affective responses that often accompany change (Barnett & Pratt, 2000). In particular, facing a goal that is seemingly impossible could instigate a negative affect contagion whereby exploration and willingness to try new approaches are impeded by a sense of collective fear, helplessness, and demotivation (Sitkin, 1992). Under such conditions, any incentives to explore induced by stretch goals would be dwarfed by the more salient threat created by them. A high level of negative collective affect is generally expected to constrict the motivation to use learning-enhancing processes and the capacity to absorb learning opportunities that may serendipitously present themselves (Cohen & Levinthal, 1990; Levinthal & March, 1993; Levitt & March, 1988; Woodman, Sawyer, & Griffin, 1993).

Stretch goals can also have disruptive effects on performance if collective commitment to the goal becomes compromised by widely held employee perceptions that a seemingly impossible goal is unrealistic or unworthy of pursuit. The extremity of stretch goals can also dampen collective affective responses like satisfaction and morale, because organizational attempts to reach the goals are likely to involve one or more failures. Thus, less extreme goals that are difficult but still attainable are often advised (Locke & Latham, 1994). Indeed, using goals that are difficult enough to require great effort or persistence, yet are still within reach, is consistent with many motivational perspectives (e.g., Atkinson, 1964; Heath, Larrick, & Wu, 1999; Locke & Latham, 1990; Vroom, 1964). For example, Heath et al. (1999) built on prospect theory to contend that because a goal serves as a reference point, initiative for working toward the goal diminishes with distance from the goal. Taken together, stretch goals have the potential to disrupt performance by diminishing collective initiative, morale, commitment, and resilience in the face of setbacks.

Disruptive effects via behavior. By definition, stretch goals are associated with extreme targets whereby current capabilities are not adequate in any obvious way for goal attainment. As such, actions associated with stretch goal implementation could create too large a break from the past, or the actions may simply lead to too many simultaneous changes to effectively distinguish signal from noise (March, 1976). In either case, organizational decision makers would be unable to learn which enacted changes are effective and which are ineffective or detrimental (March & Olsen, 1976). Moreover, organizational learning is best facilitated within at least moderately familiar territory

where there is a frame of reference to understand causal relationships and interpret feedback from changes that are made (Cohen & Levinthal, 1990; Sitkin, 1992; Weick, 1984). Without some degree of familiarity, organizations lack an effective frame, and feedback from actions and change efforts is experienced as ambiguous (cf. Levitt & March, 1988; March & Olsen, 1976). The novel means associated with stretch goal pursuit imply that there is little "domain relevance" to bring to bear on the situation, since "it is hard to be intelligent about that which is unfamiliar" (Sitkin, 1992: 245). Thus, conditions that could facilitate effective learning, such as controllable change in familiar territory with interpretable feedback, are unlikely to hold in the presence of stretch goals.

The extreme novelty of stretch goals could generate actions that complicate organizational performance. Because it is not clear initially how to start working toward a seemingly impossible goal, the inherent novelty and task complexity involved in attaining a stretch goal can compromise some types of organizational performance (e.g., Carley & Lin, 1997; Perrow, 1979). Moreover, an additional concern is the magnitude of change that would typically be required in attempting to bridge the gap between current capabilities and the attainment of a stretch goal. Greater scale change can be disruptive to performance because problems encountered and lessons learned are often not amenable to effective coping (Beer et al., 1990), whereas reduced scale of change creates more manageable problems with smaller performance milestones (Sitkin, 1992; Weick, 1984). The prospect of large-scale change induced by stretch goals can also instigate a threat-rigidity response (Staw, Sandelands, & Dutton, 1981)—an inability to act when under threat—that can undermine performance. Threat rigidity would be particularly maladaptive in the context of stretch goal pursuit, since rigidly clinging to existing practices cannot result in stretch goal attainment.

The extreme novelty and difficulty of attaining stretch goals could also directly impair coordination. Mandating the use of an organizational stretch goal can be done almost instantly, but actual attempts at implementation demand radical organizational change under vague guidance. Urgent change under such ambiguous circumstances can cause different organizational subunits to develop discrepant views about causality and appropriate action (Beer et al., 1990; Levitt & March, 1988). The resulting plurality of "stories" ascribed to the actions and outcomes associated with attempting to reach the stretch goal is likely to impair coordination among subunits that have separate purposes, specialties, and interests (Lawrence & Lorsch, 1967; Martin, 1992). Information distribution and integration, which are fundamental coordination elements inherent in organizational performance (as well as learning), are likely to be negatively affected as a result (Huber, 1991).

Finally, because stretch goals require new routines and resources, working to attain them could reduce (or eventually eliminate) the effective organizational exploitation of existing capabilities, practices, and investments that are otherwise working well. Exploring new routines is, of course, a large part of the rationale and promise of using stretch goals. But diverting too much or diverting for too long from existing, well-functioning investments can undermine overall performance (March, 1991; Perrow, 1979), even in the best case scenario where the organization is simultaneously reaping some learning and performance returns from the stretch pursuit. That is, while stretch goals are intended to break problematic inertial forces, beneficial path dependencies can also be lost if any routines that remain useful are thrown out. The jolt that stretch goals provide can thus outstrip the organization's existing capabilities and resources.

Our analysis in this section has suggested a number of specific mechanisms by which stretch goals could have either facilitative or disruptive effects, as summarized in Figure 1. In the following section we propose a contingency model of the primary organizational factors that ultimately predict *whether* stretch goals will facilitate or impede exploratory learning and performance.

CONTINGENCY FACTORS DETERMINING STRETCH GOAL EFFECTS ON LEARNING AND PERFORMANCE

To consider the contingencies that influence when organizations benefit or suffer from the use of stretch goals, we focus on the two core organizational factors that reflect the system's capacity to extract value from radical changes or new approaches: recent performance and

slack resources (Cyert & March, 1963). In terms of the mechanisms we analyzed in the prior section, we seek to answer the question, "How do recent performance and level of slack resources influence the balance between the facilitative and disruptive aspects of the cognitive, affective, and behavioral mechanisms by which stretch goals can influence exploratory learning and performance?" In other words, we propose a contingency framework to explain when stretch goals will have positive or negative effects on learning and performance outcomes depending on the levels of recent performance and slack resources of the organization using such goals.

Recent Performance

Is an organization fresh from success (e.g., recent performance above a benchmark, such as the organization's own performance in a prior period, average industry performance, or performance of a particular competitor) better situated to leverage the potential benefits of stretch goal use and to withstand fallout from any failure? With respect to the mechanisms summarized in Figure 1, there are reasons to expect that stronger recent performers, if they use stretch goals, are well situated to achieve facilitative effects on both learning and performance outcomes, whereas weaker recent performers are situated for disruptive effects from the use of stretch goals.

Recent performance is likely to drive whether stretch goals shift organizational attention in a way that is focused productively or counterproductively. Having just experienced success, stronger recent performers are less likely to perceive an immediate threat; thus, if they undertake a stretch goal, they should be more open to new ideas and more mindful in the scanning and processing of new information, both of which foster learning (e.g., Levitt & March, 1988; Weick et al., 2005). As part of being more mindful and vigilant, stronger recent performers are more likely to attend to contextual features and organizational capabilities that are internal and controllable (e.g., Staw et al., 1981; Sutcliffe, 1994), precisely because they have a (recent) history of deploying those features successfully (March & Olsen, 1976). Thus, in striving to reach a stretch goal, any routines that could be leveraged for radical performance-enhancing recombinations would be cognitively available to, and detected by, stronger recent performers.

Weaker recent performers, however, do not have the attentional advantages afforded by success. Because they are already in a compromised state owing to recent losses, if weaker recent performers choose to pursue a seemingly impossible goal, they are more likely to be overwhelmed by its demands and resort to hypervigilant, disorganized, or even frantic information processing that is disruptive to learning. Scattered attention and unsystematic information processing are also disruptive to performance such that weaker recent performers may attempt to reach a stretch goal by haphazardly or obsessively monitoring others in the industry for externally sourced quick fixes. Such external resources and practices may not pertain to internal resources (Beer et al., 1990), leverage existing strengths (March & Olsen, 1976), or allow for forging new paths and solutions through recombination (Henderson & Clark, 1990).[1]

Recent performance would also be expected to influence whether the collective affective responses to stretch goals facilitate or disrupt learning and performance. Success generates optimism, enthusiasm, and commitment and becomes self-reinforcing (March & Olsen, 1976; Weick, 1984). Thus, if strong recent performers use stretch goals, they should be more able to leverage optimism and energy from their recent success toward learning solutions for goal attainment and increased performance. In contrast, poor recent performance undermines many of these affective mechanisms. Poor recent performers attempting to reach a stretch goal are thus more susceptible to collective re-

[1] We note one situation at the far extreme of poor performance, where setting stretch goals is the only option for survival. Like the "Hail Mary" pass at the end of a U.S. football game, the pursuit of stretch goals when an organization has no other option could be normatively superior so long as it does not hasten death. However, one could also draw an analogy to the pursuit of a miracle cure for a terminal disease, which introduces the notion that if setting stretch goals consumes fungible resources that could still be used more effectively in other pursuits (e.g., employees devoting time to find other employment or more resources available to pay creditors), then the use of stretch goals even for survival may not always be the superior option to a quick and relatively painless organizational death.

sponses of fear or defensiveness that would obstruct the readiness to try new things and learn from them (Argyris, 1985; Sitkin & Pablo, 1992), as well as hamper the initiative and commitment needed to effectively pursue the performance opportunities offered by a stretch goal (Baumard & Starbuck, 2005).

Finally, the actions taken in the attempts to reach a stretch target would conceivably be very different as a function of an organization's recent performance and would therefore bring about different learning and performance outcomes. To the extent that success breeds the persistent utilization of the routines and practices that led to that success (Audia, Locke, & Smith, 2000; March & Olsen, 1976; Weick, 1984), strong recent performance might initially lead the organization down the erroneous path of trying to reach a stretch goal only by repeating actions undertaken in the past. However, once it determines that such an approach is not sufficient for reaching a stretch target, a stronger recent performer, lacking an existing threat, could respond to the crisis imposed by stretch goals with greater flexibility (Barnett & Pratt, 2000), such as by devising new strategies to meet the target and undertaking more effortful search activities, which are actions that can yield both learning and performance benefits.

Poor recent performance, however, can compromise the capacity to undertake systematic and controlled experimentation, thus leaving organizational actors to approach a stretch goal by instituting more chaotic changes that will not provide the clear feedback needed for complete learning. Moreover, recent performance problems signal that an organization is already under threat. It may even be the case that the stretch goal itself is related to the performance problems. Thus, encountering a stretch goal when there is existing pressure and where it is not immediately clear how to approach the goal could evoke a dysfunctional threat-rigidity response (Barnett & Pratt, 2000; Staw et al., 1981). Overall, stronger recent performers using stretch goals are better situated to experience facilitative effects on learning and performance, whereas weaker recent performers using stretch goals are situated for disruptive effects.

> *Proposition 1: For organizations with strong (weak) recent performance, the use of stretch goals will yield positive (negative) effects on learning and performance.*

Slack Resources

The presence of financial or other resources that have not been committed or deployed in the system (Bourgeois, 1981) and are available for the discretionary use of management (Nativi-dad, 2009) creates a buffer that scholars have conceptualized as unabsorbed slack. How might greater unabsorbed slack resources affect the capacity for organizations to reap successful outcomes when pursuing the seemingly impossible? Existing research suggests that greater slack resources protect against many of the disruptive mechanisms listed in Figure 1 and thereby help to facilitate positive effects on both exploratory learning and performance for organizations using stretch goals.

Slack serves a practical role in that finding exciting opportunities and identifying and cultivating internal capabilities to reach a seemingly impossible goal will typically demand the availability of people, money, time, and other resources. As a result, greater slack imbues an organization that opts to use stretch goals with certain cognitive advantages. By providing the time and access to the resources necessary to discover positive potential outcomes and attainment paths, slack allows for more openness to new information and vigilance in the processing of that information, which is beneficial for learning.

Moreover, the presence of slack resources should shift attention in a way that could be beneficial for performance (Ferrier, 2001; Nohria & Gulati, 1996; Young, Smith, & Grimm, 1996). We argue that, for an organization that is pursuing a stretch goal, having sufficient slack resources creates a situation in which the stretch goal is more likely to be interpreted as an opportunity to generate and sift through new ideas that are potentially usable based on internal existing capabilities. In contrast, limited slack would obstruct attention to possibly innovative (yet not obvious) leveraging of current capabilities, since detecting novel recombinations takes time and effort that would be less available.

Having slack also enables stretch goals to facilitate learning and performance by serving as both a literal and psychological buffer against the potentially negative collective affec-

tive responses to seemingly impossible goals. Because stretch goals involve the prospect of extreme change without an obvious method for goal attainment, collective responses of fear and helplessness may ensue if there are insufficient available resources to bring to bear on the situation. Greater slack reduces the pressure of obtaining resources necessary for trying to reach a seemingly impossible goal, and, thus, the pursuit of stretch goals can be met with more playfulness, curiosity, and enthusiasm, which are conducive to learning (Cyert & March, 1963; March, 1976). An organization opting to use a stretch goal when it has greater slack should also experience affective responses that aid in performance improvements. Stretch goal pursuit would typically involve failures and complications, at least in the early stages of implementation, and having adequate (or more than adequate) resources should make collective commitment more resilient when those obstacles surface (Young et al., 1996). A lack of tangible slack resources to credibly attempt stretch goal attainment, however, could easily lower morale and resilience needed to sustain initiative.

In addition, organizations with greater slack can test more varied actions and survive failures, which underresourced competitors are less capable of doing (e.g., having a capital reserve or back orders on existing products can help an organization survive a large R&D effort that fails). Using an organizational stretch goal to impose a crisis is precarious, since such intentionally generated crises meant to spur change "usually overwhelm organizations and their members' emotional, cognitive and behavioral capacities" and can result in dysfunctional rigidity (Barnett & Pratt, 2000: 75). However, organizations are more likely to avoid rigidity and instead respond to the imposed crisis with flexibility to the extent that they have sufficient time and encouragement for knowledge generation (Barnett & Pratt, 2000). Having slack resources thus permits an organization using stretch goals to encourage knowledge generation and to more feasibly and successfully engage in actions that can bring about learning from the goal, such as search that is extensive both in breadth and duration (Sitkin, 1992). Moreover, when excess slack resources are available, parallel initiatives for stretch goal attainment can be pursued in different units (Brown & Eisenhardt, 1998; March, 1991; Weick, 1984), allowing for the systematic and controlled experimentation vital to learning (Campbell, 1969). When slack is unavailable, however, learning is likely to be hampered, because a lack of resources constrains the capacity to undertake careful trial-and-error activities and obtain useful feedback (Cyert & March, 1963; Singh, 1986).

Finally, whereas slack resource availability allows organizations to take on new stretch targets without having to abandon what is already working well, low slack requires organizations pursuing stretch goals to divert resources away from other areas, which if carried out too extensively or for too long might eventually result in the loss of beneficial path dependencies and decline in overall performance. Organizations pursuing stretch goals with insufficient slack are also likely to experience impaired coordination, because coordinating actions across units on how to address radical change requires effort and time, a problem that is exacerbated as the internal task environment becomes more complex, interdependent, and urgent (Perrow, 1979). Taken together, organizations using stretch goals with greater slack resources are better situated to experience facilitative effects on learning and performance, whereas organizations without slack are situated for disruptive effects if they use stretch goals.

> *Proposition 2: For organizations with high (low) slack resources, the use of stretch goals will yield positive (negative) effects on learning and performance.*

DETERMINANTS OF STRETCH GOAL PURSUIT

As we argued above, levels of recent performance and slack resources determine whether an organization is positioned to experience facilitative or disruptive effects of stretch goals on exploratory learning and performance. But how do these same organizational factors influence whether an organization will actually use stretch goals in the first place? In this section we examine how recent performance and slack represent two distinct motives for pursuing any radical tool or technique: because the organization *must* (e.g., in response to recent performance problems) or because the organization *can* (i.e., availability of slack resources).

Recent Performance

We argued above that recent organizational success (performance above a benchmark) signals a greater capacity to reap beneficial outcomes from using stretch goals, but whether organizations with stronger recent performance will actually be drawn to using such goals is a separate question. Undertaking a radical tool like a stretch goal is likely to be driven in part by organizational sensitivity to risk and a propensity to accept new challenges, which are affected by levels of recent success. Prior research suggests that success can breed a conservative disposition toward risk in organizations (e.g., Levitt & March, 1988; Sitkin & Pablo, 1992). There is an observed tendency for strongly performing organizations to fall into a success or competency trap, in that success reinforces habits and leads to more exploitation of current skills and practices and less exploration of new capabilities (Lant, Milliken, & Batra, 1992; Levitt & March, 1988; Maidique & Zirger, 1985). For example, while consistent success leads to more focus within proven routines, Weick (1984), March and Olsen (1976), and Sitkin (1992) argue that it also results in less expansive search activities and a reduced willingness to utilize less established skills in pursuing riskier, innovative paths. Likewise, prospect theory (Kahneman & Tversky, 1979), which characterizes the behavior of both individuals and organizations (e.g., Mezias, 1988; Singh, 1986), implies risk aversion in the domain of gains such that when an organization has been performing well, it tends to continue its current strategy and course of action rather than try new or risky approaches like stretch goals.

In contrast, an organization experiencing recent performance below a benchmark tends to interpret its present situation as a loss relative to the benchmark. Under such conditions, the organization is more likely to undertake risky actions or even to try radically new methods with uncertain prospects for success[2] (e.g., Levinthal & March, 1993; Singh, 1986; Sitkin & Pablo, 1992). Stretch goals may therefore appear more frequently in organizations that are driven to "go for broke" (Singh, 1986; Sitkin & Pablo, 1992: 27) after experiencing noteworthy poor performance (called "the failure trap" by Levinthal & March, 1993: 105). Fiegenbaum (1990), Wiseman and Catanach (1997), and Shoham and Fiegenbaum (2002), for example, found that poorly performing organizations were more likely to exhibit risky action relative to organizations above the industry average in performance. Simon, Houghton, and Savelli (2003) and Miller and Chen (2004) found that organizations with disappointing performance undertook riskier projects. Lee (1997) found that organizations unable to match their own past performance exhibited risk seeking relative to those exceeding their own past performance. All of this suggests that stretch goals would be less likely to be used by successful performers than by unsuccessful ones.

> *Proposition 3: Stronger recent performance is associated with a lower likelihood that an organization will use stretch goals.*

Slack Resources

The ready availability of excess uncommitted resources should position an organization to reap positive effects on learning and performance should it choose to use stretch goals, as we argued above. Although slack resources allow for experimentation with radical tools such as stretch goals (e.g., Cyert & March, 1963; Nohria & Gulati, 1996), an organization with slack resources is probably unlikely to actually use such goals, because slack functions as an inertia- and complacency-fostering buffer between the organization and the environment (e.g., Sitkin, 1992), rather than as a force for the creation of an enriching, exploration-enhancing milieu. Indeed, empirical studies have shown that the presence of unabsorbed slack inhibits risk taking and adaptiveness (e.g., Kraatz & Zajac, 2001; Maidique & Zirger, 1985).

[2] It is important to emphasize that *recent* performance is the focus of our argument. Over a longer time horizon, performance can cause aspirations to change. Performance that has been consistently below an industry average or some other reference point can drive down aspirations, resulting in a decreased propensity to undertake risks designed for performance improvement (Lant, 1992; Mezias, Chen, & Murphy, 2002). Similarly, work on threat rigidity (Staw et al., 1981) and permanently failing organizations (Meyer & Zucker, 1989) highlights that some organizations with extreme levels of poor performance may avoid escalating risky behavior because of an inability to respond (e.g., threat rigidity) or an ability to buffer (e.g., permanent failure).

We surmise that "free" resources (i.e., slack) typically are not used by organizations to explore more freely; instead, slack seems to reduce the felt pressure for organizations to be responsive. Thus, we expect that having greater slack results in less motivation to engage in actions that involve substantial adaptation or change in routines. In terms of the behavioral theory of the firm (Cyert & March, 1963), we posit that organizations will not typically engage in expansive slack-driven search, even in the presence of sufficient slack, but, rather, will engage in at most incremental search and local adaptation, which will preclude attraction to the use of radical initiatives like stretch goals.

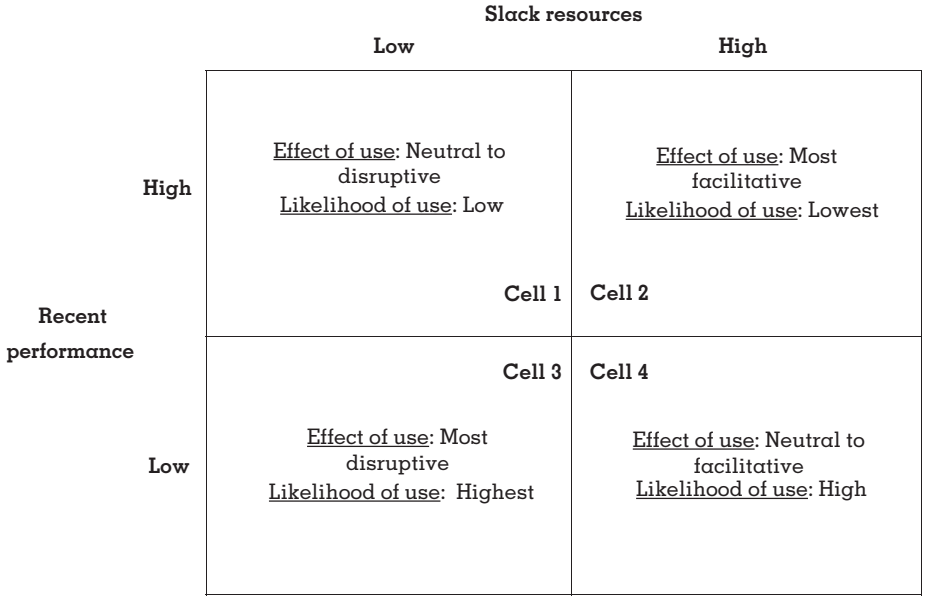
> *Proposition 4: Greater slack is associated with a lower likelihood that an organization will use stretch goals.*

The Paradox of Stretch Goals

Figure 2 summarizes our propositions concerning how different combinations of slack and recent performance influence the expected valence (positive versus negative) of stretch goal *effects* on learning and performance (Propositions 1 and 2), as well as the likelihood organizations will actually *use* stretch goals (Propositions 3 and 4). The figure reveals that there is a misalignment between the organizations we predict are most likely to reap learning and performance benefits from stretch goals and the organizations most likely to pursue such goals. In cell 2, for example, an organization has both the slack resources to help take on the risks of trying a stretch goal and the positive momentum associated with recent performance success (Propositions 1 and 2). However, when an organization is doing well, we suggest it will generally be averse to aggressive risky or radical change initiatives (Propositions 3 and 4). An organization in this cell thus has the lowest relative likelihood of pursuing stretch goals, although it is arguably the best situated for facilitative learning and performance effects. It is understandable that such a munificent circumstance could obviate the perceived need to use stretch goals, but organizations in such a situation would be advised to fight inertia and occasionally go against their inclination to avoid stretch goals because they have the requisite resources and resilience (in terms of cognitive, affective, and behavioral capacity) to benefit from such goals.

In cell 3, where recent performance and slack are both low, Propositions 3 and 4 would suggest that stretch initiatives are most likely to be undertaken, particularly as a way to reverse past

FIGURE 2
The Paradox of Stretch Goals



failures or as a last-ditch effort for survival. Despite the motivational, performance-driven seduction of stretch goals when recent performance and slack are both low, organizations in this cell are positioned to experience primarily disruptive effects on learning and performance because they do not have the cognitive or affective advantages of recent success (Proposition 1) or the buffer around experimental action that slack provides (Proposition 2). Counter to what we predict will be the inclination of such organizations, they should avoid stretch goals and should instead pursue "small wins" (Weick, 1984) to try to accumulate resources and resilience. Or, at most, such organizations could try a "small losses" strategy (Sitkin, 1992) that allows for building experience in a way that costs less and requires less resilience for survival.

Figure 2 also reveals that for two combinations of slack and recent performance (cells 1 and 4), the likelihood of using stretch goals is reasonably aligned with the expected positive or negative valence of effects. In cell 1, organizations with strong recent performance and low slack should have a relatively low propensity to pursue stretch goals (as compared to cells 3 or 4). Recalling Proposition 3, organizations with very strong recent performance may become mired in competency traps and tend to avoid risky change. These organizations simply do not have a pressing need for stretch goals in the near term. Although Proposition 4 suggests that less slack tends to be associated with a higher propensity to pursue stretch goals, we expect that this tendency is tempered significantly by performance-driven conservatism. Because of the powerful effects of recency on judgment (e.g., Bjork & Whitten, 1974; Hogarth & Einhorn, 1992), we surmise that recent performance will be a stronger factor than slack when it comes to what drives an organization to act, and, thus, organizations with strong recent performance will exhibit a relatively low likelihood to pursue stretch goals.[3] Organizations in this cell should, in fact, follow their strategic inclination to avoid using stretch goals. Although strong recent performance would provide some advantages in leveraging the positive potential of stretch goals (Proposition 1), limited unabsorbed slack resources act as a significant constraint that would contribute to primarily disruptive (or at best neutral) effects of stretch pursuit on learning and performance (Proposition 2).

In cell 4, where the level of slack resources is high but recent performance is weak, organizations will exhibit a relatively high likelihood of pursuing stretch goals (compared to cells 1 or 2). For organizations in this cell, the pursuit of stretch initiatives is driven by the desire to recoup recent performance losses (Proposition 3), without the tempering effect of (slack) resource constraints. Although higher levels of slack could contribute to complacency and dampen enthusiasm for radical change (Proposition 4), we once again expect that the power of recency (e.g., Bjork & Whitten, 1974; Hogarth & Einhorn, 1992) is likely to motivate organizational decision makers to emphasize recent poor performance, even over successful (but far less salient) longer-term past performance. Organizations in this cell also have some advantages that should protect them from disruptive stretch goal effects on learning and performance. Greater slack resources provide buffers against short-run performance problems and make the organization more resilient in the face of the extreme demands of stretch goals, and the ongoing munificence of the internal environment makes large-scale, risky projects more feasible to undertake (Proposition 2). Overall, when reacting to recent performance losses and adequately resourced with slack, organizations are reasonably likely to use stretch goals and are also positioned to experience some facilitative (or at least neutral) effects on learning and performance.

Our analysis reveals a paradox: the organizations most likely to benefit from stretch goals are least likely to use them, and the organizations least likely to benefit from them are the most likely to use them (i.e., cells 2 and 3 in Figure 2). This pattern suggests that it is really only under quite limited conditions that organizations will be safely positioned to experience positive learning and performance outcomes from pursuing stretch targets—namely, organizations with both high slack resources and high recent performance (cell 2 in Figure 2). Yet few organizations can realistically be expected to fall into that category. In fact, we speculate that most organizations carry low levels of unabsorbed slack (cells 1 or 3), which by

[3] *Recency* effects (e.g., Bjork & Whitten, 1974; Hogarth & Einhorn, 1992) in psychology refer to a cognitive tendency where recent stimuli or events are more salient and, thus, are given disproportionate weight in judgment and decisions.

our analysis would suggest that stretch goals usually will have disruptive, or at best neutral, effects on learning and performance for the typical organization.

DISCUSSION

Drawing from a variety of theoretical perspectives, our primary purpose in this article is to advance the understanding of exploratory learning and adaptation by systematically investigating the causes and effects of pursuing seemingly impossible organizational goals—stretch goals. In this section we review our conclusions and examine the contributions our work makes to extant theory and research in several areas of inquiry. We also consider the reasons behind the common belief that stretch goals are simple and widely successful when careful analysis suggests a more complicated picture. Finally, we identify research opportunities that extend beyond the scope of the present investigation and highlight implications for managerial practice.

Opening the Theoretical Black Box of Seemingly Impossible Goals

Goals and aspirations play an important role in organizational theory (e.g., Cyert & March, 1963). Yet scholars have placed little emphasis on understanding the specific underlying processes through which macrolevel goals, particularly unattainable goals, can influence organizational outcomes. Thus, our theoretical investigation of how stretch goals function and affect organizational outcomes began with a thorough consideration of the cognitive, affective, and behavioral mechanisms by which seemingly impossible goals can influence exploratory learning and organizational performance (summarized in Figure 1). Going beyond prior thinking on organizational stretch goals, which has not systematically considered mechanisms and has focused largely on presumed positive effects, we examined the potential for seemingly impossible goals to both facilitate *and* disrupt learning and performance. We then proposed that whether facilitative or disruptive effects ensue is contingent on two core organizational factors: recent performance and slack resources (Propositions 1 and 2). We also posited that these same two factors determine the likelihood that organizations will be drawn to using stretch goals (Propositions 3 and 4).

The conclusion suggested by the aggregated analysis of our four propositions, as revealed in Figure 2, is the unfortunate tendency for the wrong organizations to be most drawn to using stretch goals. Furthermore, whereas weak organizations might pursue stretch goals out of desperation and make their dire circumstances worse, those with the capabilities to truly benefit from stretch goals typically fail to do so because the same characteristics that make them well positioned to benefit from stretch goals also limit their inclination to actually pursue them. This situation is what we call "the paradox of stretch goals."

Our theory building contributes interdisciplinary insights at the intersection of the literature on organizational goals, on learning, and on adaptation by investigating the means by which extreme goals can prompt exploration (e.g., Rahmandad, 2008; Uotila et al., 2009) and dynamic capability development (e.g., Agarwal & Helfat, 2009; Capron & Mitchell, 2009; Winter, 2000). As summarized in Figure 1, our analysis indicates that stretch goals can capture attention and facilitate openness to questioning the validity of old assumptions, old information, and old frameworks. Stretch goals can also prompt behaviors traditionally associated with learning, such as broad search, experimentation, and trial and error. Yet, at the same time, some of the most critical conditions for effective learning to occur (such as more experience, controllable change, and interpretable feedback) do not automatically hold in the case of stretch goals, and, thus, organizations are unlikely to learn from them unless they have the slack resources to repeatedly and systematically experiment and withstand failures.

The requisite resilience required to effectively pursue stretch goals is also aided by strong recent performance. These ideas provide a basis for deeper analysis and clarity around the processes and conditions needed for organizations to learn effectively under ambiguity (March & Olsen, 1976; Weick, 1979, 1995). Although we build on the behavioral theory of the firm (Cyert & March, 1963) in suggesting that slack resources can positively enable organizations to benefit from using stretch goals (Proposition 2), our predictions diverge from the behavioral theory of the firm when we posit that organizations with these capabilities are unlikely to actually use innovation methods that are as radical and risky as stretch goals (Proposition 4). That is, we diverge because we expect that

having greater unabsorbed slack, while enabling, results in less motivation to actually engage in actions that involve substantial adaptation, risk, or change in routines.

In considering the reasons why organizations might be drawn to use stretch goals, our analysis speaks to the literature on organizational change and adaptation to internal and external jolts (e.g., Barnett & Pratt, 2000; Beer et al., 1990; D'Aveni & MacMillan, 1990; Meyer, 1982). We argue that stretch goals can be viewed as autogenic crises meant to spur innovation, change, learning, and increases in performance (e.g., Barnett & Pratt, 2000; D'Aveni & MacMillan, 1990). Our theoretical analysis of the causes and effects of using seemingly impossible goals generates additional insight into how organizations more or less effectively learn from both internal and environmental stimuli (e.g., Sutcliffe, 1994), as well as the conditions that give rise to punctuated organizational change processes (Romanelli & Tushman, 1994).

Finally, our investigation advances our understanding of the effects of unattainable goals (e.g., Garland, 1982, 1983; Locke, 1982, 2004; Rousseau, 1997) at a collective level by systematically surfacing specific mechanisms through which such goals have organizational outcomes. As such, our analysis contributes to the literature on organizational goals (e.g., Cyert & March, 1963; Ethiraj & Levinthal, 2009; Lant, 1992; Lant & Shapira, 2008) by revealing how stretch goals can challenge important scholarly assumptions regarding the relationship between aspirations and firm performance. We argue that stretch goals create aspiration-performance gaps that are too extreme to reliably lead to organizational performance increases, except for the rare organizations that have sufficient slack resources and strong recent performance.

The Persistent Perception That Stretch Goals Consistently Lead to Success

Because the scholarly research we draw from suggests that the effects of seemingly impossible goals are complex and contingent, we need to ask why so many authors (mostly, but not exclusively, practice-focused authors) argue that stretch goals are an unmitigated organizational success story. Numerous practitioner-focused writings assert that stretch goals reliably lead to positive performance results (e.g., Collins & Porras, 1994; Hamel, 1998; Hamel & Prahalad, 1993), including reports concerning 3M, CSX, Motorola, General Electric, Union Pacific, Boeing, Mead, and Toyota (Takeuchi et al., 2008; Thompson et al., 1997; Tully, 1994). Such highly visible successes make salient the perception of universal stretch goal success, as illustrated in the following effusive endorsement from Jack Welch, former CEO of General Electric (where the term *stretch* may have originated):

> We have what we call stretch targets. . . . For example, we spent 105 years in this company and we never had double digit operating margins. We said in 1991 we want 15 and we put it in our annual report. We told everybody. 9.6 or 9.5 was our best. We'll do 14 in 1994, and prices have been going down in the global market. And we'll do 15 next year. We never did more than 5 inventory turns and we said we'll do 10. We had no idea how we would get to 10. . . . The big line I use today is that budgets enervate and stretch energizes. It's real (Bartlett, 1999).

There are several reasons why stretch goals may be persistently perceived and portrayed as more beneficial for learning and performance than we propose they actually are. Our theoretical analysis suggests one particular reason why this misperception may arise and persist: most famous stretch goal success stories come from organizations in which management set very ambitious performance goals to prepare for a radical change while the organization had good resource endowments (e.g., IBM in the 1960s, General Electric in the 1980s, and Toyota in the 1990s; see also Bartlett & Wozny, 1999; Hamel, 1998; Sherman, 1995; Takeuchi et al., 2008; Thompson et al., 1997). That is, proponents of stretch goals may have overgeneralized based on evidence from organizations that had substantial slack resources and, in many cases, also had strong recent performance (i.e., cell 2 in Figure 2). By our analysis, these organizations were unusually well positioned to benefit from stretch goals (Propositions 1 and 2). But these organizations were probably outliers that somehow avoided the dominant pattern of inertia that Propositions 3 and 4 would predict for organizations having both a large amount of slack and strong recent performance. Thus, we argue that the generalized basis for the success of stretch goals has been misconstrued and has consequently led to an oversimplified and inflated perception of their value.

Aside from focusing on high-performing organizations with substantial resources, the pervasive view of stretch goals as beneficial could be due to success stories based on incomplete learning cycles, such as

when apparent consequences are actually unrelated to organizational action and lead to what March and Olsen (1976) call "superstitious" experiential learning (see also Huber, 1991). Similarly, some organizational decision makers may come to unjustified or overconfident conclusions based on few data points, a sample size problem where faulty learning can occur from low-frequency events in which performance effects are often confounded with random error or other fallacious data (March, Sproull, & Tamuz, 1991). Moreover, failure myopia (Levinthal & March, 1993) may be an issue, whereby organizational learning is based on oversampling of successes and undersampling of failures because successful practitioner examples, salient and compelling as they are, may be but a small, unrepresentative drop in a large ocean of organizational initiatives (see also Denrell, 2003). Base-rate neglect can also make highly risky exploration (e.g., stretch goals) appear to be a good idea, with an unrealistically high expectation of success. In addition, organizations that pursue stretch goals, particularly those that do so as a last-ditch effort when they are already failing, might subsequently fail entirely and disappear, thus biasing the observable sample of users toward success. Observers trying to judge the effectiveness of stretch goals are therefore exposed to a systematically biased sample with an overrepresentation of successes.

All of these issues lead us to conclude that investigations based on a few select cases, including many that appear in practice-focused publications, are unlikely to present a balanced picture of stretch goal processes and effects. By sidestepping glib exhortations and focusing instead on a generative, theoretically grounded analysis of mechanisms and contingency factors, we hope we have provided some useful guidelines for managers to use in tailoring their practices to conditions most likely to lead to positive outcomes.

Foundations for Future Research

We conclude with a discussion of possible empirical settings and extensions for research on stretch goals, as well as a brief commentary on two implications of stretch goal pursuit that are beyond the scope of the current investigation but highlight important areas for future inquiry.

Empirical tests of stretch goal effects. To set the stage for future empirical work, we have proposed a testable theory suggesting that seemingly impossible organizational goals exhibit a predictable pattern of positive and negative effects contingent on recent performance and slack resources, and these contingency factors also determine when organizations are more or less likely to use such goals. Our propositions could be examined using several empirical approaches. For example, initial empirical studies of stretch goal effects could take the form of qualitative theory testing, whereby multiple firms with different attributes are studied in depth. Or a study using one very large organization could examine the use and effectiveness of project proposals within the organization (e.g., high-risk research initiatives or new venture proposals). Alternatively, a simulation study would provide the control to vary organizational conditions and measure baseline levels of learning and performance before and after the imposition of a stretch goal.

In addition, quantitative investigations could be undertaken to study both the effects and likelihood of pursuing stretch goals using a stratified random sample based on archival indicators of slack and recent performance. Within the sample, evidence of stretch goal usage could be measured by conducting a survey of senior managers in organizations, or it could be extracted from annual reports or letters to shareholders. In any of these approaches, individual organizations in the sample could be coded for the timing of stretch goal use and the type or nature of the stretch goal (e.g., a goal to increase market share, reduce manufacturing process time, reduce error rate) in order to better compare effects across organizations.

Beyond testing the organization-level effects we have proposed in this article, future research could focus more specifically on the potential underlying processes and mechanisms summarized in Figure 1. That is, researchers could study unattainable goals in terms of their impact on the cognitive, affective, and behavioral mechanisms through which stretch goals can influence organizational outcomes. To further enrich and extend the theory proposed here, future studies could also examine possible sequences, interactions, and path dependencies among the mechanisms. It would be interesting as well to explore the implications of variation in the degree of stretch goal implementation, such as when unattainable goals are used only by segments of an organization versus the entire organization.

In our theorizing we have discussed organization-level effects on learning and performance, but within the organization stretch goals might have differential effects on various parts of the system. Additionally, because the use of stretch goals implies a willingness to undertake high risks to pursue high rewards, variation in incentives within organizations for the pursuit of stretch goals could be examined to see how this affects both use and effectiveness of such goals. All of these questions highlight fruitful ways in which the ideas we have proposed can be further extended and refined if future research were to focus on the ripple effects inside organizations that use stretch goals, rather than focusing only on the aggregated organization-level outcomes that have been our primary focus.

Process-oriented stretch goals. Scholarly and practitioner accounts of stretch goals suggest that such goals are typically used in the explicit hope of directly improving performance, and potentially also spurring exploratory learning in the course of achieving the extreme target. Consistent with the use of stretch goals in practice and also the majority of goal research, we have defined and analyzed stretch goals as outcome-oriented goals that make explicit a specific, quantifiable level of desired performance or output (e.g., decrease errors by a particular percentage). Note that this precludes goals that are articulated solely in terms of enhancing the learning process as an end in itself (e.g., where the goal is to formulate five ways of learning how to decrease errors). This raises the question of whether learning-focused organizations (i.e., considering the use of stretch goals solely to learn) really need to use stretch goals (which are performance outcome goals) as a vehicle, or whether they could gain the facilitative benefits of stretch goals and limit their disruptive liabilities by using process-oriented learning goals instead (see, for example, Seijts & Latham, 2005). It is ultimately an empirical question, and future work could explore whether our analysis holds when one moves beyond outcome-oriented performance goals to include seemingly impossible goals that are explicitly focused on the acquisition of procedural knowledge at the organization level of analysis.

Ethical implications of stretch goal pursuit. While we have focused on the organization level of analysis, we wish to point out some findings at the individual level pertaining to the unintended negative consequences of goal setting, with a particular focus on how goals can induce unethical behavior (Barsky, 2008; Jensen, 2003; Locke, 2004; Ordonez, Schweitzer, Galinsky, & Bazerman, 2009; Schweitzer, Ordonez, & Douma, 2004). Although goals can pose an especially dangerous temptation to breach ethics when associated with performance measurement or compensation systems by creating incentives to misrepresent performance (Jensen, 2003; Locke, 2004; Schweitzer et al., 2004), empirical work provides direct evidence that even nonmonetary rewards for meeting a goal (such as internal satisfaction) are sufficient to influence unethical behavior (Schweitzer et al., 2004).

Moving from merely difficult goals at the individual level to the case of stretch goals at the organization level, the ethical implications could be amplified. The seeming impossibility of achieving stretch goals using ordinary means could easily slip into the seductiveness of using extraordinary means, such as falsifying records. Managing the unintended ethical perils of seemingly impossible goals, as well as other individual-level disruptive effects that are beyond the scope of the present investigation, is worthy of further examination.

CONCLUSION

We investigated the organizational pursuit of seemingly impossible goals—commonly known as stretch goals—and the effects of such goals on exploratory learning and increased performance. Despite widespread interest in the idea of stretch goals and assertions about their systematic benefits, there are many reasons to interpret the normative stories of stretch goal success as resulting from misunderstandings of the actual functioning and effects of this enticing technique. Although our analysis suggests that there are very specific and limited conditions under which some organizations should pursue seemingly impossible goals, we recognize that organizations may continue to look for success in all the wrong places. Thus, a challenge for organizational researchers is to more clearly identify control mechanisms, learning strategies, and decision aids that organizations can use to achieve greater effectiveness in overcoming the paradox of stretch goals.

REFERENCES

Adler, P. S., & Obstfeld, D. 2007. The role of affect in creative projects and exploratory search. ***Industrial and Corporate Change,*** 16: 19–50.

Agarwal, R., & Helfat, C. E. 2009. Strategic renewal of organizations. ***Organization Science,*** 20: 281–293.

Argote, L. 1999. ***Organizational learning: Creating, retaining, and transferring knowledge.*** New York: Kluwer.

Argyris, C. 1985. ***Strategy, change, and defensive routines.*** Boston: Pitman.

Argyris, C., & Schön, D. A. 1978. ***Organizational learning: A theory of action perspective.*** Reading, MA: Addison-Wesley.

Atkinson, J. W. 1964. ***An introduction to motivation.*** Princeton, NJ: Van Nostrand.

Audia, P. G., Locke, E. A., & Smith, K. G. 2000. The paradox of success: An archival and a laboratory study of strategic persistence following radical environmental change. ***Academy of Management Journal,*** 43: 837–851.

Barnett, C. K., & Pratt, M. G. 2000. From threat-rigidity to flexibility—Toward a learning model of autogenic crisis in organizations. ***Journal of Organizational Change Management,*** 13: 74–88.

Barsade, S. G. 2002. The ripple effect: Emotional contagion and its influence on group behavior. ***Administrative Science Quarterly,*** 47: 644–675.

Barsade, S. G., & Gibson, D. E. 2007. Why does affect matter in organizations? ***Academy of Management Perspectives,*** 21(1): 36–59.

Barsky, A. 2008. Understanding the ethical cost of organizational goal-setting: A review and theory development. ***Journal of Business Ethics,*** 81: 63–81.

Bartel, C. A., & Saavedra, R. 2000. The collective construction of work group moods. ***Administrative Science Quarterly,*** 45: 197–231.

Bartlett, C. A. 1999. ***GE compilation: Jack Welch 1981–1999***. Video, Harvard Business School, Boston.

Bartlett, C. A., & Wozny, M. 1999. ***GE's two-decade transformation: Jack Welch's leadership***. Case No. 301040-MMC-ENG. Boston: Harvard Business School Case Services.

Bass, B., & Riggio, E. G. 2005. ***Transformational leadership*** (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Baum, J. A. C., & Dahlin, K. B. 2007. Aspiration performance and railroads' pattern of learning from train wrecks and crashes. ***Organization Science,*** 18: 368–385.

Baumard, P., & Starbuck, W. H. 2005. Learning from failures: Why it may not happen, ***Long Range Planning,*** 38: 281–298.

Beer, M., Eisenstat, R. A., & Spector, B. 1990. ***The critical path to corporate renewal.*** Boston: Harvard Business School Press.

Bjork, R. A., & Whitten, W. B. 1974. Recency-sensitive retrieval processes in long-term free recall. ***Cognitive Psychology,*** 6: 173–189.

Bourgeois, L. J. 1981. On the measurement of organizational slack. ***Academy of Management Review,*** 6: 29–39.

Brown, S. L., & Eisenhardt, K. M. 1998. ***Competing on the edge: Strategy as structured chaos.*** Boston: Harvard Business School Press.

Campbell, D. T. 1969. Reforms as experiments. ***American Psychologist,*** 24: 409–429.

Capron, L., & Mitchell, W. 2009. Selection capability: How capability gaps and internal social frictions affect internal and external strategic renewal. ***Organization Science,*** 20: 294–312.

Carley, K. M., & Lin, Z. A. 1997. A theoretical study of organizational performance under information distortion. ***Management Science,*** 43: 976–997.

Chesney, A. A., & Locke, E. A. 1991. Relationships among goal difficulty, business strategies, and performance on a complex management simulation task. ***Academy of Management Journal,*** 34: 400–424.

Christensen, C. M. 1997. ***The innovator's dilemma: When new technologies cause great firms to fail.*** Boston: Harvard Business School Press.

Cohen, W. M., & Levinthal, D. A. 1990. Absorptive capacity: A new perspective on learning and innovation. ***Administrative Science Quarterly,*** 35: 128–152.

Colbert, A. E., Kristof-Brown, A. I., Bradley, B. H., & Barrick, M. R. 2008. CEO transformational leadership: The role of goal importance congruence in top management teams. ***Academy of Management Journal,*** 51: 81–96.

Collins, J. C., & Porras, J. I. 1994. ***Built to last: Successful habits of visionary companies.*** New York: Harper Collins.

Collins, J. C., & Porras, J. I. 1996. Building your company's vision. ***Harvard Business Review***, 74(5): 65–77.

Cyert, R. M., & March, J. G. 1963. ***Behavioral theory of the firm.*** Englewood Cliffs, NJ: Prentice-Hall.

D'Aveni, R. A., & MacMillan, I. C. 1990. Crisis and the content of managerial communications: A study of the focus of attention of top managers in surviving and failing firms. ***Administrative Science Quarterly,*** 35: 634–657.

Denrell, J. 2003. Vicarious learning, undersampling of failure, and the myths of management. ***Organization Science,*** 14: 227–243.

Dess, G. G. 1987. Consensus on strategy formulation and organizational performance: Competitors in a fragmented industry. ***Strategic Management Journal,*** 8: 259–277.

Drazin, R., & Sandelands, L. 1992. Autogenesis: A perspective on the process of organizations. ***Organization Science,*** 3: 230–249

Dvir, T., Eden, D., Avolio, B. J., & Shamir, B. 2002. Impact of transformational leadership on follower development and performance: A field experiment. ***Academy of Management Journal,*** 45: 735–744.

Edmondson, A. C., Bohmer, R. M., & Pisano, G. P. 2001. Disputed routines: Team learning and new technology implementation in hospitals. ***Administrative Science Quarterly***, 46: 685–716.

Ethiraj, S. K., & Levinthal, D. 2009. Hoping for A to Z while

rewarding only A: Complex and multiple organizational goals. ***Organization Science,*** 20: 4–21.

Fang, C., & Levinthal, D. 2009. The near term liability of exploitation: Exploration and exploitation in multi-stage problems. ***Organization Science,*** 20: 538–551.

Ferrier, W. J. 2001. Navigating the competitive landscape: The drivers and consequences of competitive aggressiveness. ***Academy of Management Journal,*** 44: 858–877.

Fiegenbaum, A. 1990. Prospect theory and the risk-return association: An empirical examination in 85 industries. ***Journal of Economic Behavior and Organization,*** 14: 187–203.

Freiberg, K., & Freiberg, J. 1996. ***Nuts! Southwest Airlines' crazy recipe for business and personal success.*** Austin, TX: Bard Press.

Galbraith, J. R. 1973. ***Designing complex organizations.*** Reading, MA: Addison-Wesley.

Garland, H. 1982. Goal levels and task performance: A compelling replication of some compelling results. ***Journal of Applied Psychology,*** 67: 245–248.

Garland, H. 1983. Influence of ability, assigned goals, and normative information on personal goals and performance: A challenge to the goal attainability assumption. ***Journal of Applied Psychology,*** 68: 20–30.

Golovin, J. J. 1997. ***Achieving stretch goals: Best practices in manufacturing for the new millennium***. Upper Saddle River, NJ: Prentice-Hall.

Greve, H. R. 1998. Performance, aspirations, and risky organizational change. ***Administrative Science Quarterly,*** 43: 58–77.

Greve, H. R. 2003. ***Organizational learning from performance feedback.*** Cambridge: Cambridge University Press.

Hamel, G. 1998. Strategy innovation and the quest for value. ***Sloan Management Review,*** 39(2): 7–15.

Hamel, G., & Prahalad, C. K. 1993. Strategy as stretch and leverage. ***Harvard Business Review***, 71(2): 75–84.

Heath, C., Larrick, R. P., & Wu, G. 1999. Goals as reference points. ***Cognitive Psychology,*** 38: 79–109.

Henderson, R. M., & Clark, K. B. 1990. Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. ***Administrative Science Quarterly,*** 35: 9–30.

Hitt, M. A. 1988. The measuring of organizational effectiveness: Multiple domains and constituencies. ***Management International Review,*** 28: 28–40.

Hogarth, R. M., & Einhorn, H. J. 1992. Order effects in belief updating: The belief-adjustment model. ***Cognitive Psychology,*** 24: 1–55.

Huber, G. P. 1991. Organizational learning: The contributing processes and the literatures. ***Organization Science,*** 2: 88–115.

Hughes, R. E. 2001. Contingent use of stretch goals: Considerations of workflow integration and risk deviation. ***Work Study,*** 50: 7–12.

Ingram, P., & Baum, J. A. C. 1997. Opportunity and constraint: Organizations' learning from the operating and competitive experience of industries. ***Strategic Management Journal,*** 18(Summer Special Issue): 75–98.

Janis, I. L., & Mann, L. 1977. ***Decision making.*** New York: Free Press.

Jensen, M. C. 2003. Paying people to lie: The truth about the budgeting process. ***European Financial Managemen***t, 9: 379–406.

Kahneman, D., & Tversky, A. 1979. Prospect theory: An analysis of decision under risk. ***Econometrica,*** 47: 263–291.

Kang, S. C., Morris, S. S., & Snell, S. A. 2007. Relational archetypes, organizational learning, and value creation. ***Academy of Management Review,*** 32: 236–256.

Kerr, S., & Landauer, S. 2004. Using stretch goals to promote organizational effectiveness and personal growth: General Electric and Goldman Sachs. ***Academy of Management Executive,*** 18(4): 134–138.

Kim, L. 1998. Crisis construction and organizational learning: Capability building in catching-up at Hyundai Motor. ***Organization Science,*** 9: 506–521.

Kim, T., & Rhee, M. 2009. Exploration and exploitation: Internal variety and environmental dynamism. ***Strategic Organization,*** 7: 11–41.

Kotter, J. P. 2008. ***A sense of urgency.*** Boston: Harvard Business School Press.

Kraatz, M. S., & Zajac, E. J. 2001. How organizational resources affect strategic change and performance in turbulent environments: Theory and evidence. ***Organization Science,*** 12: 632–657.

Lant, T. K. 1992. Aspiration level adaptation: An empirical exploration. ***Management Science,*** 38: 623–644.

Lant, T. K., Milliken, F. J., & Batra, B. 1992. The role of managerial learning and interpretation in strategic persistence and reorientation: An empirical exploration. ***Strategic Management Journal,*** 13: 585–608.

Lant, T. K., & Shapira, Z. 2008. Managerial reasoning about aspirations and expectations. ***Journal of Economic Behavior and Organization,*** 66: 60–73.

Lawrence, P. R., & Lorsch, J. W. 1967. ***Organization and environment: Managing differentiation and integration.*** Boston: Harvard Business School Press.

Lee, D. Y. 1997. The impact of poor performance on risk-taking attitudes: A longitudinal study with PLS causal modeling approach, ***Decision Sciences,*** 28: 59–80.

Leonard-Barton, D. 1992. Core capabilities and core rigidities: A paradox in managing new product development. ***Strategic Management Journal,*** 13: 111–125.

Levinthal, D. A., & March, J. G. 1981. A model of adaptive organizational search. ***Journal of Economic Behavior and Organization,*** 2: 307–333.

Levinthal, D. A., & March, J. G. 1993. The myopia of learning. ***Strategic Management Journal,*** 14: 95–112.

Levitt, B., & March, J. G. 1988. Organizational learning. ***Annual Review of Sociology***, 14: 319–340.

Locke, E. A. 1982. Relation of goal level to performance with a short work period and multiple goal levels. ***Journal of Applied Psychology,*** 67: 512–514.

Locke, E. A. 2004. Linking goals to monetary incentives. ***Academy of Management Executive,*** 18(4): 130–133.

Locke, E. A., & Latham, G. P. 1990. ***A theory of goal setting and task performance.*** Englewood Cliffs, NJ: Prentice-Hall.

Locke, E. A., & Latham, G. P. 1994. Goal setting theory. In H. F. O'Neil & M. Drillings (Eds.), ***Motivation: Theory and research:*** 13–29. Hillsdale, NJ: Lawrence Erlbaum Associates.

Maidique, M. A., & Zirger, B. J. 1985. The new product learning cycle. ***Research Policy,*** 14: 299–313.

March, J. G. 1976. The technology of foolishness. In J. G. March & J. P. Olsen (Eds.), ***Ambiguity and choice in organizations:*** 69–81. Bergen, Norway: Universitetsforlaget.

March, J. G. 1991. Exploration and exploitation in organizational learning. ***Organization Science,*** 2: 71–87.

March, J. G., & Olsen, J. P. 1976. Organizational learning and the ambiguity of the past. In J. G. March & J. P. Olsen (Eds.), ***Ambiguity and choice in organizations:*** 54–68. Bergen: Universitetsforlaget.

March, J. G., Sproull, L. S., & Tamuz, M. 1991. Learning from samples of one or fewer. ***Organization Science,*** 2: 1–13.

Martin, J. 1992. ***Organizational cultures.*** London: Sage.

McGrath, R.G. 2001. Exploratory learning, innovative capacity, and managerial oversight. ***Academy of Management Journal,*** 44: 118–131.

Meyer, A. D. 1982. Adapting to environmental jolt. ***Administrative Science Quarterly,*** 27: 515–537.

Meyer, M. W., & Zucker, L. G. 1989. ***Permanently failing organizations.*** Newbury Park, CA: Sage.

Mezias, S. J. 1988. Aspiration level effects: An empirical investigation. ***Journal of Economic Behavior and Organization,*** 10: 389–400.

Mezias, S. J., Chen, Y. R., & Murphy, P. R. 2002. Aspiration level adaptation in an American financial services organization: A field study. ***Management Science,*** 48: 1285–1300.

Miller, C. C., & Cardinal, L. B. 1994. Strategic planning and firm performance: A synthesis of more than two decades of research. ***Academy of Management Journal,*** 37: 1649–1665.

Miller, K. D., & Chen, W. 2004. Variable organizational risk preferences: Test of the March-Shapira model. ***Academy of Management Journal,*** 47: 105–115.

Nanus, B. 1992. ***Visionary leadership: Creating a compelling sense of direction for your organization.*** San Francisco: Jossey-Bass.

Natividad, G. 2009. ***Financial slack, organization, and competition in movie distribution.*** Working paper, New York University, New York.

Nohria, N., & Gulati, R. 1996. Is slack good or bad for innovation? ***Academy of Management Journal,*** 39: 1245–1264.

Ocasio, W. 1997. Towards an attention-based view of the firm. ***Strategic Management Journal,*** 18: 187–206.

Ordonez, L. D., Schweitzer, M. E., Galinsky, A. D., & Bazerman, M. H. 2009. Goals gone wild: The systematic side effects of overprescribing goal setting. ***Academy of Management Perspectives,*** 23(1): 6–16.

O'Reilly, C. A. 1982. Variations in decision makers' use of information sources: The impact of quality and accessibility of information. ***Academy of Management Journal,*** 25: 756–771.

Perrow, C. 1979. ***Complex organizations.*** Glenview, IL: Scott Foresman.

Quinn, R. E., & Rohrbaugh, J. 1983. A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. ***Management Science,*** 29: 363–377.

Rahmandad, H. 2008. Effect of delays on complexity of organizational learning. ***Management Science,*** 52: 1297–1312.

Raisch, S., & Birkinshaw, J. 2008. Organizational ambidexterity: Antecedents, outcomes, and moderators. ***Journal of Management,*** 34: 375–409.

Romanelli, E., & Tushman, M. 1994. Organizational transformation as punctuated equilibrium: An empirical test. ***Academy of Management Journal,*** 37: 1141–1166.

Rousseau, D. M. 1997. Organizational behavior in the new organizational era. ***Annual Review of Psychology,*** 48: 515–546.

Schweitzer, M., Ordonez, L., & Douma, B. 2004. Goal setting as a motivator of unethical behavior. ***Academy of Management Journal,*** 47: 422–432.

Seijts, G. H., & Latham, G. P. 2005. Learning versus performance goals: When should each be used? ***Academy of Management Executive,*** 19(1): 124–131.

Shamir, B., House, R. J., & Arthur, M. B. 1993. The motivational effects of charismatic leadership: A self-concept based theory. ***Organization Science,*** 4: 577–594.

Sherman, S. 1995. Stretch goals: The dark side of asking for miracles. ***Fortune,*** November 13: 231–232.

Shoham, A., & Fiegenbaum, A. 2002. Competitive determinants of organizational risk-taking attitude: The role of strategic reference points. ***Management Decision,*** 40(2): 127–141.

Siggelkow, N., & Levinthal, D. A. 2003. Temporarily divide to conquer: Centralized, decentralized, and reintegrated organizational approaches to exploration and adaptation. ***Organization Science,*** 14: 650–669.

Simon, M., Houghton, S. M., & Savelli, 2003. Out of the frying pan . . .? Why small business managers introduce high-risk products. ***Journal of Business Venturing,*** 18: 419–440.

Singh, J. V. 1986. Performance, slack, and risk taking in organizational decision making. ***Academy of Management Journal,*** 29: 562–585.

Sitkin, S. B. 1992. Learning through failure: The strategy of small losses. ***Research in Organizational Behavior,*** 14: 231–266.

Sitkin, S. B., & Pablo, A. L. 1992. Reconceptualizing the determinants of risk behavior. ***Academy of Management Review,*** 17: 9–38.

Sitkin, S. B., Sutcliffe, K. M., & Schroeder, R. G. 1994. Distinguishing control from learning in Total Quality Management: A contingency perspective. ***Academy of Management Review,*** 18: 537–564.

Sitkin, S. B., Sutcliffe, K. M., & Weick, K. E. 1998. Organizational learning. In R. C. Dorf (Ed.), ***The technology management handbook:*** 70–76. Boca Raton, FL: CRC Press and IEEE Press.

Smith, K. G., Locke, E. A., & Barry, D. 1990. Goal setting, planning, and organizational performance: An experimental simulation. ***Organizational Behavior and Human Decision Processes,*** 46: 118–135.

Starbuck, W. H. 1983. Organizations as action generators. ***American Sociological Review,*** 48: 91–102.

Staw, B. M., Sandelands, L. E., & Dutton, J. E. 1981. Threat-rigidity effects in organizational behavior: A multilevel analysis. ***Administrative Science Quarterly,*** 26: 501–524.

Sutcliffe, K. M. 1994. What executives notice: Accurate perceptions in top management teams. ***Academy of Management Journal,*** 37: 1360–1378.

Sutcliffe, K. M., Sitkin, S. B., & Browning, L. D. 2000. Tailoring process management to situational requirements: Beyond the control and exploration dichotomy. In R. Cole & W. R. Scott (Eds.), ***The quality movement and organization theory:*** 315–330. Thousand Oaks, CA: Sage.

Takeuchi, H., Osono, E., & Shimizu, N. 2008. The contradictions that drive Toyota's success. ***Harvard Business Review,*** 86(6): 96–104.

Thompson, K. R., Hochwarter, W. A., & Mathys, N. J. 1997. Stretch targets: What makes them effective? ***Academy of Management Executive,*** 11(3): 48–60.

Tully, S. 1994. Why go for stretch targets? ***Fortune,*** November 14: 145–158.

Uotila, J., Maula, M., Keil, T., & Zahra, S. A. 2009. Exploration, exploitation, and financial performance: Analysis of S&P 500 corporations. ***Strategic Management Journal,*** 30: 221–231.

Vroom, V. H. 1964. ***Work and motivation.*** New York: Wiley.

Weick, K. E. 1979. ***The social psychology of organizing.*** Reading, MA: Addison-Wesley

Weick, K. E. 1984. Small wins: Redefining the scale of social problems. ***American Psychologist,*** 39: 40–49.

Weick, K. E. 1995. ***Sensemaking in organizations.*** Thousand Oaks, CA: Sage.

Weick, K. E., Sutcliffe, K.M., & Obstfeld, D. 2005. Organizing and the process of sensemaking. ***Organization Science,*** 16: 409–421.

Winter, S. G. 2000. The satisficing principle in capability learning. ***Strategic Management Journal,*** 21: 981–996.

Winters, D., & Latham, G. P. 1996. The effect of learning versus outcome goals on a simple versus a complex task. ***Group & Organization Management,*** 21: 236–250.

Wiseman, R. W., & Catanach, A. H. 1997. A longitudinal disaggregation of operational risk under changing regulations: Evidence from the savings and loan industry. ***Academy of Management Journal,*** 40: 799–830.

Woodman, R. W., Sawyer, J. E., & Griffin, R. W. 1993. Toward a theory of organizational creativity. ***Academy of Management Review,*** 18: 293–321.

Young, G., Smith, K., & Grimm, C. 1996. "Austrian" and industrial organization perspectives on firm-level competitive activity and performance. ***Organization Science,*** 7: 243–254.

Sim B. Sitkin (sim.sitkin@duke.edu) is professor of management, Staudenmeyer Research Fellow, and faculty director of the Fuqua/Coach K Center on Leadership and Ethics, Fuqua School of Business, Duke University. He received his Ph.D. from Stanford University. His research concerns the influence of leadership and control systems on organizational and individual change, innovation, trust, learning, risk taking, and accountability.

Kelly E. See (ksee@stern.nyu.edu) is assistant professor of management and organizations in the Stern School of Business at New York University. She received her Ph.D. in management from Duke University. Her research focuses on the role of learning in judgment under uncertainty and on how factors such as fairness, power, and goals affect organizational decision processes.

C. Chet Miller (chet.miller@bauer.uh.edu) is the Bauer Professor of Organizational Studies at the C. T. Bauer College of Business, University of Houston. He earned his Ph.D. from the University of Texas. His research focuses on upper-echelon leaders, strategic decision processes, and management systems.

Michael W. Lawless (lawless@umd.edu) is Tyser Teaching Fellow at the R. H. Smith School of Business, University of Maryland. He earned his Ph.D. from the Anderson Graduate School of Management, UCLA. His research takes an evolutionary perspective on technology and innovation management, strategy implementation, and entrepreneurship and new venture financing.

Andrew M. Carton (amc42@duke.edu) will be an assistant professor of management and organization in the Smeal College of Business at The Pennsylvania State University beginning in Fall 2011. He received his Ph.D. from Duke University's Fuqua School of Business. His research focuses on how leaders adapt to the increasingly complex nature of goal systems and intergroup relations in organizations.