

An Ecological Perspective on Leadership Theory, Research, and Practice

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Current theories of leadership are based mainly on the industrial paradigm emphasizing the preeminence of positional leaders and the machine-like qualities of organizations. Evolutionary and attributional biases tend to reinforce the industrial paradigm. The authors propose an ecological theory of leadership that makes 4 important assertions: (a) Effective leadership processes involve temporary resolutions of a tension between the traditional industrial approach and the neglected ecological approach; (b) specific leaders are less important than they appear because the ecological context is more important than what leaders decide to do; (c) organizations are more adaptive when there is a diversity of genuine input into decision-making processes; and (d) leadership itself is an emergent process arising from the human interactions that make up the organization.

The history of leadership studies has generally been written from the perspective of what Rost (1997) called the industrial paradigm, a perspective that emphasizes the preeminence of leaders and the machine-like qualities of organizations. Our main contention is that the dominance of the traditional industrial paradigm in leadership research and practice is not healthy. Instead, we see leadership processes as involving a tension between the traditional *industrial* approach and the more neglected *ecological* approach.

Ecology and Leadership

In the context of biology, "ecology" is the study of the habitats in which organisms live. Many psychologists have applied an ecological framework to psychology. Among the most prominent have been Bronfenbrenner (1979, 1986) and James G. Kelly (1968, 1979). We are particularly indebted to Kelly for applying tra-

ditional ecological principles to social settings (e.g., Kelly, Ryan, Altman, & Stelzner, 2000). Borrowing from Kelly's ecological paradigm, Allen, Stelzner, and Wielkiewicz (1998) elaborated on four ecological principles that are critical to understanding leadership and organizations.

Interdependence

Both biological and social systems consist of interdependent components that have bidirectional influences on each other. The networks that generate leadership are interdependent systems consisting of families, organizations, subgroups within organizations, communities, the natural environment, the economy, and so on. Any attempt to understand the complexities of an organization by focusing on its leader is incomplete. We cannot understand leadership in isolation from the rest of the organization or larger environment.

Open Systems and Feedback Loops

Any organization is completely dependent on inflows of material, information, and other resources. These organizational systems are, themselves, part of larger open systems (economic, political, social, and environmental). Treating organizations as closed systems does not reflect the human enterprise that is the organization (Katz & Kahn, 1978). Furthermore,

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attempts to cut off various feedback loops place the organization at risk because its ability to adapt declines. If we are to understand leadership, we must understand it from an open systems perspective, including the interdependent nature of those systems.

Cycling of Resources

Biological systems make multiple use of resources. Waste material from one organism becomes nutrients for another in a sustainable cycle. Similarly, leadership processes need to take advantage of the multitude of talent or capacities that exist within the organization. As a result, leadership is developed on an ongoing, long-term basis, rejecting the notion that positional leaders should dominate leadership processes. This does not preclude one individual initiating key actions at a particular point in time, but it does suggest that demanding or expecting a single individual to act as *the leadership* is unrealistic and inefficient.

Adaptation

Biological systems are adaptive through evolutionary processes. A change in climate, for example, causes characteristics adaptive to the change to become more dominant among the organisms in the system. The greater the adaptive learning that takes place within an organizational ecosystem, the greater the ability to respond to the adaptive challenges that the organization, community, or larger society encounters. Structures and processes for learning must be developed throughout an organization so that the system is capable of adaptation to changes in technology, social structures, or economies. This is similar to what Senge (1990) and others (Levitt & March, 1988) have referred to as a “learning organization.”

Prologue

Most leadership theories focus on individuals in positions of leadership (e.g., presidents, members of Congress, CEOs, directors, executives, managers, military officers, and chairpersons). We use the term *positional leader* to describe such individuals. According to many theoretical perspectives (e.g., Boal & Hooijberg, 2001; Chemers, 1997; Zaccaro, 2001),

positional leaders are *directly* responsible for organizational success and adaptation. This represents the industrial side of the tension. The ecological side of the tension sees organizations as complex *systems* in which an infinite number of variables, including positional leader behaviors, influence adaptation. This ecological–industrial tension exists in every organization. An implication is that organizations incorporating ecological principles into leadership processes will enhance their adaptive characteristics. We discuss why another theory of leadership is needed and then describe a theory of leadership based on ecological principles.

Leadership Theory and Practice: A Strong Bias Favoring Positional Leaders?

One reason for adding to the literature on leadership is to shift the focus *away* from positional leaders. Although positional leaders may profoundly influence organizations, the ecological context also needs to be considered to allow a better understanding of the positional leader’s influence. Attributional processes and evolutionary influences create a bias to view leaders as having an exaggerated role in organizational events. This tendency has both theoretical and practical implications for leadership studies.

Attribution Processes, Scapegoating, and Self-Fulfilling Prophecies

Observers from Western cultures seeking to explain the behavior of another person are likely to *overestimate* the importance of personality factors and *underestimate* the importance of situational factors (Bond & Smith, 1996; Choi, Nisbett, & Norenzayan, 1999; Kelley, 1973), a tendency called the fundamental attribution error (Bond & Smith, 1996; Harvey & Weary, 1984). The many contexts in which positional leaders can be observed (e.g., speeches, media events, and public appearances) should engender a tendency to attribute their behavior to an internal characteristic, leadership, as opposed to the situational context and organizational history. Many leadership theories have developed around this idea.

Meindl (1995) argued that leadership is a “social construction” and that positional leaders manipulate the context and constructions of

their followers (p. 333). The goal of positional leaders is not to control followers' behavior but to create the "right impression" or "spin" (e.g., Salancik & Meindl, 1984). The processes that lead to a social construction of leadership, in turn, lead to commitment to the positional leader. Similar ideas are expressed in Kerr and Jermier's "substitutes for leadership" theory (Kerr & Jermier, 1978; Podsakoff & MacKenzie, 1994), "implicit leadership theory" (Gioia & Sims, 1985; Hall & Lord, 1995), the attribution theory of leadership (McElroy, 1982; Robbins, 1998), the "romance" of leadership (Shamir, 1992), and empirical studies (Kerr & Jermier, 1978; Kirkpatrick & Locke, 1996; Podsakoff, MacKenzie, & Bommer, 1996; Staw & Epstein, 2000). As might be expected, people also have a tendency to attribute organizational performance to leadership (Meindl, Ehrlich, & Dukerich, 1985; Pfeffer, 1977; Phillips & Lord, 1981; Pillai & Meindl, 1998). Thus, the fundamental attribution error is a likely contributor to a tendency to attribute organizational outcomes to "leadership" and the actions of positional leaders. These attribution errors may create difficulty in measuring the causal influences of organizational leaders. One must also question whether leadership researchers and scholars have themselves been biased in their conclusions or approach to leadership.

Positional leaders are often given credit for organizational success, so it is consistent to blame them for organizational failures via scapegoating (Boeker, 1992; Cameron, Kim, & Whetten, 1987). Scapegoating reinforces the attribution of causal responsibility for success and failure to positional leaders. Self-fulfilling prophecies also reinforce these attributions (Hilton & von Hippel, 1996; Macrae & Bodenhausen, 2000). A self-fulfilling prophecy is a prediction about the behavior of an individual that tends to be confirmed and reinforced by the behavior of those around him or her. If a person is labeled a "leader," the behavior of others in the organization or group may adjust to confirm this stereotype by reinforcing and fostering the positional leader's role, whereas other members conform to the expectations of the person in the leadership role. These mutually dependent behaviors reinforce the stereotype of the typical leader as one who engages in these behaviors. On a larger scale, the degree to which the media and organization members are likely to focus on

the words and actions of positional leaders reinforces the stereotype that these individuals are actually responsible for organizational accomplishments.

Gemmill and Oakley (1992) argued that leadership is a "social myth" that provides individuals with a source of blame for societal problems and a sense of security and protection in a frightening, unpredictable, and uncontrollable world. Furthermore, our anxieties and fears are projected onto positional leaders, which causes us to withdraw from our own responsibilities for making the world a better place. They called this process "deskilling" or taking away our personal skills and ability to influence the world. Misattribution, scapegoating, and stereotyping often elevate positional leaders to a status that goes beyond their ability to influence and control events, with two important consequences. First, positional leaders who reinforce this perspective will be able to enhance their "charismatic" characteristics and influence subordinates or followers to adopt their vision for the organization. If these leaders lack luck or insight, "groupthink" and decisions based on incomplete information may take the organization down a self-destructive, unsustainable path. The second consequence is that positional leaders will experience difficulty influencing a greater proportion of members to participate in leadership processes because other members have been "deskilled" by these attributional biases.

Biases Created by Our Evolutionary History

Our evolutionary history may also contribute toward an industrial bias regarding leadership. Humans evolved during the Pleistocene era as hunters and gatherers (Gaulin & McBurney, 2004). This evolutionary history leaves humans with many characteristics that are not completely functional in the modern era, such as the male tendency toward dominance and aggression (Mealey, 2000). These evolutionary factors may also influence our perspective of leadership. Stereotypes of positional leaders as being masculine, aggressive, rational, self-confident, competitive, dominant, task oriented, intelligent, and independent seem to describe an expert Pleistocene hunter. Males who exhibit the trappings of a successful hunter are likely to be

rewarded with leadership positions and their status symbols and with greater reproductive success (Mealey, 2000). Thus, there may be an evolutionary bias to defer “leadership” to individuals with such characteristics because they were associated with hunter-gatherer adaptedness.

Masters (1989) asked why individuals even extend social cooperation to large groups, organizations, and governments. Large-scale cooperative communities are vulnerable to “free riders” or “hitchhikers” who do not contribute a fair share to the common good. When we support such individuals through our organizations, we are undermining our own evolutionary fitness by expending resources that benefit genetically unrelated people. Masters argued that bureaucracies prevent individuals from entering into a commons tragedy by regulating resources. Thus, modern organizations may have evolved in a context that favored bureaucracy and hierarchy because an organization in which all members compete in a free-for-all for its resources would quickly disintegrate. The function of the bureaucracy is to both reward individuals and distribute organizational resources in a way that makes the organization more sustainable, a tendency that favors the industrial side of the ecological–industrial tension. Thus, even though most organizations have a fair share of “hitchhikers,” nonhitchhiking members may still experience a net benefit because organizational resources are not used beyond their regenerative capacity and the organization is better able to compete with other large organizations (Hedrick-Wong, 1998).

Cosmides and Tooby (1992) argued that humans have evolved content-specific cognitive mechanisms for detecting inequities or cheaters in social interactions involving exchanges of resources. One of the key variables in such exchanges is variance in the food supply. If variance is high, some individuals are likely to have stretches when they cannot find or hunt sufficient food, and thus some form of communal sharing is likely. If variance is low and resources are abundant, more authoritarian and hierarchical societies are likely to emerge because survival is not so dependent on equitable social exchanges. Industrialized societies, characterized by an abundance of resources, would reinforce individualistic tendencies rather than collectivism and lead to hierarchical organiza-

tions in which individuals tend to hoard their individual resources.

Our inherited tendency to behave as resource-hoarding individualists when resources are abundant may be taking us in an unsustainable direction. For example, it is common knowledge that the oil supplies on which our economy is so dependent may be peaking, which will lead to a period of declining availability and intense competition (Klare, 2004). Effects of industrialization may also lead to shortages in terms of clean air, clean water, and a healthy environment (Oskamp, 2000). Pressures from competing organizations, although always a concern for organizational executives, may not have the psychological impact of triggering more cooperative mechanisms because no one’s personal resources are directly threatened. In fact, top-level executives are often greatly rewarded, even in the face of organizational failure. We believe that the problems facing organizations and society have become exceedingly complex and have existed over long time periods, such that our hunter-gatherer adaptedness is not as functional as it once was. Instead, we must apply more of our evolved cognitive ability to understand and cope with problems. Hedrick-Wong (1998) concluded that evolutionary ideas must be accounted for in the solution to our emerging environmental crisis. Appeals to individuals must be based on the original motives for the evolution of nation-states: preservation of one’s descendants from the ravages of a crippled environment or other organizations. This kind of appeal creates a picture of limited resources that would tend to be associated with more cooperative behavior. If we continue to compete for resources at both the individual and organizational levels, we may enter into a series of commons tragedies that we do not identify because the perception of abundant resources remains strong.

Thus, our evolutionary bias seems to direct us toward the industrial perspective for several reasons. First, the dominance and aggression (but not too much; Dabbs, 1992) displayed by positional leaders is an inherited adaptation. We can also speculate that a certain degree of cooperation and deference toward successful leaders of hunting and gathering groups was adaptive because recognizing success in these endeavors would enhance reproductive potential and survival. Second, the apparent and illusory abun-

dance of resources in Western cultures tends to favor hierarchy and accumulation of resources over cooperation. Third, the evolution of groups also encourages competition because the groups evolved in a context of providing protection from other groups. These evolved characteristics seem to be predominant in organizations today and contribute to the embeddedness of the industrial perspective in our views of organizations.

The Ecology of Leadership

Rost (1993, 1997) concluded that the paradigm for leadership studies in the 20th century was the *individual*. Leadership was defined as the activities of great men and women. Rost labeled this widely accepted approach the “industrial paradigm” and then redefined leadership around the paradigm of relationship. He stated that leadership is “an influence relationship among leaders and collaborators who intend real changes that reflect their mutual purposes” (Rost, 1997, p. 11). Congruent with the ecological perspective, Rost’s definition emphasizes a collaborative relationship instead of a unidirectional influence process from leader to follower. Our perspective is that a continuing tension between the industrial and ecological paradigms exists.

The ecological paradigm is based on ecological principles (Bronfenbrenner, 1979, 1979; Capra, 1996; Colarelli, 1998; Johnson, 2001; Katz & Kahn, 1978; Kelly, 1968, 1979; Mathews, White, & Long, 1999; J. G. Miller, 1978; Novelli & Taylor, 1993). The theory suggests that if we are to understand leadership, we must do so in the context of *ecological systems*. The theory was first described by Allen et al. (1998); the six premises of our current version are discussed in the sections to follow.

Premise 1

According to our first premise, leadership is an emergent process. Although cognitive and evolved biases may make it *appear* as though positional leaders are directing and controlling organizational adaptation, it is far too limiting to define leadership as the activities of positional leaders. Our definition of leadership is that of an *emergent process*; that is, it emerges from the interactions and actions of individuals

within an ecological system. An empirical implication is that correlations between positional leader behavior and organizational performance should always be moderated by contextual variables (e.g., Haleblian & Finkelstein, 1993). Others who have implicitly or explicitly viewed leadership as a process include R. A. Barker (1997); Day (2001); Kelly et al. (2000); King (1990); Salancik, Calder, Rowland, Leblebici, and Conway (1975); and Yukl (1989, 2002). A process view of leadership encourages a focus on decision-making processes and suggests that a key issue is to determine to what extent the ability to influence decisions is distributed among organization members.

However, we are going beyond a simple process view of leadership to state that leadership is actually an *emergent* process. Emergence is defined as properties of a system that “arise from the interactions and relationships among the parts” (Capra, 1996, p. 29). A good example of such a process is intelligence, which emerges from the interactions among the tissues, cells, and structures that make up the human brain. When we define leadership as an emergent process, we mean that leadership does not consist of the actions of individuals. Instead, leadership emerges from the interactions among individuals. Then this emergent process is translated into adaptive decisions and executive processes. The emergent processes that result in either improvements or declines in the adaptiveness of the organization are defined as its leadership. Adaptiveness can then be operationalized in terms of profitability, growth, competitiveness, stock price, efficiency, sustainability, program effectiveness, and other concepts. The key is to focus on the degree to which the organization is able to adapt to changes in the surrounding ecology.

This definition does not deny the importance of positional leaders. In fact, positional leaders can be a beneficial focus of organizational studies. In contrast to more traditional views, however, we argue that the focus should not be on positional leader decisions and their effects but on the *way* that decisions emerge from the interactions of positional leaders with all other members of the organization. Two key markers are the existence of participatory structures and the genuineness of participation in these processes by both positional leaders and other organization members. We would also expect to

see that measures reflecting member development would relate to the adaptiveness of the organization.

A positional leader who has control over the distribution of organizational resources has considerable control over the adaptability of the organization. Yet, even the most powerful positional leader is completely dependent on other organization members to carry out decisions and on the surrounding ecology to respond in the way that the leader predicts. Ecological theory predicts that the long-term adaptability of an organization will be associated with finding an appropriate balance between vesting power and control in the positional leader and having a diverse sample of organization members influence leadership processes. Thus, organizational performance should be related to member as well as positional leader behavior (e.g., Koys, 2001).

In an ecological context, the role of positional leaders is to assist organizations in developing processes that make them more adaptive. According to Schein (1992), the role of the leader is to develop an intimate understanding of the organizational culture and then use various mechanisms to promote needed change. Colarelli (1998, 2003), writing from an evolutionary perspective, suggested that organizations are "loosely coupled" and that they are an emergent property of their specific components. Relationships among the parts are "loose" or weakly associated, so it is not possible to accurately predict the impact of a particular intervention or change. The implication is that organizations should be structured for maximum flexibility and adaptiveness rather than to accomplish a specific purpose. Then organization learning will occur as various social technologies and procedures are discarded or retained as a consequence of their functionality. An ecological perspective encourages positional leaders to assist in the emergence of leadership rather than creating change through executive orders and decisions.

Premise 2

Premise 2 is that the cognitive task of adaptive organization members is to optimize the tension between the "old school"/industrial perspective and the "new school"/ecological perspective. This premise argues that a balance

between the industrial perspective and the ecological perspective is necessary for effective adaptation. Kelly et al. (2000) stated that too much structure can inhibit adaptation, whereas a focus on "process" to the exclusion of structure or hierarchy can cause disintegration. Wielkiewicz (2000, 2002) developed a two-factor measure corresponding to the ecological and industrial perspectives that has the potential to assist in mapping the underlying empirical relationships. The more skill a positional leader brings to the task of balancing the *tension* between industrial and ecological processes, which implies that both the industrial and ecological dimensions should be strong, the more effective the organization will be. If either perspective guides leadership processes at the expense of the other perspective, the organization is more likely to disintegrate.

Similar ideas are embodied in the "competing values model" (Buenger, Daft, Conlon, & Austin, 1996; Quinn, 1988; Quinn & Rohrbaugh, 1983). The basic principle is that the more an organization adheres to one side of an organizational value while excluding the other side, the greater the danger that the organization will fail to adapt. According to Quinn, organizational failure often results from the inability to "balance" competing values, a task made extremely complex by the fact that the balance point changes according to the developmental stage of the organization. Dedicated pursuit of only one side of the competing values eventually becomes a failing strategy as the context changes. Many contrasting sets of competing values appear in the leadership literature: transactional versus transformational leadership (Pearce & Sims, 2002), democratic versus autocratic leadership (Gastil, 1994), loose versus tight styles of positional leadership (Sagie, 1997), organic versus mechanistic systems (Courtright, Fairhurst, & Rogers, 1989), exploration versus exploitation (March, 1991), individual versus relationship orientation (Rost, 1997), open versus closed leadership processes (Allen et al., 1998), and the paradoxical roles of organizational cultures as both stabilizing forces and forces for change (Schein, 1992).

A study conducted by Eisenhardt (1989) nicely illustrates the underlying principles. She carefully studied decision-making processes in eight microcomputer firms. One important finding was that consideration of multiple alterna-

tives was faster and more adaptive than making a yes or no decision regarding a single alternative. Another important component of quick and effective decision making was the way in which conflict was handled. The most successful firms had a two-stage process of decision making. Initially, there was an attempt to reach consensus through discussion. Then, if consensus could not be reached, an executive decision was made. Poorly performing companies tended to pursue consensus at the cost of timely decisions. Another way to frame this idea is that it involves a tension between the competing values of process and decision.

Premise 3

Our third premise is that leadership occurs in a web of interdependent social and biological systems. According to Heifetz (1994; Sparks, 2002), organizations face two kinds of problems: those that can be solved with “authoritative expertise” and *adaptive challenges*. Adaptive challenges require fundamental shifts in organizational expertise and the development of new, untried, experimental ways of adapting to a fundamentally changing environment. These concepts parallel the industrial–ecological tension. Solving problems with “authoritative expertise” represents the industrial side of the tension, whereas adaptive challenges require more emphasis on an ecological approach. Allen et al. (1998) identified five universal adaptive challenges that frame the context of organizational adaptation: (a) the need to develop an increasingly global perspective in life and work (Mays, Rubin, Sabourin, & Walker, 1996), (b) the need to live within the limits of our natural environment (Cairns, 1998; Oskamp, 2000), (c) the need to convert the increasing flow of new information into useful knowledge (Wurman, 1989), (d) coping with scientific and technological advances in a way that enhances rather than destroys humanity (Kaku, 1997), and (e) coping with a fast-changing and fluid social ecology (Clark, 1985). In addition to these universal adaptive challenges, organizations must also adapt to local adaptive challenges including local and national regulation, competition, economic factors, finding trained workers, and so on.

The implications of these adaptive challenges for leadership theory are profound. These uni-

versal and local adaptive challenges are interactive, so it is difficult to consider any one in isolation from the others. For example, the increasing availability and volume of information applies to each of the other adaptive challenges, in turn increasing the difficulty of understanding their implications. Each adaptive challenge tends to multiply the complexity and uncertainty generated by the other adaptive challenges. Leadership theorizing needs to provide strategies that enable leaders and others to respond flexibly to this dynamic environment. This requires developing a deeper understanding of the interdependent systems context within which organizations exist. Practically, this means that analysis of organization issues should reflect the ability to deal critically with complex events that have multiple causes and effects (e.g., Stanovich, 2001). The complexity of the ecological context creates a tension between devoting resources to thoroughly understanding this context and being more action oriented, which means making timely and effective decisions based on an admittedly incomplete understanding of the context. This idea is elaborated in Premise 4.

Premise 4

Premise 4 posits that adaptability is determined by the richness and variability of feedback loops allowed to influence leadership processes. Customer satisfaction is an excellent organizational example of a feedback loop. When incoming information shows that customer satisfaction has declined, organizations usually respond with changes in products or services leading to improved customer feedback. Ignoring customer feedback can negatively affect an organization if customers have choices of other organizations from which to obtain the same products or services. If competition is absent, it may take longer for feedback to develop, but new sources of competition could emerge. Feedback loops are the mechanism through which adaptation occurs. An organization that responds to its relevant feedback loops will be the most adaptive.

How does an organization identify “relevant” feedback loops? There are no guaranteed routes to success. Too much dependence on positional leaders can cause the organization to focus on a limited number of feedback loops, thereby

missing a key feedback loop or adaptive challenge such as developing technology with competitive implications. By themselves, positional leaders may be unable to understand the implications of a new technology. Instead, individuals with relevant knowledge may be at any level of the organization. Furthermore, the knowledge may not even be work related. It may come from a hobby or special interest. The key is to see the industrial–ecological tension that such knowledge creates. Too much attention to the ecological complexity of an adaptive challenge may prevent the organization from making a decision and taking action. Conversely, if the amount of information and knowledge brought to bear on the adaptive challenge is too limited, the organization risks going forward with an inadequate understanding of the problem, which may lead to ineffective decisions and a decline in adaptiveness. The *tension* must remain active.

Premise 4 predicts that empowering employees increases organizational adaptation (e.g., Kirkman & Rosen, 1999), with the caveat that empowerment may not be effective in all cultures (Robert, Probst, Martocchio, Drasgow, & Lawler, 2000). Forms of empowerment such as “high involvement work processes” (Vandenberg, Richardson, & Eastman, 1999), organizational citizenship (Podsakoff, MacKenzie, Paine, & Bachrach, 2000; Sivadas & Dwyer, 2000; Tjosvold & Poon, 1998), and democratic, shared, or participative leadership styles (Gastil, 1994; Hambrick & D’Aveni, 1992; Pearce & Sims, 2002; Staw, Sandelands, & Dutton, 1981; Van de Ven, Hudson, & Schroeder, 1984; Wagnous, Reichers, & Austin, 2000) would all encourage the broadest contributions to leadership processes, and they have been empirically demonstrated to make positive contributions to organizational adaptiveness. In sum, there is ample evidence that all organization members can beneficially contribute to identifying relevant organizational feedback loops.

In contrast, constricting feedback loops, which would be associated with overemphasis of the industrial side of the tension, interferes with adaptation. V. I. Barker and Mone (1998) studied the relationship of the “mechanistic shift” to several organizational variables in 29 manufacturing firms in decline as a result of problems unrelated to economic difficulties in a specific industry. The mechanistic shift is a ten-

dency for organizations undergoing decline to become more organizationally rigid, with centralization of organizational decisions, increasing use of rules and formalized procedures, decreased meetings and communication across the organization, and less time spent by managers in analyzing key data and decisions (Arogyaswamy, Barker, & Yasai-Ardekani, 1995; V. I. Barker & Mone, 1998; Staw et al., 1981). Barker and Mone (1998) described the potential impact of the mechanistic shift as follows:

Mechanistic firms may have more difficulty changing their strategic orientation in response to decline, as authority is consolidated with people who interact less directly with the environment, top managers receive or develop fewer alternatives due to less vertical communication, and formalization of procedures blocks the generation of innovative solutions. (p. 1228)

Barker and Mone’s (1998) main finding was that as the degree of mechanistic shift increased, the probability of actions likely to bring the company to a successful turnaround declined. A more detailed analysis revealed that the most powerful predictors of failure in strategic reorientation were more centralized and less participative decision processes. Jennings and Seaman (1994) also demonstrated that the organic structure is associated with superior adaptation to environmental change. Thus, restricted flow of communication and overdependence on hierarchical leadership, both characteristic of the industrial side of the tension, may inhibit adaptability.

Premise 4 implies that group decision processes are advantageous for an organization because they maximize the number of feedback loops influencing leadership processes. However, some caution is necessary to avoid unfavorable processes such as groupthink (Janis, 1982). Lerner and Tetlock (1999) recently reviewed related literature on outcome versus process accountability. Process accountability means having to justify the *process* of making a decision, as opposed to allowing the *outcome* to be the measure of accountability. Outcome accountability has detrimental effects, such as overcommitment to a strategy and poorer performance, whereas process accountability may attenuate problems such as stereotyping, groupthink, social loafing in group tasks, and concurrence seeking in group discussions and ensure that the information brought to bear on a problem or issue is diverse and representative of

all perspectives. Other ways of improving group processes include the following: (a) use of “methodical decision-making procedures” (Moorhead, Neck, & West, 1998, p. 346), open, participative leadership processes, and interaction with the environment outside the decision-making team’s normal boundaries via membership turnover or having members be on several teams (Moorhead et al., 1998); (b) devil’s advocacy, introducing information about the base rate of success, searching for examples of failure (as opposed to resting arguments on small numbers of successful cases), and discussing why key variables may be out of the control of the team (Houghton, Simon, Aquino, & Goldberg, 2000); (c) following brainstorming protocols and having group members brainstorm in private before the group meets to evaluate ideas (McCauley, 1998); and (d) having in place positional leaders who encourage disagreement and participation, emphasize that reaching a wise decision is important, encourage divergent opinions, and avoid strongly stating an opinion at the beginning of the process (Z. Chen, Lawson, Gordon, & McIntosh, 1996; Leana, 1985; Neck & Moorhead, 1995; Schafer & Crichlow, 1996).

A key principle of an ecological theory of leadership concerns the importance of diversity and feedback loops. As Capra (1996) has stated, “A diverse community will be able to survive and reorganize itself. . . . In other words, the more complex its pattern of interconnections, the more resilient it will be” (p. 303). Thus, a key to effective organizational action is to recognize that any decision is made in the context of many systems, such as competing organizations, the environment, the economy, local and world communities, and families, all interacting in highly complex, interdependent ways. Organizations that engage as many feedback loops as possible from these systems into leadership processes are most likely to generate effective responses to their challenges. This requires an organizational structure that creates multiple opportunities for organization members to influence leadership processes. This must be combined with awareness that too much emphasis on process (the ecological side of the tension) can interfere with timely and effective decision making. Thus, it is important to retain an active tension between process and decision making.

Premise 5

According to Premise 5, a tension exists between a need for human and social diversity within the organization and single-minded pursuit of common goals and objectives. *Diverse* groups of organization members contribute to organizational adaptability (Bantel & Jackson, 1989; Krishnan, Miller, & Judge, 1997; Maidalton, 1993; Nemeth, 1995; Ng & Van Dyne, 2001; Paulus, 2000). This idea comes directly from ecological principles (Capra, 1996; Kling-sporn, 1973). The more diversity within a system, the more adaptable it will be, because variability enhances the ability of the system to generate a wide range of adaptive strategies. One implication is that positional leaders need some degree of belief in the idea that they are essentially equal to other members. The idea that they are a talented and elite corps deserving of privilege is inappropriate. Such views lead to mistreatment of members, loss of focus on their development, and their exclusion from participation in leadership processes. Gray, Connor, and Decatur (1994) developed a measure of belief in equality that appears to have validity in organizational contexts. Higher beliefs in equality should be associated with a host of positive organizational outcomes because such beliefs encourage broad participation in leadership processes.

When individuals perceive that they are supported by the organization, they tend to reciprocate with increased commitment and performance (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Lynch, Eisenberger, & Armeli, 1999), which enhances the diversity of ideas applied to leadership processes. D. Miller and Lee (2001) performed an interesting study of this phenomenon in a sample of Korean companies. They began with the argument that “assiduous” environmental scanning should be useful for many companies because it could reveal “important customer needs, market threats and opportunities, as well as areas of strategy requiring improvement” (p. 168). They hypothesized that the *quality* of scanning activity would be related to the degree of genuine commitment shown toward employees, which would “minimize parochial politics and facilitate effective collaboration” (p. 170). Consistent with these predictions, they found that the effects of information processing, collaboration,

and initiative on financial performance were enhanced by genuine commitment to employees. This effect was strongest in uncertain environments. An interesting empirical question is whether these results generalize to companies in other countries, particularly the United States.

Elron (1997) demonstrated that cultural heterogeneity among top management teams from international branches of multinational corporations enhanced objective organizational performance. This occurred despite evidence that cultural heterogeneity was associated with higher issue-based conflict within the team, which itself was related to the perception that team performance was weakened by such conflict. However, the overall effect of cultural heterogeneity on objective performance was positive. The inference was that cultural heterogeneity enabled the teams to integrate both local and global knowledge to enhance performance. The perception that issue-based conflict had a negative effect on team performance was not surprising and suggested a need for training in conflict management and resolution (e.g., Robbins, 2003, p. 92). Elron also suggested that increased cultural diversity would be an asset to teams at all organizational levels. Hambrick, Cho, and Chen (1996) found that top management team diversity contributed to profits and market share of airline companies. There is also substantial empirical evidence that gender diversity enhances organizational performance (Bass & Avolio, 1994; Neubert, 1999). Finally, the effects of diversity appear to be enhanced when the organization has a collectivistic as opposed to individualist culture (Chatman, Polzer, Barsade, & Neale, 1998).

We have emphasized the ecological side of the tension because we believe that leadership studies and practices have been dominated by the industrial perspective. An organization's human resources generate the strategies needed for adaptation to a challenging, rapidly changing, and sometimes hostile environment. The more diversity in an organization's human resources, the more able the organization will be to generate adaptive strategies. However, with definite limits on the number of such strategies that can actually be implemented and time constraints on developing strategies, the industrial side of the tension must also be acknowledged so that the organization can focus personnel and resources on strategies it believes will increase

adaptation. A homogeneous organizational culture is likely to keep the organization focused on successful adaptive strategies, but at the expense of failing to detect environmental shifts to which the organization needs to adjust. Strong hierarchical structures, with most decision powers vested in positional leaders, may dramatically decrease the diversity of thinking applied to adaptive challenges. Furthermore, hierarchical organizational structures are likely to contribute to "organizational silence," which can be demoralizing and detrimental to the organization (Morrison & Milliken, 2000). Maintaining the diversity needed for success is a critical function of positional leaders.

Premise 6

Finally, Premise 6 is that leadership processes need to be evaluated in terms of how adaptively an organization responds to its long-term challenges. Hannan and Freeman (1984, 1989) used evolutionary principles to describe organizational adaptation. They argued that the inertial forces to which organizations are subject prevents them from making the radical changes needed for adapting to environmental threats. High levels of structural inertia are the result of sunk costs, relationships with other organizations, a need for accountability and reliability, and legal barriers, all working against radical change. Starbuck (1983) reached a similar conclusion, arguing that organizations often become locked into "action patterns" that prevent successful adaptation to the environment. Thus, most organizations are faced with conditions that favor inertia, which, in turn, causes them to be resistant to change. When the environment changes radically, these organizations are more likely to fail and be replaced.

Christensen (2000) showed that even well-managed firms could fail in the face of what he called "disruptive technology." These technologies initially perform *worse* than existing technologies, but they also have a characteristic desired by some segment of the market. Christensen found that typical tools of good management, such as better planning, harder work, and being customer driven, all tended to make things *worse* for larger companies. They could not identify good business reasons to invest in disruptive technologies because they could not envision a market for them among their current

customers. An ecological perspective suggests that organizations with mechanisms to detect the possibility of such disruptive trends are more likely to successfully adapt. In contrast, an organization devoting all of its resources to exploring the environment for such trends may fail to ever execute its adaptive strategies. Thus, a tension between these two extremes remains the only constant for an adaptive organization.

We chose the word “ecological” to describe this theory both for its ability to convey a set of important principles *and* its implications for our environmental future. One of the most important feedback loops that is being suppressed and ignored concerns our environment. Organizations that ignore the environmental feedback loops may be undermining their own adaptability and that of the larger communities to which we all belong (Oskamp, 2000). We rarely see the immediate and direct effects of unsustainable behaviors on our environment. These effects accumulate over time, and concerns about them can be easily outweighed by short-term considerations such as the drive for profit (Bakan, 2004). Adaptability requires that organizations develop sensitivity to feedback loops that provide information about the environmental sustainability of their practices.

Andersson and Bateman (2000) found that frequent environmental scanning (i.e., searching for relevant feedback loops) was an important component of moving companies toward addressing environmental issues. They also found that the nature of the organization, particularly whether the organization had a strong “environmental paradigm,” was associated with the success of environmental initiatives. Qualitative analysis indicated that moving an organization toward addressing environmental issues was most successful when financial advantages were emphasized. This is congruent with McWilliams and Siegel’s (2001) theory of corporate social responsibility. We must learn how to identify and activate the tensions that enable organizations to critically examine their impact on humanity’s long-term environmental future. At the present time, there seems to be an absence of such a tension in many public corporations (Bakan, 2004; Cairns, 1998; Simon, 2000; Terry, 1995). An ecological perspective of leadership predicts that such actions can generate long-term feedback loops that can eventually harm the organization. Thus, more organi-

zations need to be responding to the neglected ecological side of the industrial–ecological tension. The absence of a dynamic tension related to environmental and other issues will leave far too many organizations without the knowledge and diversity of ideas they need to respond to the adaptive challenges of the present and future.

Leadership Theory for the Future

Dunphy (1996) suggested five criteria for evaluating a theory of organizational change: a basic organizational metaphor, a model for understanding organizational processes, an ideal model of the effective organization, a theory of intervention, and a definition of the change agent’s role. A review of ecological theory using these criteria summarizes its salient characteristics.

The basic organizational metaphor is ecological systems. However, we do not say that organizations are *like* ecological systems; we say they *are* ecological systems. The internal structure of an organization is a system, and any organization interacts with other systems as well. An ecological model allows one to clearly see the complexity of the systems and the adaptive challenges to which each organization must respond. The ecological model also stands as a reminder of the environmental challenges faced by the entire human race and the need for each organization to effectively face those challenges.

Leadership is an *emergent* process that can be detached from positional leaders. Our model for understanding organizational processes is to focus on the processes involved in adapting to the ecosystem. These processes emerge from the interactions among members of the organization. Thus, the focus is on the style and substance of these interactions throughout the organization instead of the personality and actions of positional leaders alone. An understanding of organizational processes emerges from observing the patterns of interactions. However, the appearance of a *stable* pattern may be a signal that the organization needs to beware of environmental shifts that could make the current adaptation obsolete.

The ideal organization has a clear vision of the industrial versus ecological tension and has introduced mechanisms into leadership pro-

cesses that counter the attributional biases that cause some to see leadership as a characteristic owned by positional leaders. The presence of a high degree of “cooperative competency” (Sivadas & Dwyer, 2000) and democratic or participative processes would be two indicators that an organization is leaning in this direction. The organization also would understand the benefits that a long-term perspective can offer over a short-term perspective. The weight given to a long-term perspective leads the organization to implement environmentally friendly practices, emphasize human development, avoid exploitation of workers or customers, and keep positional leader compensation at reasonable levels.

Our intervention theory centers around the concept of ecological versus industrial tension, which is a hypothetical construct summarizing the presence of the various processes that we believe affect an organization. In our view, most organizations need to decrease their dependence on positional leaders, increase input from organizational experts, involve the entire organization in environmental scanning, subject decisions to review and criticism by organizational members, and enhance organizational diversity. The role of the change agent is to assist the organization in moving in these directions while helping it avoid groupthink and other faulty decision-making processes. This will require careful intervention, especially if the organization or group has a history of downsizing or petty tyranny (Ashforth, 1994). In such contexts, obtaining genuine input into leadership processes and breaking down systemic barriers that create “organizational silence” (Morrison & Milliken, 2000) may be extremely difficult, as employees may view the invitations as feigned rather than genuine (Harlos, 2001).

In summary, we believe that the ecological paradigm has the prerequisites of a complete theory of leadership. As is the case with all theories, it must adapt to subsequent empirical evidence. However, we hope that it inspires new investigations of leadership processes and organizational adaptation.

References

Allen, K. E., Stelzner, S. P., & Wielkiewicz, R. M. (1998). The ecology of leadership: Adapting to the

challenges of a changing world. *Journal of Leadership Studies*, 5(2), 62–82.

Andersson, L. M., & Bateman, T. S. (2000). Individual environmental initiative: Championing natural environmental issues in U. S. business organizations. *Academy of Management Journal*, 43, 548–570.

Arogyaswamy, K., Barker, V. L., III, & Yasai-Ardkani, M. (1995). Firm turnarounds: An integrative two-stage model. *Journal of Management Studies*, 32, 493–525.

Ashforth, B. (1994). Petty tyranny in organizations. *Human Relations*, 47, 755–778.

Bakan, J. (2004). *The corporation: The pathological pursuit of profit and power*. New York: Free Press.

Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in banking: Does the composition of the top team make a difference? *Strategic Management Journal*, 10, 107–124.

Barker, R. A. (1997). How can we train leaders if we do not know what leadership is? *Human Relations*, 50, 343–362.

Barker, V. I., III, & Mone, M. A. (1998). The mechanistic structure shift and strategic reorientation in declining firms attempting turnarounds. *Human Relations*, 51, 1227–1258.

Bass, B. M., & Avolio, B. J. (1994). Shatter the glass ceiling: Women may make better managers. *Human Resource Management*, 33, 549–560.

Boal, K. B., & Hooijberg, R. (2001). Strategic leadership research: Moving on. *Leadership Quarterly*, 11, 515–549.

Boeker, W. (1992). Power and managerial dismissal: Scapegoating at the top. *Administrative Science Quarterly*, 37, 400–421.

Bond, M. H., & Smith, P. B. (1996). Cross-cultural social and organizational psychology. *Annual Review of Psychology*, 47, 205–235.

Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist*, 34, 844–850.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, 22, 723–742.

Buenger, V., Daft, R. L., Conlon, E. J., & Austin, J. (1996). Competing values in organizations: Contextual influences and structural consequences. *Organization Science*, 7, 557–576.

Cairns, J., Jr. (1998). The Zen of sustainable use of the planet: Steps on the path to enlightenment. *Population and Environment: A Journal of Interdisciplinary Studies*, 20, 109–123.

Cameron, K. S., Kim, M. U., & Whetten, D. A. (1987). Organizational effects of decline and turbulence. *Administrative Science Quarterly*, 32, 222–240.

- Capra, F. (1996). *The web of life*. New York: Anchor Books.
- Chatman, J. A., Polzer, J. T., Barsade, S. G., & Neale, M. A. (1998). Being different yet feeling similar: The influence of demographic composition and organizational culture on work processes and outcomes. *Administrative Science Quarterly*, *43*, 749–780.
- Chemers, M. M. (1997). *An integrative theory of leadership*. Mahwah, NJ: Erlbaum.
- Chen, Z., Lawson, R. B., Gordon, L. R., & McIntosh, B. (1996). Groupthink: Deciding with the leader and the devil. *Psychological Record*, *46*, 581–590.
- Choi, I., Nisbett, R. E., & Norenzayan, A. (1999). Causal attribution across cultures: Variation and universality. *Psychological Bulletin*, *125*, 47–63.
- Christensen, C. M. (2000). *The innovator's dilemma* (rev. ed.). New York: HarperBusiness.
- Clark, D. L. (1985). Emerging paradigms in organizational theory and research. In Y. S. Lincoln (Ed.), *Organizational theory and inquiry: The paradigm revolution* (pp. 43–78). Beverly Hills, CA: Sage.
- Colarelli, S. M. (1998). Psychological interventions in organizations: An evolutionary perspective. *American Psychologist*, *53*, 1044–1056.
- Colarelli, S. M. (2003). *No best way: An evolutionary perspective on human resource management*. Westport, CT: Praeger.
- Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. J. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 163–228). New York: Oxford University Press.
- Courtright, J. A., Fairhurst, G. T., & Rogers, L. E. (1989). Interaction patterns in organic and mechanistic systems. *Academy of Management Journal*, *32*, 773–802.
- Dabbs, J. M., Jr. (1992). Testosterone and occupational achievement. *Social Forces*, *70*, 813–824.
- Day, D. V. (2001). Leadership development: A review in context. *Leadership Quarterly*, *11*, 581–613.
- Dunphy, D. (1996). Organizational change in corporate settings. *Human Relations*, *49*, 541–552.
- Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology*, *86*, 42–51.
- Eisenhardt, K. M. (1989). Making fast strategic decisions in high-velocity environments. *Academy of Management Journal*, *32*, 543–576.
- Elron, E. (1997). Top management teams within multinational corporations: Effects of cultural heterogeneity. *Leadership Quarterly*, *8*, 393–412.
- Gastil, J. (1994). A meta-analytic review of the productivity and satisfaction of democratic and autocratic leadership. *Small Group Research*, *25*, 384–410.
- Gaulin, S. J. C., & McBurney, D. H. (2004). *Evolutionary psychology* (2nd ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.
- Gemmill, G., & Oakley, J. (1992). Leadership: An alienating social myth. *Human Relations*, *45*, 113–129.
- Gioia, D. A., & Sims, H. P., Jr. (1985). On avoiding the influence of implicit leadership theories in leader behavior descriptions. *Educational and Psychological Measurement*, *45*, 217–232.
- Gray, D. B., Connor, S., & Decatur, M. (1994). The belief in equality and leadership behavior: A construct validation. *Journal of Applied Social Psychology*, *24*, 367–377.
- Haleblian, J., & Finkelstein, S. (1993). Top management team size, CEO dominance, and firm performance: The moderating roles of environmental turbulence and discretion. *Academy of Management Journal*, *36*, 844–863.
- Hall, R. J., & Lord, R. G. (1995). Multi-level information-processing explanations of followers' leadership perceptions. *Leadership Quarterly*, *6*, 265–287.
- Hambrick, D. C., Cho, T. S., & Chen, M. (1996). The influence of top management team heterogeneity on firms' competitive moves. *Administrative Science Quarterly*, *41*, 659–684.
- Hambrick, D. C., & D'Aveni, R. A. (1992). Top team deterioration as part of the downward spiral of large corporate bankruptcies. *Management Science*, *38*, 1445–1466.
- Hannan, M. T., & Freeman, J. (1984). Structural inertia and organizational change. *American Sociological Review*, *49*, 149–164.
- Hannan, M. T., & Freeman, J. (1989). *Organizational ecology*. Cambridge, MA: Harvard University Press.
- Harlos, K. P. (2001). When organizational voice systems fail: More on the deaf-ear syndrome and frustration effects. *Journal of Applied Behavioral Science*, *37*, 324–342.
- Harvey, J. H., & Weary, G. (1984). Current issues in attribution theory. *Annual Review of Psychology*, *35*, 427–459.
- Hedrick-Wong, Y. (1998). The global environmental crisis and state behavior: An evolutionary perspective. In C. Crawford & D. L. Krebs (Eds.), *Handbook of evolutionary psychology: Ideas, issues, and applications* (pp. 573–594). Mahwah, NJ: Erlbaum.
- Heifetz, R. (1994). *Leadership without easy answers*. Cambridge, MA: Belknap Press of Harvard University Press.
- Hilton, J. L., & von Hippel, W. (1996). Stereotypes. *Annual Review of Psychology*, *47*, 237–271.

- Houghton, S. M., Simon, M., Aquino, K., & Goldberg, C. B. (2000). No safety in numbers: Persistence of biases and their effects on team risk perception and team decision making. *Group and Organization Management*, 25, 325–353.
- Janis, I. L. (1982). *Groupthink* (2nd ed.). Boston: Houghton Mifflin.
- Jennings, D. F., & Seaman, S. L. (1994). High and low levels of organizational adaptation: An empirical analysis of strategy, structure, and performance. *Strategic Management Journal*, 15, 459–475.
- Johnson, S. (2001). *Emergence: The connected lives of ants, brains, cities, and software*. New York: Touchstone.
- Kaku, M. (1997). *Visions: How science will revolutionize the 21st century*. New York: Doubleday.
- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). New York: Wiley.
- Kelley, H. H. (1973). The process of causal attribution. *American Psychologist*, 28, 107–128.
- Kelly, J. G. (1968). Toward an ecological conception of preventive interventions. In J. W. Carter, Jr. (Ed.), *Research contributions from psychology to community mental health* (pp. 75–99). New York: Behavioral Publications.
- Kelly, J. G. (1979). 'Tain't what you do, it's the way you do it. *American Journal of Community Psychology*, 7, 244–261.
- Kelly, J. G., Ryan, A. M., Altman, B. E., & Stelzner, S. P. (2000). Understanding and changing social systems: An ecological view. In J. Rappaport & E. Seidman (Eds.), *Handbook of community psychology* (pp. 133–159). New York: Plenum.
- Kerr, S., & Jermier, J. M. (1978). Substitutes for leadership: Their meaning and measurement. *Organizational Behavior and Human Performance*, 22, 375–403.
- King, A. S. (1990). Evolution of leadership theory. *Vikalpa*, 15(2), 43–54.
- Kirkman, B. L., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42, 58–74.
- Kirkpatrick, S. A., & Locke, E. A. (1996). Direct and indirect effects of three core charismatic leadership components on performance and attitudes. *Journal of Applied Psychology*, 81, 36–51.
- Klare, M. T. (2004, November 8). Crude awakening. *The Nation*, pp. 35–38, 40–41.
- Klingsporn, M. J. (1973). The significance of variability. *Behavioral Science*, 18, 441–447.
- Koys, D. J. (2001). The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. *Personnel Psychology*, 54, 101–114.
- Krishnan, H. A., Miller, A., & Judge, W. O. (1997). Diversification and top management team complementarity: Is performance improved by merging similar or dissimilar teams? *Strategic Management Journal*, 18, 361–374.
- Leana, C. R. (1985). A partial test of Janis' groupthink model: Effects of group cohesiveness and leader behavior on defective decision making. *Journal of Management*, 11, 5–17.
- Lerner, J. S., & Tetlock, P. E. (1999). Accounting for the effects of accountability. *Psychological Bulletin*, 125, 255–275.
- Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319–340.
- Lynch, P. D., Eisenberger, R., & Armeli, S. (1999). Perceived organizational support: Inferior versus superior performance by wary employees. *Journal of Applied Psychology*, 84, 467–483.
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, 51, 93–120.
- Mai-Dalton, R. R. (1993). Managing cultural diversity on the individual, group, and organizational levels. In M. M. Chemers & R. Ayman (Eds.), *Leadership theory and research* (pp. 189–215). San Diego, CA: Academic Press.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2, 71–87.
- Masters, R. D. (1989). *The nature of politics*. New Haven, CT: Yale University Press.
- Mathews, K. M., White, M. C., & Long, R. (1999). Why study the complexity sciences in the social sciences? *Human Relations*, 52, 439–462.
- Mays, V. M., Rubin, J., Sabourin, M., & Walker, L. (1996). Moving toward a global psychology: Changing theories and practice to meet the needs of a changing world. *American Psychologist*, 51, 485–487.
- McCauley, C. (1998). Group dynamics in Janis's theory of groupthink: Backward and forward. *Organizational Behavior and Human Dynamics*, 73, 142–162.
- McElroy, J. C. (1982). A typology of attribution leadership research. *Academy of Management Review*, 7, 413–417.
- McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, 26, 117–127.
- Mealey, L. J. (2000). *Sex differences: Developmental and evolutionary strategies*. San Diego, CA: Academic Press.
- Meindl, J. R. (1995). The romance of leadership as a follower-centric theory: A social constructionist approach. *Leadership Quarterly*, 6, 329–341.

- Meindl, J. R., Ehrlich, S. B., & Dukerich, J. M. (1985). The romance of leadership. *Administrative Science Quarterly*, *30*, 78–102.
- Miller, D., & Lee, J. (2001). The people make the process: Commitment to employees, decision making and performance. *Journal of Management*, *27*, 163–189.
- Miller, J. G. (1978). *Living systems*. New York: McGraw-Hill.
- Moorhead, G., Neck, C. P., & West, M. (1998). The tendency toward defective decision making within self-managing teams: The relevance of groupthink for the 21st century. *Organizational Behavior and Human Decision Processes*, *73*, 327–351.
- Morrison, E. W., & Milliken, F. J. (2000). Organizational silence: A barrier to change and development in a pluralistic world. *Academy of Management Review*, *25*, 706–725.
- Neck, C. P., & Moorhead, G. (1995). Groupthink re-modeled: The importance of leadership, time pressure, and methodical decision-making procedures. *Human Relations*, *48*, 537–557.
- Nemeth, C. J. (1995). Dissent as driving cognition, attitudes, and judgements. *Social Cognition*, *13*, 273–291.
- Neubert, M. J. (1999). Too much of a good thing or the more the merrier? Exploring the dispersion and gender composition of informal leadership in manufacturing teams. *Small Group Research*, *30*, 635–646.
- Ng, K. Y., & Van Dyne, L. (2001). Individualism-collectivism as a boundary condition for effectiveness of minority influence in decision making. *Organizational Behavior and Human Decision Processes*, *84*, 198–225.
- Novelli, L., Jr., & Taylor, S. (1993). The context for leadership in 21st-century organizations: A role for critical thinking. *American Behavioral Scientist*, *37*, 139–147.
- Oskamp, S. (2000). A sustainable future for humanity? How can psychology help? *American Psychologist*, *55*, 496–508.
- Paulus, P. B. (2000). Groups, teams, and creativity: The creative potential of idea-generating groups. *Applied Psychology: An International Review*, *49*, 237–262.
- Pearce, C. L., & Sims, H. P. (2002). Vertical versus shared leadership as predictors of the effectiveness of change management teams: An examination of aversive, directive, transactional, transformational, and empowering leader behaviors. *Group Dynamics: Theory, Research, and Practice*, *6*, 172–197.
- Pfeffer, J. (1977). The ambiguity of leadership. *Academy of Management Review*, *2*, 104–112.
- Phillips, J. S., & Lord, R. G. (1981). Causal attribution and perception of leadership. *Organizational Behavior and Human Performance*, *28*, 143–163.
- Pillai, R., & Meindl, J. R. (1998). Context and charisma: A “meso” level examination of the relationship of organic structure, collectivism, and crisis to charismatic leadership. *Journal of Management*, *24*, 643–671.
- Podsakoff, P. M., & MacKenzie, S. B. (1994). An examination of the psychometric properties and nomological validity of some revised and reduced substitutes for leadership scales. *Journal of Applied Psychology*, *79*, 702–713.
- Podsakoff, P. M., MacKenzie, S. B., & Bommer, W. H. (1996). Meta-analysis of the relationships between Kerr and Jermier’s substitutes for leadership and employee attitudes, role perceptions, and performance. *Journal of Applied Psychology*, *81*, 380–399.
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, *26*, 513–563.
- Quinn, R. E. (1988). *Beyond rational management*. San Francisco: Jossey-Bass.
- 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.
- Robbins, S. P. (1998). *Organizational behavior: Concepts, controversies, applications* (8th ed.). Upper Saddle River, NJ: Prentice Hall.
- Robbins, S. P. (2003). *Essentials of organizational behavior* (7th ed.). Upper Saddle River, NJ: Pearson Education.
- Robert, C., Probst, T. M., Martocchio, J. J., Drasgow, F., & Lawler, J. J. (2000). Empowerment and continuous improvement in the United States, Mexico, Poland, and India: Predicting fit on the basis of the dimensions of power distance and individualism. *Journal of Applied Psychology*, *85*, 643–658.
- Rost, J. C. (1993). *Leadership for the twenty-first century*. Westport, CT: Praeger.
- Rost, J. C. (1997). Moving from individual to relationship: A postindustrial paradigm of leadership. *Journal of Leadership Studies*, *4*(4), 3–16.
- Sagie, A. (1997). Leader direction and employee participation in decision making: Contradictory or compatible practices. *Applied Psychology: An International Review*, *46*, 387–452.
- Salancik, G. R., Calder, B. J., Rowland, K. M., Leblebici, H., & Conway, M. (1975). Leadership as an outcome of social structure and process: A multi-dimensional analysis. In J. G. Hunt & L. L. Larson (Eds.), *Leadership frontiers* (pp. 81–101). Kent, OH: Kent State University.
- Salancik, G. R., & Meindl, J. R. (1984). Corporate attributions as strategic illusions of management

- control. *Administrative Science Quarterly*, 29, 238–254.
- Schafer, M., & Crichlow, S. (1996). Antecedents of groupthink: A quantitative study. *Journal of Conflict Resolution*, 40, 415–435.
- Schein, E. H. (1992). *Organizational culture and leadership* (2nd ed.). San Francisco: Jossey-Bass.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday Currency.
- Shamir, B. (1992). Attribution of influence and charisma to the leader: The romance of leadership revisited. *Journal of Applied Social Psychology*, 22, 386–407.
- Simon, D. R. (2000). Corporate environmental crimes and social inequality: New directions for environmental justice research. *American Behavioral Scientist*, 43, 633–645.
- Sivadas, E., & Dwyer, F. R. (2000). An examination of organizational factors influencing new product success in internal and alliance-based processes. *Journal of Marketing*, 64, 31–49.
- Sparks, D. (2002). Bringing the spirit of invention to leadership [An interview with Ronald Heifetz]. *Journal of Staff Development*, 23(2), 44–46.
- Stanovich, K. E. (2001). *How to think straight about psychology* (6th ed.). Boston: Allyn & Bacon.
- Starbuck, W. H. (1983). Organizations as action generators. *American Sociological Review*, 48, 91–102.
- Staw, B. M., & Epstein, L. D. (2000). What bandwagons bring: Effects of popular management techniques on corporate performance, reputation, and CEO pay. *Administrative Science Quarterly*, 45, 523–556.
- 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.
- Terry, L. D. (1995). The leadership-management distinction: The domination and displacement of mechanistic and organismic theories. *Leadership Quarterly*, 6, 515–527.
- Tjosvold, D., & Poon, M. (1998). Dealing with scarce resources: Open-minded interaction for resolving budget conflicts. *Group and Organization Management*, 23, 237–255.
- Vandenberg, R. J., Richardson, H. A., & Eastman, L. J. (1999). The impact of high involvement work processes on organizational effectiveness: A second-order latent variable approach. *Group and Organization Management*, 24, 300–339.
- Van de Ven, A. H., Hudson, R., & Schroeder, D. M. (1984). Designing new business startups: Entrepreneurial, organizational, and ecological considerations. *Journal of Management*, 10, 87–107.
- Wanous, J. P., Reichers, A. E., & Austin, J. T. (2000). Cynicism about organizational change: Measurement, antecedents, and correlates. *Group and Organization Management*, 25, 132–153.
- Wielkiewicz, R. M. (2000). The Leadership Attitudes and Beliefs Scale: An instrument for evaluating college students' thinking about leadership and organizations. *Journal of College Student Development*, 41, 335–347.
- Wielkiewicz, R. M. (2002). Validity of the Leadership Attitudes and Beliefs Scale: Relationships with personality, communal orientation, and social desirability. *Journal of College Student Development*, 43, 108–118.
- Wurman, W. S. (1989). *Information anxiety*. New York: Doubleday.
- Yukl, G. (1989). Managerial leadership: A review of theory and research. *Journal of Management*, 15, 251–289.
- Yukl, G. (2002). *Leadership in organizations* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
- Zaccaro, S. J. (2001). *The nature of executive leadership: A conceptual and empirical analysis of success*. Washington, DC: American Psychological Association.

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