Part I

Foundational Principles for Leaders

1

Change, Leadership, and Creativity

The Powerful Connection

"Leadership is about managing change—whether you're leading a company or leading a country. Things change, and you get creative."

—Lee Iacocca

CHAPTER AT A GLANCE

What is the relationship between change, leadership, and creativity? How do these three concepts mutually support one another? Can you imagine how leadership effectiveness is dramatically enhanced when someone is able to use imagination when responding to today's volatile climate and ever-changing conditions? The purpose of this chapter is to examine more closely the three basic pillars of this book—namely change, leadership, and creativity. To that end, we provide some basic descriptions of these concepts and highlight the degree to which change, leadership, and creativity intertwine like the strands of a rope.

The chapter begins with a description of change, a concept we believe forms a bond between creativity and leadership. We then examine some contemporary descriptions of leadership that highlight a connection to creativity. Next, we provide

a review of some definitions, views, and characteristics of creativity. Building on a brief review of the leadership and creativity fields, we conclude the chapter with a description of the concept we call creative leadership.

◎ CREATIVE CHANGE: IT'S NOT CHANGING THE BABY

Quoting from Heraclitus again, "You can never step in the same river twice." In that respect, whether you are making something that wasn't there before or responding to what is already new or different, change is a constant process. The water looks the same, but it is different. In actuality, life and the conditions that surround it are always in motion. For example, as a natural phenomenon, your body is always changing, and this change will occur regardless of whether you want it to or not. Did you know that, because the replacement of cells in your body is an ongoing process, you actually have a new liver every 3 weeks and a new skeleton every 2 months?

In its broadest sweep, there are two kinds of change. First, there is change that exists naturally and is ongoing or cyclic. For example, the sun rises and sets, seasons come and go, and your body changes and grows. Second, there is change that people make either on purpose or in response to what is happening around them. Some examples of this kind of change are changing jobs, changing your mind, and changing the way you do things—the order, the purpose, and the method.

In the case of the former, change is a natural phenomenon. In the case of the latter, change may be equally natural, but it has the addition of the human element. The kind of change that is made on purpose engages your thinking process and thus requires your thinking skills. The main difference is that you apply one more deliberately than the other. In this book, we focus on the kind of change that is introduced more deliberately, that is, intentionally engaging in creative thought to develop yourself and positively influence others.

In the introduction, we shared a definition of creativity developed by organizational psychologist Reginald Talbot (1997). He defined creativity as "making a change that sticks (for a while)" (p. 181). The words in this definition were selected with specific intent. *Making* refers to the fact that creativity is about bringing something into being. It is not enough for people to simply think that they are creative or merely to imagine new possibilities; instead, you must be able to produce both tangible and intangible products. Ultimately, we judge the quality of creative behavior by what we see, the transformation of

imagination into a variety of outcomes—art, poetry, services, theories, entrepreneurial ventures, products, and solutions to a myriad of problems from personal to societal.

Change refers to the introduction of something new, which can fall anywhere along the continuum from continuous (i.e., incremental improvement) to discontinuous change (e.g., paradigm breaking). Not all change is creative. It is critical to note that, when we refer to change within this definition of creativity, we are not simply talking about an exchange. A change can take place when an existing item is replaced by another already established and known item, such as changing a broken part in your car with a functioning part. You can change a flat tire, change your mind, change your clothes, and change the baby, but these are not creative acts. When we refer to change within our definition of creativity, we refer to situations in which an explicit attempt is being made to bring an idea into being that has some degree of novelty—a creative change.

Finally, the phrase *that sticks* means the creative product or idea has some staying power, which occurs as a result of its serving some need or purpose. However, the stickiness, or value, of the creative product or idea may be temporary, thus the final phrase *for a while.* Creative thinking is ongoing, and at some point in time, someone usually comes up with a better or a less expensive way of doing things—thus, change is ever present.

As we pointed out in the introduction, not only is change here to stay, the pace of change has greatly accelerated. In their *Harvard Business Review* article entitled "Leadership in a (Permanent) Crisis," Heifetz, Grashow, and Linsky (2009) emphasized this point by noting:

> Today's mix of urgency, high stakes, and uncertainty will continue as the norm even after the recession ends. Economies cannot erect a firewall against intensifying global competition, energy constraints, climate change, and political instability. The immediate crisis . . . merely sets the stage for a sustained or even permanent crisis of serious and unfamiliar challenges. (p. 62)

In today's world, stability is temporary at best or, at worst, is an illusion. Therefore, successful leadership relies heavily on an individual's ability to effectively respond to change and to proactively drive change—in short, to be creative. And, since one change is so quickly replaced by another, leaders need to be continuously creative. Creative thinking is no longer an afterthought in terms of those skills deemed important to leadership effectiveness; instead, many contemporary

leadership experts now see creativity as a core leadership skill. The pace of change has increased to a dizzying rate, which brings both challenges and opportunities. To successfully address the challenges and to seize opportunities, leaders must employ their creative imaginations, and since leaders cannot have all the answers, they must also be adept at drawing out the creativity of others. In the sections that follow, we examine evolving views of leadership and describe how contemporary leadership theories underscore the importance of creativity.

◎ EVOLVING VIEWS OF LEADERSHIP: THE EMERGENCE OF CREATIVITY AS A CORE COMPETENCE

What makes a leader great? The answer to this question depends on when the question was posed. The answer today is quite different than 100 years ago when researchers began to seriously study leadership. More than a century ago, it was widely believed that leadership was an innate quality—a set of traits possessed by a rare few since birth that predisposed these individuals to achieve greatness. These innate personal characteristics included masculinity, self-confidence, and dominance. Thus, find an individual with these qualities, and it was believed that you had a great leader. In this manner, leadership was primarily concerned with identification and selection rather than development. For obvious reasons, this approach has been referred to as the trait or Great Man theory of leadership.

In hindsight, it is easy to see the shortcomings associated with this view of leadership. Indeed, the belief that leaders are born with a set of innate characteristics now falls into the category of leadership myths. Among the chief limitations of this approach is the fact that it ignores the interplay between an individual and the situation. Different situations are likely to require different qualities, thus making it difficult to identify a universal set of leadership traits that are applicable to all situations. And, even if a person had the requisite set of characteristics, he or she must find a situation that would allow this leadership potential to emerge. An old story helps to illustrate this point. Upon his passing, a well-known history professor was granted one wish when he entered heaven. Having a strong interest in military history, this professor asked to meet the person who had the greatest military mind of all time. The professor was then brought to someone he immediately recognized; but rather than being pleased, he was shocked. He knew this person as the local tailor in his town, not some great military mind. Surely, this was some kind of mistake. No, the professor was informed,

in fact, this former tailor had the greatest military mind of all time, and if he had found himself in the right circumstances, he would have become one of the greatest military leaders of all time.

The myth that leaders enter the world with a predetermined set of traits leads to a closely aligned misconception about leadership, that is, the belief that leadership cannot be taught or developed. In his popular leadership book, Maxwell (2007) concluded, "Although it's true that some people are born with greater natural gifts than others, the ability to lead is really a collection of skills, nearly all of which can be learned and improved" (p. 25). To further reinforce this point, in their classic study of senior organizational leaders, Bennis and Nanus (1985) found engagement in ongoing learning and development to be one of the most galvanizing qualities among the disparate group of leaders they studied. They found that the top leaders they interviewed were perpetual learners who had an insatiable appetite to develop new insights, explore new ideas, and entertain new challenges, as well as continuously push the boundaries of their own self-knowledge.

One final misconception about leadership worth noting is the belief that leadership is about position. This view holds that only those in positions of power and authority in organizations and communities can be great leaders. Simply having a title, for example, president, director, principal, manager, or department chair, is no assurance that the person in that position is a leader. Leadership is about what people do, not the title they hold. Furthermore, this is an elitist view that assumes there are distinct roles—leaders and followers. Reality is much more complex. Any member of an organization or community can exert leadership; one does not need a title or permission to demonstrate a capacity to bring about change. Paraphrasing from Betty Reese, an American officer and pilot, those who think they are too small to make a difference have never been in bed with a mosquito.

Moving from myth to reality, and skipping over leadership theories from the mid 20th century, we quickly advance to more contemporary views of leaders that highlight the emerging role creativity plays in leadership effectiveness. We begin with those views of leadership that make implicit connections to creativity and then conclude this section with leadership theories that call directly on creativity.

Some Contemporary Views of Leadership: Implicit Links to Creativity

As views of leadership have evolved, descriptions of leaders have been more likely to incorporate qualities generally ascribed to creative

people. Contemporary leadership theories, particularly when contrasted with the Great Man approach of a century ago, have demonstrated a tendency to include creativity concepts, traits, and abilities. For the most part, these connections to the field of creativity have been implicit. By implicit, we mean that leadership scholars, who are generally unfamiliar with the field of creativity, have unknowingly unearthed well-established creativity characteristics as they have delineated the attributes of highly effective leaders. The fact that these connections are implicit is profoundly important and insightful. Why? It would be easy to conceive that researchers and leadership experts who are familiar with the field of creativity might have a biased view of leaders and thus may be more likely to see creative qualities in the leaders they studied. Leadership scholars have dedicated themselves to the study of leaders and not to the field of creativity and, thus, do not possess in-depth knowledge about creativity. Therefore, it could be argued that their results have not been biased by their knowledge of creativity research and, thus, truly reflect the fact that successful leadership today relies, in part, on a person's ability to be creative.

The beginning of the new millennium served as a catalyst for a number of projects focused on describing the qualities leaders would need to be successful in the 21st century. Two of these projects, undertaken in association with two of the foremost thinkers on the topic of leadership, Peter Drucker and Warren Bennis, provide clear examples of descriptions of leaders that highlight characteristics often associated with creative people. In both projects, a team of renowned leadership experts were asked to forecast the leadership attributes necessary for success in the new millennium (Bennis, Spreitzer, & Cummings, 2001; Hesselbein, et al., 1996). Table 1.1 provides a summary of some of the characteristics deemed necessary for leadership effectiveness. Two of the columns, one from each of the works cited above, provides a summary of some of the qualities these experts felt were necessary for leaders to be successful in the 21st century. By way of contrast, this table includes a list of traits drawn from Davis's (1986) summary of the research into the personalities of highly creative individuals. To highlight the similarities between the characteristics of creative people and qualities deemed important for leaders, we have not labeled the columns. Can you differentiate the leadership columns from the creativity column? The answer is at the end of this chapter.

We suggest that this table highlights the considerable synergy that now exists between creativity and leadership. That is not to suggest that creative people and leaders are one and the same. To be sure, not all creative people are effective at leading others, and certainly,

effective leadership requires traits, skills, and knowledge that lie out-side the scope of creativity. However, we do hope this illustrates the extent to which leadership scholars and practitioners see creativity-related skills and traits as essential for leaders in the new millennium.

Table 1.1   Characteristics of 21st Century Leaders and Traits of Creative People

• Seeks options not plans • Looks for what is possible • Flexible • Experiments and learns from failure • Pursues vision with intent • High energy level • Tireless, inventive, observant risk-taker who is an ever-hopeful builder • Challenges assumptions and paradigms • Empowers the talent, intelligence, and creativity of others • Comfortable spanning boundaries and cross-fertilizing	• Curious • Energetic • Experimenting • Independent • Industrious • Flexible • Open-minded • Original • Playful • Perceptive • Persevering • Questioning • Risk-taker • Self-aware • Sensitive	• Passion • Resists rules and regulations • Self-aware • Encourages experimentation and initiative • Expresses self in own way • Experiments and not traumatized by failure • Intellectually curious • Improvises, not wedded to routine • Values diverse perspectives • Intuitive • Questions everything • Open-minded

Sources: Bennis, Spreitzer & Cummings (2001); Davis (1986); Hesselbein, Goldsmith & Beckhard (1996).

As discussed earlier in this chapter, one key force that appears to draw the fields of creativity and leadership together is change. The kind of uncertainty leaders must contend with in times of continuous change was captured well by Spreitzer and Cummings (2001):

> An important job of the leader will be to continuously scan the environment and try to make sense of it. Leaders who find comfort and security in stability will have difficulty in surviving. Instead, tomorrow's leaders must find comfort in the mantra, "change is constant." (p. 242)

In response to this constant change, leaders will be called on to be creative. A creative mind-set and creative thinking are fast becoming leadership antidotes to the uncertainty that accompanies constant change. This is exemplified by Greenberg-Walt and Robertson's (2001) description of the evolving role of executive leadership:

> The number one characteristic identified by students for "the global leader of the future" is open-mindedness. Participants believe that a leader who embraces the status quo will be easily defeated by a competitor who is willing to try new ideas, seek out new opportunities, and change as needed—both within the corporation and the industry. Innovation is key to the continued success of an organization, and using this key depends on having a leader with an open mind. (p. 155)

Leaders cannot have all the answers. The pace of change, the complex problems brought about by change, and the extent to which these situations call for new responses make it impossible for a single individual to possess the requisite skills and knowledge to solve all problems. Therefore, leaders must not only rely on their own creativity but must also be adept at facilitating the creative thinking of others, which implies that they possess the ego strength to admit that they do not have all the answers and the open-mindedness to entertain and support others' ideas. The applied imagination of many minds will almost always outperform the lone creative problem solver, especially over time. This ability to facilitate the creativity of others was echoed by Weber (1996), who stated that leaders of the future must excel at soft skills such as, "the ability to accept and value diversity and harness its potential by unleashing people's creativity in the service of shared goals" (p. 306).

Kouzes and Posner's (1995) well-known research on what leaders do to bring about extraordinary results parallels known processes for promoting creativity. These leadership experts were not concerned about who leaders were (i.e., their personal traits), rather they were focused on what leaders did to "turn challenging opportunities into remarkable successes" (p. xvii). The overarching goal for Kouzes and Posner was to discover the kinds of practices highly effective leaders engaged in so that others might learn and develop these practices. This research team examined the leadership stories and experiences relayed by ordinary people who were able to bring about extraordinary accomplishments. Analysis of this data produced clear patterns and resulted in the identification of five leadership practices. Kouzes and Posner's five leadership practices are found in Table 1.2. Each leadership practice is followed by two sample strategies.

Table 1.2   Kouzes and Posner's Leadership Practices

- **Challenging the Process**—Looking for innovative ways to improve the organization
  - Search for Opportunities
  - Experiment and Take Risks

- **Inspiring a Shared Vision**—Envisioning the future, creating an ideal image of what the organization can become
  - Envision the Future
  - Enlist Others

- **Enabling Others to Act**—Building spirited teams
  - Foster Collaboration
  - Strengthen Others

- **Modeling the Way**—Establishing principles for how people will be treated and how goals will be pursued
  - Set the Example
  - Achieve Small Wins

- **Encouraging the Heart**—Making people feel like heroes
  - Recognizing Contributions
  - Celebrate Accomplishments

Source: Kouzes & Posner (1995).

It is our opinion that the principles and practices described by Kouzes and Posner align with the activities people engage in when involved in the creative process. For example, highly creative people challenge the status quo, take risks, experiment with new approaches, and examine alternative ways of solving problems (i.e., Challenge the Process) (Davis, 1986; MacKinnon, 1978; Torrance, 1979). Highly creative people also focus on future possibilities, daydream about potential outcomes, think in terms of what if or what might be, and are adept at getting others to buy into their ideas (Sternberg & Lubart, 1992; Torrance, 1979). These would appear to be related to Kouzes and Posner's Inspiring a Shared Vision. With respect to Modeling the Way, research in the field of creativity has shown that highly creative individuals had mentors who guided them or paragons who influenced

their work (Simonton, 1987). Furthermore, creative acts are more likely to come about when people are highly motivated, particularly when they are passionate about their ideas or have great internal drive (Amabile, 1987). This relates to the practice of Encouraging the Heart. So, once again, there are implicit relationships between the fields of leadership and creativity. However, in this case, rather than finding similar traits between those who lead and those who create, the kinds of practices described by Kouzes and Posner correspond with the kinds of practices people engage in when they are being highly creative or inspiring creativity in others.

A recent research study has provided an empirical connection between Kouzes and Posner's leadership practices and the successful introduction of innovative practices in organizations. Elenkov and Manev (2009) studied senior expatriate leaders and their efforts to bring about innovation in their companies. This rather expansive investigation involved subordinates' evaluation of the leadership practices of over 150 senior managers in 27 different countries. Among the variables assessed by Elenkov and Manev, the five leadership practices described in Table 1.2 were the strongest predictors of product-market innovation (e.g., new products, new promotional programs, entering new markets) and organizational innovation (e.g., new planning systems, new information management systems, new production processes). Here, we see how creativity-related leadership practices were crucial in bringing creative change to organizations.

Transformational Leadership Theory: How Leaders Deliberately Use and Promote Creativity

An approach to leadership that dominates much of the recent and current literature is known as transformational leadership. Indeed, an analysis of the articles published in the first decade of the *Leadership Quarterly* revealed that one-third of the journal content was dedicated to transformational leadership (Lowe & Gardner, 2000). No other set of theories received greater attention with the next closest achieving 14% of the journal content.

At the heart of transformational leadership is change. In fact, the very root of this form of leadership, the word *transform,* means to make considerable change in form, appearance, or character. Not surprisingly, with its explicit focus on facilitating change, descriptions of transformational leadership make direct connections to creativity. With its emphasis on creativity and change, we will explore how transformational leadership is broadly described and how it links specifically to creativity.

Though the term *transformational leadership* originated in the early 1970s (Downton, 1973), much elaboration has occurred since then from a variety of sources (see Avolio, 1999; Bass, 1985, 1998; Tichy & DeVanna, 1990; Yammarino, 1993). The fundamental focus of transformational leadership is to engage in a process that serves to change and transform others. Transformational leaders commit themselves to developing others to their fullest potential. Through the influence of transformational leadership, followers are able to elevate themselves beyond self-interest and to achieve extraordinary accomplishments that serve some greater good. The transformational leadership process is not a one-way relationship. It is a connection between the leader and his or her constituents that generally results in all parties reaching higher levels of motivation and morality. Northouse (2010) underscored the connection between transformational leadership and change, as well as the partnership between leaders and followers, when he stated, "Although the transformational leader plays a pivotal role in precipitating change, followers and leaders are inextricably bound together in the transformation process" (p. 172). Box 1.1 provides a definition of transformational leadership along with other key concepts presented in this chapter.

BOX 1.1 KEY VOCABULARY

Some Key Concepts Related to Leadership and Creativity

Creativity: *making a change that sticks (for a while)* (Talbot, 1997); *the production of original ideas that serve some purpose.*

Creative Change: *the adoption of a creative product, a novel and useful idea, which has been embodied in either an intangible or tangible form, that adds value to an individual, team, organization, or society.*

Creative Leadership: *the ability to deliberately engage one's imagination to define and guide a group toward a novel goal—a direction that is new for the group. As a consequence of bringing about this creative change, creative leaders have a profoundly positive influence on their context (i.e., workplace, community, school, family) and the individuals in that situation.*

Transformational Leadership: *"a process in which an individual engages with others and creates a connection that raises the level of motivation and morality in both the leader and the follower"* (Northouse, 2010, p. 172).

What are the elements of transformational leadership? Since Bass and others have developed a measure to assess transformational leadership, we will use those psychometric factors to describe the dimensions that comprise this approach to leadership (Avolio, Bass, & Jung, 1999; Bass, 1985, 1990; Bass & Avolio, 1990). There are four factors associated with transformational leadership. As they all start with the letter I, these have been referred to as the four I's of transformational leadership.

One factor is called *idealized influence*. This refers to an ability on the part of the leader to serve as a role model for others. Respect is earned through the leader's high standard of moral and ethical behavior, and as a consequence, there is a strong bond of trust with others. A willingness to take personal risk and consistency in decision making further reinforces this trust.

Individualized consideration is another element of transformational leadership. Here, leaders are sensitive to the individual differences that exist among their constituents. They listen carefully to followers' needs and provide feedback and direction that enable others to develop in accordance with their own unique potential. Transformational leaders create work climates that accommodate and promote diversity. In Chapter 13, we discuss the importance of psychological diversity and how leaders need to work with such individual differences.

Inspirational motivation constitutes another factor within transformational leadership. This factor pertains to the leader's ability to create and communicate a compelling vision. The vision serves to inspire others to commit to a common goal. Through the use of symbols and a display of optimism, leaders enhance their followers' beliefs in their own abilities to perform at high levels.

The final factor of transformational leadership is *intellectual stimulation*. Of the four transformational leadership dimensions, intellectual stimulation makes the most direct connection to creativity. This leadership–creativity link was captured well in Northouse's (2010) description of this factor:

> It includes leadership that stimulates followers to be creative and innovative, and to challenge their own beliefs and values as well as those of the leader and the organization. This type of leadership supports followers as they try new approaches and develop innovative ways of dealing with organizational issues. It promotes followers' thinking things out on their own and engaging in careful problem solving. (p. 179)

The transformational leader recognizes the inherent value and benefit in promoting individual creativity. To that end, those engaged in this form of leadership deliberately nurture, challenge, and promote

the creative thinking of others. Through their behavior, they create a work climate that supports others' creativity, encouraging followers to pursue their own solutions to problems, to explore complex challenges by reframing problems, and to question decisions and practices.

The qualities and behaviors associated with transformational leadership are rife with connections to creativity, and we suggest this relationship positions creativity as a core leadership competency. Inspirational motivation, for instance, addresses the need to tap into individuals' intrinsic interests, and intrinsic motivation has been well documented as a main stimulant to creative achievement (Amabile, 1998). Inspirational motivation underscores the importance of a vision as a compelling force toward change. In the field of creativity, the ability to work toward a vision has been considered one of the primary personal characteristics of highly creative individuals (Davis, 1986; MacKinnon, 1978). One must first be able to imagine what is possible in order to then create. Finally, intellectual stimulation speaks directly to the importance of applying imaginative thought to solve organizational, community, and societal problems. In this regard, leaders deliberately engage others in the creative process so that change and innovation can be brought about.

As a contemporary and popular view of leadership, we believe that transformational leadership theory has forged a clear bond to creativity. This review should make it apparent that this leadership theory incorporates creativity both as a leadership quality and as an important outcome of leadership efforts. As Gumusluoglu and Ilsev (2009) so aptly observed, "Transformational leadership behaviors closely match the determinants of innovation and creativity at the workplace, some of which include vision, support for innovation, autonomy, encouragement, recognition, and challenge" (p. 462). But, don't just believe us. The research note found in Box 1.2 provides a brief overview of a number of recently published studies that produced tangible evidence for the positive influence transformational leadership has on both individual creativity and organizational innovation.

BOX 1.2 RESEARCH NOTE

Does Transformational Leadership Truly Impact Creativity and Innovation?

We described transformational leadership theory in a way to highlight the conceptual overlap between creativity and a contemporary view of leadership, but does hard evidence exist that demonstrates that the behaviors associated

(Continued)

(Continued)

with transformational leadership produce higher levels of creativity? A study published by Reuves, van Engen, Vinkenburg, and Wilson-Evered in 2008 took up this very question. These authors studied the degree to which transformational leadership yielded higher amounts of innovation in health care organizations. Working with more than 40 teams drawn from four different hospitals in Australia, this research team found a strong positive relationship between all four transformational leadership factors and team innovation. That is, those employees subjected to higher levels of transformational leadership behavior also reported significantly higher levels of innovative behavior in their teams. Similar findings were generated in an earlier study of Taiwanese electronics companies (Jung, Chow, & Wu, 2003).

In 2009, Gumusluoglu and Ilsev published the findings of research study that carried out a detailed examination of the relationships among transformational leadership, employee creativity, and organizational innovation. A strength associated with this investigation was the use of quantifiable business data to evaluate organizational innovation. Where some studies have used employees' perceptions of organizational innovation, this research team evaluated three outcomes as evidence of organizational innovation: 1) total sales generated by product innovations; 2) the company's total sales; and 3) the expenditures in producing the product innovations. Analysis showed that transformational leadership had a significant and positive impact on employee creativity. Furthermore, the findings also revealed a strong relationship between transformational leadership and organizational innovation. The authors concluded, "The findings suggest that transformational leaders might not only promote innovative activity within the organization but also ensure the market success of the innovations" (p. 470).

Direct Connections: Conceptions of Leadership that Place Creativity at the Core

The previous two sections refer to aspects of creativity but do not formally position it as a core construct of effective leadership. Recently, some authors have been more explicit about the centrality of creativity in leadership (Csikszentmihalyi, 2001; Goertz, 2000; Mumford et al., 2000; Sternberg, 2002; Sternberg, Kaufmann, & Pretz, 2004). Indeed, Sternberg and his colleagues use the term *creative leadership* (Sternberg et al., 2004).

Sternberg (2002) began his exploration of creative leadership by describing the specific role intelligence plays in determining successful

leadership. The traditional view has been that effective leadership depends on an individual's level of analytic intelligence—an ability to analyze and evaluate existing ideas and systems. Sternberg, however, suggested that effective leadership relies on successful intelligence. He (Sternberg, 2002) provided the following description of successful intelligence, "People achieve success by recognizing and capitalizing on their strengths and by recognizing and either correcting or compensating for their weaknesses" (p. 10). Though analytic intelligence serves to support successful intelligence, Sternberg has added two further abilities, which have been largely ignored with respect to leadership effectiveness, namely, practical and creative intelligence. Practical intelligence allows people to successfully shape their environments to suit themselves. Creative intelligence allows leaders to form a vision—to decide where they wish to lead others. At the core of creative intelligence is the ability to gain support from others by convincing them that your unpopular ideas have merit.

Where Sternberg included creativity as one of the important factors for predicting effective leadership, Mumford and his colleagues have gone a step further and argued that the main task of leadership is to creatively solve problems. Mumford and his colleagues' leadership model is directly related to one of the major propositions of this book—creativity is a core leadership competence, and creative problem solving skills enhance leadership effectiveness. You will discover later that a good portion of this book is dedicated to principles and procedures that are extracted from the CPS process. Indeed, Mumford et al. (2000) argued that creative problem-solving skills are critically important to leadership performance. You will learn more about the CPS process in later chapters; the aim of this material is to move beyond theory and to provide leaders with principles and tools to become more effective at solving problems that require imagination. For now, we will close this section by describing Mumford and his colleagues' model.

In contrasting their approach to past theories that attempted to understand leaders through their behaviors (e.g., transformational leadership, theories of behavioral style, leader–member exchange), Mumford et al. (2000) suggested that "leadership can be framed not in terms of specific behaviors, but instead in terms of the capabilities, knowledge, and skills that make effective leadership possible" (p. 12). From this central premise, Mumford et al. (2000) developed a theory that suggests leadership performance is directly related to the ability to solve problems. These authors are quick to note that the kinds of problems leaders contend with are not of the routine sort. Rather, they are characterized by complexity (i.e., ill-defined problems with no single

solution path), novelty (i.e., new or changing situations), and ambiguity (i.e., gaps in information). Thus, Mumford et al. suggested that complex, novel, ambiguous problems cannot be solved through routine solutions, but rather, they require individuals to reshape and reform their prior knowledge. In short, the problem solving required to be an effective leader must involve creative thinking. These authors concluded that, "The skills involved in creative problem solving influence leader performance" (Mumford et al., 2000, p. 17).

Figure 1.1 presents Mumford and his colleagues' (Mumford et al., 2000) model. This model is designed to illustrate how specific leadership characteristics determine leadership performance. As already noted, problem solving is predicted to have a direct impact on performance (see right side of the graphic). Again, recall that problem solving in this model refers to an ability to employ creativity to effectively address complex social problems. Three factors contribute to individuals' problem solving abilities: (1) their problem-solving skills; (2) social judgment and social skills; and (3) knowledge. At the far left of the model are a number of basic attributes that in turn influence an individual's ability to acquire complex problem-solving skills. These attributes are: **(1) general cognitive ability** *(innate abilities, such as intelligence);* **(2) crystallized cognitive abilities** *(abilities that can be developed, such as fluency, speed of closure, divergent thinking);* **(3) motivation** *(willingness to take on complex problems);* and **(4) personality** *(openness, tolerance for ambiguity, curiosity, risk taking, adaptability).* Although the main thrust of the model focuses on the direct impact personal capabilities have on problem solving and ultimately leadership performance, Mumford et al. (2000) do acknowledge the direct and indirect influence of external forces. Thus, career experiences and environmental influences surround the main facets of the model, because they possess the potential of having some effect on these person-based components and, in the case of the immediate environment, a direct effect on leadership performance. People's past career experiences can have dramatic effects on crystallized cognitive abilities, motivation, knowledge, and problem-solving skills. Finally, opportunities and constraints in the environment can have a direct effect, positive or negative, on all aspects of this model, from the development of the individual attributes found in the left side of the model to leadership performance on the right.

The purpose of this section on leadership was to provide support for the conceptual link between creativity and leadership. The very real and practical importance of this connection was reinforced by a recent survey of more than 1,500 CEOs from around the world (IBM, 2010).

Figure 1.1 Mumford and Colleagues' Leadership Capacity Model

Career Experiences

General Cognitive Ability
Crystallized Cognitive Abilities
Motivation
Personality

Problem-Solving Skills
Social Judgment and Social Skills
Knowledge

Problem Solving

Performance

Environmental Influences
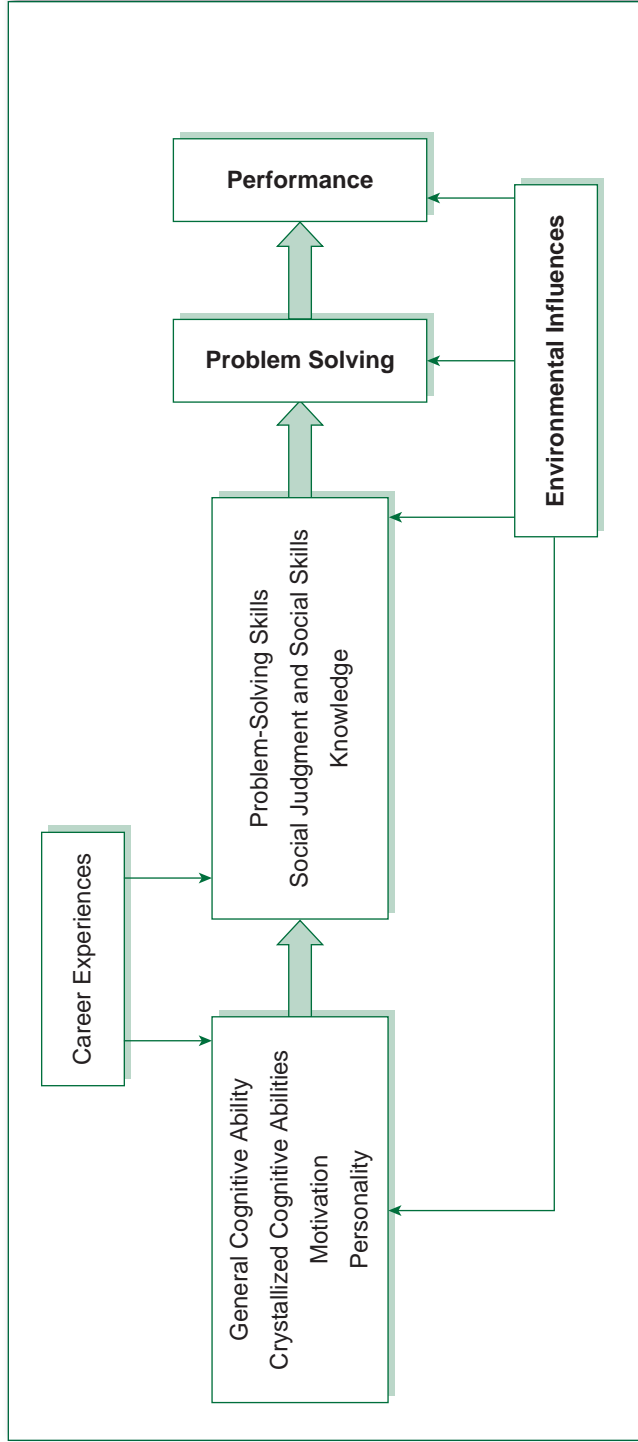
The CEOs were asked to rank the most important leadership qualities needed over the next 5 years. Creativity was ranked number one with 60% of these executive leaders citing this skill as paramount for responding effectively to the current economic environment. As this report indicated:

> CEOs now realize that creativity trumps other leadership characteristics. Creative leaders are comfortable with ambiguity and experimentation. To connect with and inspire a new generation, they lead and interact in entirely new ways. (p. 23)

◎ CREATIVITY: THE NECESSARY FUEL FOR CHANGE

Because our major premise is that what we know about creativity can assist in developing leaders, we will examine what we mean by creativity, including some basic definitions, views, and characteristics.

Changing Views of Creativity: From Fringe to Essential Workplace Skill

As creativity professionals, we have noticed that people's views of creativity have changed over the last decade or so. In the early 1990s, when we asked participants in our workshops to describe creativity, it was not uncommon for us to hear comments like the following: "You have to be eccentric to be creative." "You can't enhance someone's creativity." "Some people have it and some don't." "That's for artists and scientists." "Creativity is unpredictable." "You can't measure it." "It's bizarre." "That's what happens in research and development." "Children are creative." "I'm not creative." To a certain degree, there was a perception that creativity was strange, weird, and uncontrollable.

These past reactions to creativity did not surprise us. As Sternberg and Lubart (1999) put it, notions of creativity have been steeped in mystical beliefs. To the Greeks, it was the muse or some other external force that allowed individuals to create. Davis (1986) indicated that some people believe creativity is a "mysterious mental happening" (p. 20). Ideas seem to come from nowhere and cannot be controlled, and if the creative process is too closely scrutinized, there is a risk of damaging it.

Today, our audiences give us more productive descriptions of creativity. When asked to list words or phrases they associate with creativity, we typically receive responses like "imagination," "problem

solving," "risk taking," "challenging the status quo," "being innovative," "necessary for survival," "being adaptable," "creating change," "thinking outside of the box," "fun," and "growth." It is clear to us that there is a greater appreciation for the importance of creativity in all aspects of life. This observation is further supported by the work of Florida (2002), who provided the following explanation as to the force behind the accelerated pace of change that has occurred over the last half century:

> The driving force is the rise of human creativity as the key factor in our economy and society. Both at work and in other spheres of our lives, we value creativity more highly than ever, and cultivate it more intensely. The creative impulse—the attribute that distinguishes us, as humans, from other species—is now being let loose on an unprecedented scale. (p. 4)

This shift toward a more positive view of creativity has been further reinforced by numerous reports that underscore the important role creative thinking plays in one's professional life in the 21st century. We are aware of at least four separate national reports in the United States that have placed creativity among the most important 21st century skills (Casner-Lotto, Rosenblum, & Wright, 2009; National Center on Education and the Economy, 2008; Trilling & Fadel, 2009; Wagner, 2008). For example, a report entitled *Skills for the 21st Century* (Partnership for 21st Century Skills, 2008; Trilling & Fadel, 2009), which was created by a group of leaders from such organizations as the American Society for Curriculum Development, Dell, Educational Testing Service, Microsoft, and Verizon, specifically identified the following creativity-related skills: solving complex, multidisciplinary, open-ended problems; creativity and entrepreneurial thinking; and making innovative use of knowledge, information, and opportunities. Similarly, when the National Center on Education and the Economy (2008) released a report describing the steps necessary to overhaul education, one of their suggested action steps was to ensure that standards, assessments, and curricula in schools reflect the needs of today and tomorrow. To that end, the report touted skills such as creativity and innovation. As this report forecasts:

> For the past 25 years, we have optimized our organizations for efficiency and quality. Over the next quarter century, we must optimize our entire society for innovation. . . . Creativity, innovation, and flexibility will not be the special province of an elite. It will be demanded of virtually everyone who is making a decent living, from graphic artists to assembly line workers, from insurance brokers to home builders. (p. 25)

Consider your own educational experiences in terms of these 21st-century work skills. To what extent did your educational preparation, either from kindergarten through high school or college or university level, focus specifically on developing your creative thinking skills so that you would be prepared to join the modern workforce? We suspect that few would say that this was the case. As noted in the book *Tough Choices or Tough Times:*

> Our schools, on the whole, are hostile to ideas. Too often, our tests ask students to come up with the one right answer, and the curriculum, pegged to the tests, penalizes the creative student rather than rewarding him or her for the unexpected but thoughtful—or even brilliant—response. (National Center on Education and the Economy, 2008, p. 32)

Among the applied skills necessary in today's workplace, the skill with the largest gap between employer need and level of preparation among workers is creativity and innovation (defined as: demonstrate originality and inventiveness in work; communicate new ideas to others; integrate knowledge across different disciplines). As this report found:

> Almost all of the U.S. business executives and school superintendents and leaders surveyed agree that "creativity is of increasing importance in the workplace." Yet, more than half of the employer respondents say they had difficulty finding qualified applicants with the desired creativity skills. And among those employers specifically seeking creative employees, the overwhelming majority indicates difficulty finding qualified applicants. (Casner-Lotto et al., 2009, p. 10)

Creativity is not simply about the arts, as noted above; numerous reports now consider it a crucial workplace skill, a skill needed in all organizations, whether it be government or industry, public or private, for-profit or not-for-profit. Furthermore, creativity is a skill that is valuable at all levels of the organization and in all functions. Creativity is not limited to the research and development (R&D) or marketing functions anymore. Opportunities to solve problems and to engage in breakthrough thinking can and should happen throughout the organization (Henry, 2001; Kuhn, 1988; VanGundy, 1987; West, 1997). Within organizations, creativity is the starting point for innovation, and without innovation, organizations cannot survive in times of rampant change. The August 1, 2005, issue of *BusinessWeek* featured a special report on creativity (Nussbaum, Berner, & Brady, 2005). One of the main points in this report was that organizations can no longer compete just on cost or

quality. In the future, the core competency that will separate successful organizations from those that fail will be creativity.

Defining Creativity: Novelty Made Useful

Thus far, we have described why creativity is an important skill in the 21st century, but we have not fully delved into what is meant by creativity. Perhaps the most common definition of creativity offered by those in the field of creativity is the production of original ideas that serve some purpose. What is important to note about this definition is that creativity is not synonymous with pure novelty or being different. Being original and being creative are not the same. Rather, creativity is clearly about doing something in an original way that is, at the same time, useful. Using these two primary features of a creative act, novelty and usefulness, Figure 1.2 presents a simple two-by-two matrix that helps to show what distinguishes creative products from other products or ideas. In this matrix, the upper right quadrant is reserved for those products that have some element of newness and that clearly meet some purpose in a satisfactory way, such as the recent success associated with Apple's iPod, iPhone, and iPad. When we say products, we do not limit this to tangible products, but it is meant to include intangible items, such as services, music, ideas, and theories. This is the

Figure 1.2   What Makes a Product Creative?

		Low Usefulness	High Usefulness
Novelty	**High**	**Fads** (product disappears when novelty wears off)	**Creative Products** (original and meets a need)
	Low	**Repeating Past Mistakes** (unproductive traditions or habits)	**Utilitarian Products** (product that stands the test of time)

Source: ©Puccio, Murdock, & Mance (2005). Reprinted with permission.

intent of deliberate creativity, to introduce something that is both new and useful, a creative change

When something is not new, has no element of originality, yet is highly useful, such as the standard No. 2 pencil, we refer to this as a utilitarian product. In other words, the product does what it was made to do. When you go to the store to purchase a standard No. 2 pencil, there is no shock or surprise by what you find. The product hasn't changed in decades. There is little to no change to this product as it continues to serve its purpose well.

In the upper left quadrant are fads. These are products and ideas that have great novelty but low usefulness. A product or idea whose primary appeal is its novelty, such as the 1970s pet rock and the fashion trend of platform shoes for men, will soon fade away when people realize there is little practical value. In some cases, fads get recycled by the next generation. This is often the case in fashion and hairstyles. This happens because what is old hat for one generation might be novel for another.

Finally, in the lower left quadrant we have ideas and products that are not new and have little usefulness. We call it repeating past mistakes because thoughts and actions in this quadrant have been tried before, thus they are not novel, and they either met with successful results initially, but not now, or weren't useful from the very start. Outdated laws that are still on the books provide excellent examples of this quadrant (Powell & Koon, n.d.). A law in Austin, Texas, for example, indicates it is illegal to carry wire cutters in your pocket. Why? This law was enacted in the days of the Wild West when cowboys would cut barbed-wire fences of property owners to allow their cattle through.

Customs and traditions also provide excellent examples of this quadrant. By definition, customs and traditions cannot be new, and sometimes, they are not very useful. In organizational life, you might run into useless traditions, such as policies and procedures that appear to have lived well beyond their usefulness. Have you ever earnestly questioned an organizational practice only to get these responses: "But, that's the way we've always done it," or "That's our policy"? Statements like this are clear indicators that you are bumping into something that is definitely not new and may no longer be satisfactorily fulfilling its intended purpose.

Another behavior we associate with this quadrant is doing something over and over again and expecting different results. Have you ever hit an illuminated elevator call button numerous times, expecting your repeated efforts to bring the elevator car faster? Have your ever tried to solve a computer problem by repeating the same commands, hoping that just once it might work? These are simple examples. More serious examples include repeating the same sales strategies that

produced modest outcomes and expecting dramatic gains in sales; leaders who want to change their relationship with their followers but who do not change the nature of their interactions; or teachers who expect students to show significant increases in skill level but who find it impossible to adopt new teaching strategies.

A Systems Model for Creative Change

The novelty–usefulness definition of creativity tells us what is and is not creative, but it does not tell us how creativity operates. To do this, we turn to a systems model of creativity. Many scholars agree that creativity is made up of four distinct facets (MacKinnon, 1978; Rhodes, 1961; Stein, 1968). The four main elements of creativity are person(s), process, environment, and product. Although these facets have their own discrete attributes, they do influence one another and, therefore, create a system for how creativity works.

In Figure 1.3, the Creative Change Model, we depict how these facets interact to yield creative products and eventually produce creative change (again, we say creative change because we are talking about the deliberate introduction of something that is new). Creativity begins with an individual or a team of individuals. The **person(s)** facet in this system *considers individual skills, knowledge, personality, experiences, and motivation* that all have an influence on the amount and kind of creativity an individual or team is likely to produce. The **process** facet refers to *the stages of thinking individuals and teams go through as they develop creative ideas in response to predicaments and opportunities.* The quality of the process often, as also is the case for the person(s) facet, has a direct impact on the quality of the product produced. These two facets are not completely independent; in fact, we suggest that they interact. In Chapter 13, we describe how people possess different preferences for certain aspects or stages of the creative process.

Creative thinking does not happen in a vacuum. It takes place in particular settings. In some cases, these settings may stimulate creative thinking, and in other cases, they may inhibit creative thought. This facet is referred to as the **environment**, *the ways in which the psychological and physical workplace climates, or the cultures in which you live, influence the expression of creative behavior.* You cannot take someone who has all the right personality characteristics and thinking skills to be creative and simply put them in any situation and expect great things. Research by Teresa Amabile (Amabile, Burnside, & Gryskiewicz, 1995) of the Harvard Business School has identified the kinds of characteristics of the workplace that tend to facilitate or undermine creative performance.

Figure 1.3   Creative Change Model: A Systems Approach
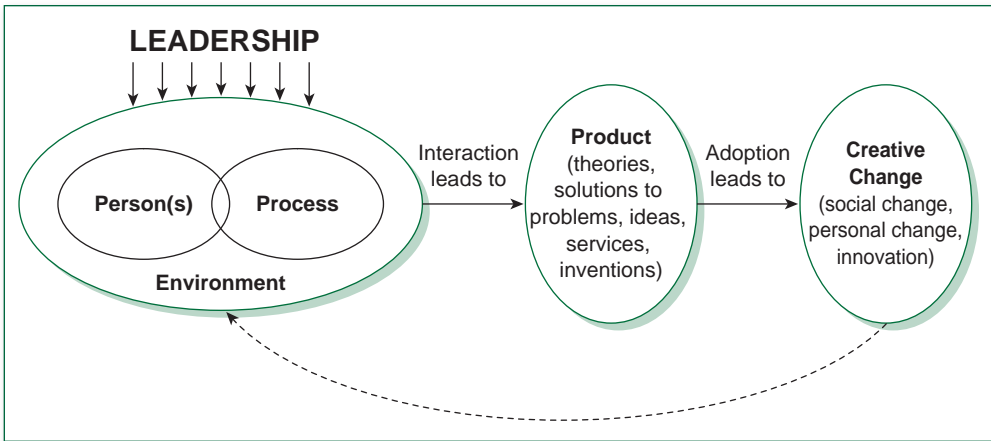
The three facets of person, process, and environment interact to yield particular outcomes. In other words, the quality of the creative product depends upon people working through certain processes in particular kinds of environments. People with the right skills, knowledge, and personal traits, who work through an effective process in an environment that is conducive to creative thought, are more likely to produce creative **products**—*tangible and intangible outcomes that are new and useful.*

Creative change does not automatically occur because an individual, team, or organization has developed a new product. **Creative change** can take on many forms and is defined as *the adoption of a creative product, a novel and useful idea that has been embodied in either an intangible or tangible form, which adds value to an individual, team, organization or society.* If the product is intended for use only by the individual creator, such as a new plan for stress reduction, then creative change occurs when this person has implemented the idea. By contrast, innovation occurs when an organization has successfully commercialized a new product or implemented a new program or service. The creative product is the starting point for business innovation, and according to Janszen (2000), "Innovation is generally accepted as being the golden route to building a growing and prosperous company" (p. 7). Soo, Devinney, Midgley, and Deering (2002) showed that organizations that were rated in the top 20% for innovation enjoyed more than 35% more market share than those organizations in the bottom 20%. So, if innovation is critical to the long-term success of an

organization, and the creative product is the impetus to innovation, then it will be critical for organizations to create the right interaction between the person, process, and environment. If organizational leaders do not nurture the basic elements that support creative behavior, it is unlikely that their organizations will be able to bring about creative change, whether that be an innovative product, social change, educational reform, new business model, enhanced levels of human service, and so on.

The system has an iterative aspect to it; that is, once a creative change has been successfully adopted, it is highly likely that this new idea, product, service, or practice will have a transformative effect on people, their processes, and their environments. Although this model focuses on the successful adoption of creative change, it is possible that, when a proposed change is rejected, this failure has the potential to have some measurable effect on people, processes, and environments as well.

This systems view of creativity illustrates why creativity is difficult to bring about in organizations. Like the ingredients in a recipe, although all have their own unique flavor, it is the combination of the ingredients that results in a complete dish. Figure 1.3 shows how these basic creativity elements interact with one another. For example, we know that training in creative thinking (i.e., process) improves the work climate (i.e, environment) of teams (Firestien, 1996). Individual personalities (i.e., person) influence the nature of the work environment (Ekvall, 1991). Formal training in creativity techniques and principles (i.e., process) significantly enhances individuals' thinking skills (i.e., person) (Parnes, 1987). Returning to the recipe metaphor, organizational creativity is achieved only when the right ingredients are combined. Assuming that an organization will be creative, for example, because it has hired highly creative people is like assuming that the only ingredient necessary to make a good chicken soup is the chicken itself.

To the traditional elements of creativity (i.e., person, process, environment, and product) found in this systems model, we add a new dimension—leadership. We rest leadership on top of the model, as a leader's behavior has an impact on the three initial factors. Specifically, leadership has a profound influence on the nature of the psychological environment. In other words, leadership goes a long way in setting the tone, which in turn influences people and the processes they engage in to produce creative outcomes. Leadership is the lubricant that allows the other elements to effectively interact or, in some cases, not. Effective leadership begins by establishing a creative atmosphere that supports people as they engage in creative thinking processes. In a way, the model is fractal, as those leaders who embrace and model creativity themselves—those who exhibit creative leadership—are more likely to act as lubricants for this system.

Creative Leadership: A Definition and Description

Leaders who wish to foster creative thinking and change must recognize the importance of all the facets of creativity. They must understand their own and others' creative abilities. They must master the creative process and be able to facilitate this process in others. They must find ways to build work environments that encourage creative thought. In short, leadership can have a profound impact on all facets of the systems model. Therefore, it is imperative that leaders recognize their own roles in this systems model. From our own practical experiences in working with organizations, and from mounting research evidence, it is clear that leadership has a deep influence on the creative output of an organization (Barnowe, 1975; Tierney, Farmer, & Graen, 1999; West et al., 2003; Zhou, 2008). And, as depicted in Figure 1.3, we suggest that leadership has a particularly strong influence on those dimensions that interact to yield creative products and ultimately creative change. Namely, leadership goes a long way in setting the tone and characteristics of the organizational environment; recruiting, selecting, training, and promoting individuals; and adopting creative processes, procedures, and policies.

The term leadership has taken on many connotations, definitions, and descriptions. To be perfectly clear, this book is about a specific kind of leadership, the kind of leadership that is forged through a desire for change, and not the generic form of change, rather a desire to deliberately bring something new into existence. Not all leadership involves creativity. In some situations, the aim of leadership is to move a group toward an established and known goal. A coach of a professional sports team leads his or her team toward the league championship, a principal of a school leads his or her faculty and students to a target on a statewide assessment, and an army officer might lead a group as they seek to accomplish a particular mission for which they have been assigned, and so on. In all these cases, an individual is attempting to guide a set of individuals toward a goal that is not novel—professional football teams share the same goal, to win the Super Bowl; states and countries often define student success for school districts; and military officers follow the orders of their superiors in regard to a particular mission.

Creative leadership, by contrast, can be defined as

> *the ability to deliberately engage one's imagination to define and guide a group toward a novel goal—a direction that is new for the group. As a consequence of bringing about this creative change, creative leaders have a profoundly positive influence on their context (i.e., workplace, community, school, family) and the individuals in that situation.*

This is not to say that creative thinking does not play an important role in other forms of leadership. To be sure, as a leader guides a group toward an established goal, there may be times, and there almost always are, when creative thinking will be necessary to overcome a challenge that impedes progress. The football coach who develops a new defensive scheme to stop an opponent's potent offense, the principal who finds imaginative ways to work within a period of budgetary reduction, and the military officer who must adapt to a new strategy in the face of an unanticipated event all employ creative thinking to guide others toward meaningful goals. In this way, creativity becomes a core competence of leadership in general.

The principles, procedures, and information in this book are useful in enhancing the creative competency of all who choose to lead so that they can both circumvent obstacles that impede progress toward a known goal, as well as to facilitate the successful adoption of a novel goal in groups, organizations, and communities.

◎   APPLYING WHAT YOU'VE LEARNED

The intent of this chapter was to underscore the critical link between leadership and creativity, which we maintain is change, thereby positioning creative thinking as a core competence of leaders. The close relationship between creativity and leadership was captured well when Simonton (1984) observed that "when the most famous creators and leaders are under scrutiny, the distinction between creativity and leadership vanishes because creativity becomes a variety of leadership" (p. 181). The following activities will help you deepen your understanding of this important connection.

1. What is your personal definition of creativity? How do you define leadership? Examine these definitions, and identify ways in which they relate. What are the conceptual connections?

2. Identify a leader in your life who had a profoundly positive impact on you. List the qualities that you believe made this person an effective leader. Inspect this list of qualities, and identify items that are closely related to creativity. Ask yourself the degree to which you possess these same qualities. Consider what you might do to develop some of the qualities you believe are most important.

3. Identify a leader who was successful in drawing out the creative thinking of others. What did he or she do, and what was the consequence of this ability to promote creative thinking in others? Now, consider a leader who undermined creative thinking. What did he or she do that had a negative influence on creativity? What was the consequence of his or her behavior?

We posed a question earlier in this chapter, now here's the answer. The middle column of Table 1.1 provides a summary of some of the characteristics associated with highly creative people (Davis, 1986). The other two columns were drawn from books on leadership in the 21st century (Bennis et al., 2001; Hesselbein et al., 1996).

2

Creative Problem Solving

A Framework for Creative Leadership

"Some look at things that are, and ask why. I dream of things that never were and ask why not?"

—George Bernard Shaw

CHAPTER AT A GLANCE

Many leadership experts have argued that one of the skills that distinguishes effective from ineffective leadership in the new millennium is the ability to successfully resolve complex challenges—the kind of problems, brought on by our rapidly changing work environments, that do not have easy answers. This chapter focuses on how the CPS process can be used by leaders to deliberately apply their imaginations to successfully address complex issues. The chapter begins by examining the kinds of problems that require creative thinking. We then compare the differences among management, creative management, and creative leadership, with a focus on how some of these leadership behaviors benefit from deliberately adopting creative thinking. The chapter closes by introducing you to the CPS process, its history and purpose, and its structure. The main function of this chapter is to help leaders recognize that they need to be creative problem solvers and that this is a process that can be deliberately learned and systematically applied.

◎ **APPLYING IMAGINATION TO SOLVE COMPLEX PROBLEMS: THAT'S WHAT LEADERS DO**

A 1921 Ford auto company calendar included the following quote attributed to Mark Twain, the great American satirist, "A great, great deal has been said about the weather, but very little has ever been done." Although there is some debate as to whether Mark Twain ever uttered or penned these words, the quote can easily be applied to modern-day life and conversation regarding the pace of change—while a great, great deal has been said about the pace of change, very little has been done. Unfortunately, leaders do not have the luxury of sitting idle and watching change occur around them. Just like those individuals who take a chance when they go outside without first listening to the weather reports and forecasts, leaders who do not pay attention to change are likely to suffer from a range of unpleasant consequences, from incremental change that may cause some mild discomfort to more radical change that threatens the survival of a cause, a team, or an organization. Take Sbarro, a privately owned New York-style pizza chain that barely survived 2009. This once highly successful pizza chain pinned its growth to establishing stores in malls and airports. When the great recession of the 2000s hit, pizza consumption declined, as did foot traffic in malls. Sbarro's competitors responded by adding other food items to their menus, such as breakfast and late-night snacks. Sbarro could not, as malls have limited hours of operation. They did not have the range of responses available to them as did Domino's and Pizza Hut—change happened, and Sbarro could not respond.

Change not only brings challenges but also provides opportunities. Knowing the weather forecast, especially the long-term forecast, provides us with opportunities to create new plans. Consider those surfers who travel on a moment's notice when they learn of especially good surf conditions—surfing enthusiasts can even pay to join websites that use computer models to predict swells. Blockbuster, the movie rental chain, provides a good example of an organization that was unable to leverage opportunities in a changing marketplace. For years, this company, with its 60,000 employees, dominated the movie rental business. However, they did not foresee changes in the industry brought on by the Internet age. Now, they are trying to catch up with the cable television companies and other movie rental providers, such as Netflix and Redbox, who make renting movies extremely convenient for their customers. Blockbuster is now trying to justify their fees through all sorts of programs, such as eliminating late fees, but it may be too little too late as Blockbuster filed for bankruptcy in September 2010.

To be successful, leaders must be able to use their imaginations to react to change as well as to proactively seize opportunities inherent in change. As the authors of a recent research review concluded, "It is important for leaders to actively seek out information regarding significant events in the environment, as well as emergent technologies that can be exploited" (Byrne, Mumford, Barrett, & Vessey, 2009, p. 260).

More evidence of how leaders employ their imaginations to embrace and drive change can be found in the *Harvard Business Review* study of innovative entrepreneurs (Dyer, Gregersen, & Christensen, 2009). The innovative leaders in this study included Michael Dell of Dell Computer, Herb Kelleher of Southwest Airlines, Jeff Bezos of Amazon.com, Mike Lazaridis of Research In Motion, Pierre Omidyar of eBay, and other highly successful entrepreneurs. With respect to how these leaders view change, Dyer and his colleagues drew two conclusions, "(1) They actively desire to change the status quo, and (2) they regularly take risks to make that change happen" (p. 66). Moreover, by studying these innovative entrepreneurs, Dyer et al. identified five discovery skills that leaders can learn and practice to promote their ability to generate and embrace new ways of thinking. These skills are presented in Table 2.1. We offer two observations about the five skills found in this table. First, the skills described here, with the exception of networking, have long been associated with creative thinking and, thus, reinforce the contention of this book—in today's ever-changing environment, creativity skills are crucial to successful leadership. Second, although these skills are presented as if they were discrete, there is much overlap, as one skill may serve to reinforce another. For example, the more an individual engages in networking activities, the more likely he or she will be to make associations across unrelated fields.

◎ KNOWING WHEN TO APPLY CREATIVE THINKING

The previous section pointed to the fact that leaders must employ their imaginations in the face of change. In this section, we more closely examine the kinds of problems that require creative thinking. It would be impractical to suggest that leaders must employ creative thinking for all problems and that individuals need to be creative leaders at all times. With this in mind, the purpose of this section is to help leaders determine when it is, and is not, necessary to bring their imaginations to bear on a problem. As we noted in Chapter 1, not all change is creative, and not all change requires you to respond with creative ideas.

Table 2.1   Learnable Leadership Discovery Skills

Discovery Skill 1: Associating

Description: Ability to draw from different fields to connect seemingly unrelated questions, problems, or ideas.

Example: Pierre Omidyar was inspired to form eBay from three unrelated experiences: (1) fascination in creating more efficient markets, (2) his fiancée's passion for collectible Pez dispensers, and (3) the limited usefulness of local classified ads in locating rare Pez dispensers.

Discovery Skill 2: Questioning

Description: Ability to ask questions that challenge prevailing thought and wisdom. Innovative entrepreneurs ask "why?," "why not?," and "what if?"

Example: Michael Dell asked why computers sold for five times the amount of the sum of their parts; the answer led to the creation of Dell Computer.

Discovery Skill 3: Observing

Description: Ability to act like anthropologists and social scientists, closely examining behaviors in others that then serve as a catalyst to breakthrough ideas.

Example: Ratan Tata, founder of Tata Motors in India, which produces a small family car that sells for roughly $2,500, got his inspiration from watching a family of four squeezed onto a motorized scooter.

Discovery Skill 4: Experimenting

Description: Willingness to actively test new ideas.

Example: Jeff Bezos's experiment with an online bookstore blossomed into the online retail giant called Amazon. Now, Amazon is experimenting with the Kindle, an electronic reader that may transform Amazon into an electronics manufacturer.

### Discovery Skill 5: Networking

Description: Interacting with others from a diverse array of fields and with individuals who possess different perspectives and ideas.

Example: Michael Lazaridis was inspired to develop the BlackBerry while attending a conference and listening to a speech on the wireless data systems used in vending machines.

Source: Dyer, Gregersen & Christensen (2009).

Figure 2.1 illustrates the kinds of problems that necessitate creative thinking. The matrix is based on two dimensions, the nature of the problem and the approach to that problem. The horizontal axis is divided between **reactive** and **proactive** approaches to problems. A reactive approach occurs when there is a change within an existing system, situation, or process. This change results in declining performance or the potential for negative outcomes; for example, a machine goes down on the manufacturing line, a cook is missing a key ingredient for a recipe, a child's sleeping pattern changes so the old bedtime routine no longer works, crime is up, sales are down, friction in the team is causing tension, or people are no longer paying attention to an advertising campaign.

In other situations, you may decide to take a proactive approach and seek forward thinking. A proactive approach to problem solving is about seizing new opportunities or finding ways to continuously improve existing circumstances. Proactive problem solving has much more to do with the pursuit of a vision or establishing goals; for example, a business pursues a new market, an inventor creates something that makes life easier, a health care provider introduces new services to the delight of its members, or a family seeks a different kind of vacation experience. In all of these cases, creative thinking has been used as a means to support forward thinking rather than as a response to a threat.

Figure 2.1   Types of Problems
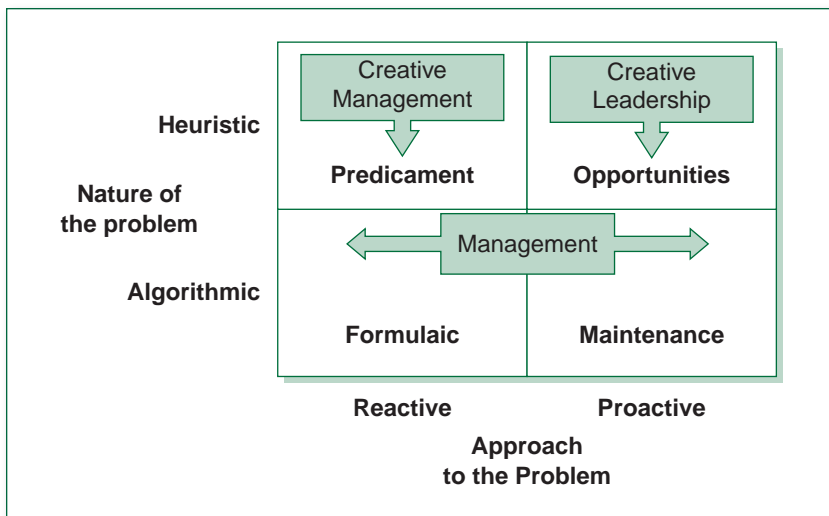
The vertical axis of Figure 2.1 refers to the nature of the problem, which can either be closed or open-ended. In closed-ended problems, the method for resolving the situation is known, and there is usually a single correct solution or a limited range of options. These kinds of problems are **algorithmic** problems because *they always lead to a single correct answer;* therefore, creative thinking is not required. In contrast, a **heuristic** problem is open-ended. *There is no set method to follow or obvious solution available.* For these problems, creative thinking is required. Deliberate creative thinking is not required when the method and solution are known, no matter whether the problem is reactive or proactive (i.e., the bottom portion of the matrix).

When the two types of approaches to problems are crossed with the two kinds of problems, four different kinds of problem scenarios emerge. In the lower left quadrant, you have the **formulaic** scenario. *This is a situation in which something changes or breaks down, and by simply following a process or formula, the situation can be corrected.* When you anticipate a future change that will negatively impact performance and you know what needs to be done to avoid any negative consequences associated with this change, you are operating in the lower right quadrant in a **maintenance** scenario. For example, people regularly change the oil in engines because they anticipate negative consequences if they do not. You need very little creative thinking to carry out routine maintenance.

Creative thinking is required, however, when the nature of the problem is heuristic, the top portion of Figure 2.1. When something goes wrong in an existing situation and you are unsure about how to correct the problem, you need creative thinking. You also need creative thinking when you perceive an external threat that will change current levels of success, such as the entry of a new competitor to the marketplace or an anticipated change to regulatory policies. These are examples of problems that we refer to as a **predicament** (see the upper left quadrant). A predicament is *a difficult, complicated, or perplexing situation for which a new approach must be devised to return to former levels of performance.* You have a predicament when something threatens current levels of performance and you need to discover or invent the best way to respond. You might be familiar with the well-known line, "Houston, I think we have a problem." It may be more accurate to say, "Houston, I think we have a predicament."

When you find yourself in the upper right quadrant, you are presented with an **opportunity**, *a favorable juncture of circumstances.* These are situations in which you decide to actively pursue some desirable possibility; for example, you believe there are unmet consumer needs in your market, you use an accidental discovery to create a new industry,

or you believe there are new ways to structure schools. Because predicaments and opportunities are open-ended, leaders must discover or invent solutions, and this process is greatly enhanced through the deliberate application of creative thinking.

These quadrants are not isolated; situations can shift and unfold in ways that move a problem from one quadrant to another. Let's look at a real example. Can you imagine waiting in line for over an hour to buy a doughnut? Seems crazy, doesn't it; but, this is exactly what happened when Krispy Kreme Doughnuts opened a new shop. Krispy Kreme, a chain of doughnut shops, aggressively expanded its business in the 1990s. In fact, during this time, they were one of the fastest growing chains in America. This explosive growth occurred during the height of America's appetite for doughnuts. Today, for a variety of reasons, doughnut consumption is significantly down. Krispy Kreme was faced with a problem and responded by employing standard solutions, for example, cutting costs and closing underperforming stores. Given this reaction, it would seem as though Krispy Kreme viewed their problem as a formulaic scenario and, as such, responded with the standard strategies. Unfortunately, these solutions have not been highly successful, as the company has not seen many profitable quarters between 2006 and 2010. So, what was initially tackled as a formulaic problem may have shifted into a predicament—a perplexing situation that requires a creative response. It was completely reasonable to begin addressing this problem by employing the standard solutions, but as these solutions did not work, it would seem as though the time has come to try more original ideas. For instance, one of Krispy Kreme's current strategies is to establish franchises overseas where the market is not saturated by other doughnut shops. Apparently, Krispy Kreme shops in overseas locations, such as Hong Kong, Malaysia, South Korea, Turkey, and Australia, are drawing large crowds.

We referred to Krispy Kreme's current situation as a predicament and not an opportunity. Why? While the organization is applying imagination to reduce the fat content in their doughnuts and have broken out of the domestic market, these are far from being game-changing propositions. Krispy Kreme is fundamentally in the same business, and they are reacting to the same goal; whether their doughnuts are low in saturated fat or sold overseas, their core business is aimed at making a profit by selling doughnuts. We can stay with the food industry to find an example of an opportunity—the breakfast sandwich. Although for many, it would seem that the fast-food giant McDonald's has always served breakfast, this has not always been the case. Before the early 1970s, McDonald's stores served only lunches and dinners,

that is, until the Egg McMuffin came along. Herb Peterson, owner of a number of McDonald's franchises in California, is credited with the creation of the Egg McMuffin. As a fan of eggs Benedict, Peterson saw an opportunity to expand the current McDonald's business into breakfast. The first Egg McMuffin was prepared for sale at the Fairview McDonald's in Goleta, California, in 1972.

The story doesn't end there. Peterson invited Ray Kroc, founder of McDonald's, to visit his store and try the new creation. As Ray Kroc (1987) wrote in his book:

> It was a crazy idea . . . but then I tasted it, and I was sold. Wow! I wanted to put this item into all of our stores immediately. Realistically, of course that was impossible. It took us nearly three years to get the egg sandwich fully integrated into our system. (p. 174)

Kroc may not have come up with the idea for the Egg McMuffin, but he was good at spotting opportunities and an entire new line of business was founded from this one tiny sandwich. Some 30 years later, McDonald's breakfast sales exceeded $6 billion annually and accounted for roughly 25% of all U.S. sales (Garber, 2005).

◎ MANAGEMENT, CREATIVE MANAGEMENT, AND CREATIVE LEADERSHIP: WHAT'S THE DIFFERENCE?

We present Figure 2.1 to highlight the kinds of problems that require creative thinking and those that do not. As creativity experts, we do not wish to convey a belief that all problems require a creative approach; this is simply not the case. Throughout the course of their work, leaders are faced with all four problem scenarios described in Figure 2.1; the trick for leaders is to effectively diagnose the nature of problems and then to respond accordingly. The distinctions made among these problem scenarios help to identify three types of behaviors leaders can engage in when they respond to problems, and we believe these behaviors help to clarify the difference between management and leadership.

Are the processes, the concomitant behaviors associated with management and leadership, one and the same? Are the terms management and leadership synonymous? Many agree that management and leadership imply different concepts and have written about the fundamental differences between these two constructs (e.g., Bennis & Nanus,

1985; Gardner, 1990; Kotter, 1990; Munitz, 1988; Palus & Horth, 2002; Zaleznik, 1977, 1998).

Bennis and Nanus (1985), for example, interviewed 60 successful CEOs and 30 outstanding public sector leaders and found a clear contrast between management and leadership. They reported:

> There is a profound difference between management and leadership, and both are important. "To manage" means "to bring about, to accomplish, to have charge of or responsibility to conduct." "Leading" is "influencing, guiding in direction, course, action, opinion." The distinction is crucial. Managers are people who do things right and leaders are people who do the right things. (p. 21)

Bennis and Nanus summarized their findings by saying that management is driven by efficiency, a focus on mastering routine activities, where leadership is motivated by effectiveness.

John Kotter (1990), a business professor at Harvard University, described both leadership and management as processes. Kotter maintained that leadership is a process whose function is to produce change, while management is a process focused on producing consistent outcomes. Along similar lines, Fullan (2001) contrasted leadership and management in the following way:

> I have never been fond of distinguishing between leadership and management: they overlap and you need both qualities. But here is one difference it makes sense to highlight: leadership is needed for problems that do not have easy answers. . . . For these problems there are no once-and-for-all answers. Yet we expect leaders to provide solutions. (p. 2)

As exemplified in the views above, it would seem that management is focused on maintaining the present situation, while leadership is focused on complexity and change, not just any change but creative change, that is, bringing a new idea or approach into existence. It would seem, therefore, that creative thinking is generally associated with leadership and not with management. This bias can be seen in Zaleznik's (1998) update to his classic, and oft cited, essay on the difference between managers and leaders. As Zaleznik (1998) suggested:

> It seems to me that business leaders have much more in common with artists, scientists, and other creative thinkers than they do with managers. For business schools to exploit this commonality of dispositions and interests the curriculum should worry less about the logics of strategy and imposing the constraints of computer exercises and more about

thought experiments in the play of creativity and imagination. If they are successful, they would then do a better job of preparing exceptional men and women for positions of leadership. (p. 87)

We do not subscribe to the prevailing wisdom that seems to indicate that leadership involves creativity and management does not. Indeed, we fell into this same line of thinking in the first edition of this book. Upon reflection, we believe that this is a gross and imprecise distinction. Let us be clear; we suggest that to be successful, a leader must engage in at least three distinct and broad processes, that is, sets of behavior. **Management**, as described above, is *a process that focuses on using standard procedures to sustain the present situation.* Management, as a process, is most appropriately applied to formulaic and maintenance problems, as the goal is to respond to change, either by reacting to it or proactively anticipating it by using known procedures to maintain the status quo. Here, there is no need for creative thinking, and there are times when leaders simply need to engage in management behavior.

Sometimes, however, the situation requires a novel response in order to return to former levels of performance. Again, we refer to this situation as a predicament. There has been a change that has modified current levels of performance, and the tried-and-true ways of responding are unlikely to work, so the leader must find a new approach that will rectify the problem. We call this process **creative management**— *creative thinking is applied to develop original solutions that enable the situation to return to prior levels of performance.* For example, if Krispy Kreme is able to make a reduced-fat doughnut that is as appealing as their original doughnuts, and as a consequence, sales return to their former levels, then it could be concluded that they creatively managed their profitability problem. The intent of creative management is not to change the goal but to change the solutions or approaches used to achieve the goal.

Finally, there are times when the leader becomes aware of an opportunity, such as the Egg McMuffin example shared earlier. In such cases, the leader is engaged in the process we call creative leadership. And, as described in Chapter 1, **creative leadership** is *deliberately engaging one's imagination to define and guide a group toward a novel goal— a direction that is new for the group.* Both Peterson, the developer of the Egg McMuffin, and Kroc, the person who leveraged this new opportunity, displayed creative leadership behavior when they embarked on the pursuit of McDonald's breakfast business.

Through this discourse, we want to underscore two important points. First, both managers and leaders use creativity in their work, just in different ways. Managers use creativity to solve problems that threaten the status quo, while leaders use creativity to pursue new directions. Second, we want to make a distinction between the person and the process. When we discuss managers and leaders, we are referring to people, while the terms management, creative management, and creative leadership refer to behaviors. Whether someone is a manager or leader, to be successful over time, he or she will need to master these three sets of behavior—management, creative management, and creative leadership.

◎ LEADERS ARE CREATIVE PROBLEM SOLVERS

The kinds of problems leaders face, predicaments and opportunities, necessitate creative problem solving. As Byrne et al. (2009) offered at the conclusion of their published study of what leaders do and think to promote creative efforts:

> Due to the complex nature of the behaviors and considerations required, developing the skills needed to lead innovation will take a substantial amount of time, and this development should occur in a systematic way. Leader training should involve the enhancement of creative problem-solving skills and reshaping the common assumptions often held about creative work. (p. 265)

This quote summarizes a major focus of this book, the systematic development of leaders' creative problem-solving skills.

Building directly from the recommendation provided by Byrne et al., we now turn to a process model designed to promote creative problem-solving skills. Suppose you had a treasure map that would lead you to gold no matter where or when you used it—all you had to do was set a few goals, figure out the general direction, and know how to effectively use the map under a variety of conditions. The CPS process is a thinking and doing map that will get you the gold—the nuggets of ideas and the glimmer and shine of implementation. Many people have used the CPS map over the years. It has a rich history, and variations of its conceptual model have been widely adopted to deliberately foster creative thought. We suggest that leaders can learn to use this map to more skillfully respond to problems that require creative change. Box 2.1 gives a brief overview of CPS history.

BOX 2.1 HISTORICAL NOTE

Creative Problem Solving: A Brief History

Our center—the International Center for Studies in Creativity—was founded on the pioneering work of three individuals. Alex Osborn, an advertising executive who developed the creative thinking tool brainstorming, was the originator of the CPS process and model. Osborn began his work on deliberate creativity in the 1940s. In the 1950s, he teamed with a college professor, Sidney Parnes, to further develop and research CPS. The early studies carried out by Parnes demonstrated that training in the CPS process enhanced individuals' creative thinking skills (Meadow & Parnes, 1959; Meadow, Parnes & Reese, 1959; Parnes & Meadow, 1959, 1960). Parnes in turn teamed with Ruth Noller, originally a professor of mathematics, to design, deliver, and test the groundbreaking college curriculum in creativity at Buffalo State College (Noller & Parnes, 1972; Parnes & Noller, 1972a, 1972b, 1973; Reese, Parnes, Treffinger, & Kaltsounis, 1976). At the same time that research into the impact of CPS training was occurring, the model itself was being modified. Lessons learned through research and application guided the evolution of the CPS model. Although the original seven-step model introduced by Osborn in 1953 (i.e., Orientation, Preparation, Analysis, Hypothesis, Incubation, Synthesis, and Verification) has changed through the years, current versions of the process still retain many of the hallmark features found in the early work. For a review of the evolution of CPS, see Puccio, Murdock, and Mance (2005) and Isaksen and Treffinger (2004).

Since Osborn first introduced CPS in the 1950s, the process has undergone continuous development and research, keeping it dynamic and fresh. The basic reason why the CPS process has stood the test of time is that it works! What makes the CPS process work so well? Here are four basic reasons:

1. The CPS process parallels people's natural creative thinking processes by efficiently organizing what happens when they work with problems. This means that CPS has an intuitive base that is easy to tap into in more explicit ways.

2. Through the alternating phases of divergent (generating options) and convergent (evaluating options) thinking, and the use of tools that support them, CPS provides a way to manage that most ferocious opponent of creative thinking—premature or inappropriate judgment.

3. CPS combines thinking with doing, which helps people accomplish concrete actions and get results from their initial ideas.

4. Finally, CPS provides a flexible format that is capable of taking in many creativity tools and approaches.

Creative Problem Solving: Some Basic Terms

What do we mean when we talk about CPS? **CPS** is *a comprehensive cognitive and affective system built on our natural creative processes that deliberately ignites creative thinking and, as a result, generates creative solutions and change.* The CPS process has a dual function: thinking and doing. As human beings, we are not strangers to thinking and doing, or we would not have survived and thrived this long. But, we are less familiar, and often less comfortable, with being deliberate about the processes we use. To be clear, a **process** is defined as *a particular method of doing something, generally involving a number of steps or operations.* CPS as a deliberate creative process takes intuitive responses to open-ended problems and moves them from trial and error to targeted strategies. In accomplishing this, CPS (1) influences how people think about themselves and the world around them in relation to change; and (2) improves individual and team performance for problems that appear to have no immediate solution.

Does this sound like a natural partner for leadership? We think so—especially since leaders have to think differently. Because novelty is inherent in creative change, leaders often confront novel situations that have no set procedure or single right pathway forward. Under such conditions, leaders have to help their intuition along a bit—there is a need for deliberate creative thinking, and this is the job of CPS. It's the map that can lead you to the gold. Again, when we say **creative** we mean *the production of ideas or options that are both new and useful,* and this is the outcome leaders are searching for when they are challenged by novel situations. Discovering new ways to improve customer service, finding the next product idea to stay ahead of the competition, identifying energizing ways to engage learners or revitalizing a city are examples of the kinds of novel and complex situations that require leaders to search for creative solutions.

We will now turn to the second word in the CPS acronym, problem. We look at **problem** in its broadest sense to describe *what exists when there is a gap between what you have and what you want.* This gap creates dissatisfaction, and dissatisfaction, in turn, creates interest in finding some means for closing the gap. Mumford et al. (2000) indicated

that leadership problems are quite different in their nature from managerial problems. They defined the types of problems leaders face as being **ill-defined** (i.e., *no single solution path*), **novel** (i.e., *the situation is either changing or new*), and **complex** (i.e., *information is missing or it is difficult to determine what is relevant*). Their definition captures the kinds of problems CPS is designed to address.

Finally, by **solving** we mean *taking action in some way*—it's the implementation part of the CPS process. Here, solving implies finding answers or resolutions to situations, but it also encompasses everything involved in looking for or refining those answers. Creativity isn't complete by just thinking about something new or useful—it is the direct result of someone taking action and bringing a new idea to fruition. CPS as a process is about transforming creative ideas into creative solutions for complex problems, thereby leading to productive change.

Since its introduction more than 50 years ago, CPS is one of the most widely used creative process models in both education and industry. Given its popularity, CPS has been the subject of many research studies. These studies have empirically evaluated the effectiveness of CPS training. If you are interested in the research that supports the impact of CPS, see Box 2.2.

BOX 2.2 RESEARCH NOTE

Does Creative Problem Solving Work?

In the late 1960s and early 1970s, Parnes and Noller carried out a comprehensive examination of the impact of CPS training. The Creative Studies Project is reported in a number of literature sources (see Parnes, 1987; Parnes & Noller, 1972a, 1972b, 1973; Reese et al. 1976). Parnes and Noller studied the effects of four semester-long creativity courses on undergraduate students. The main creativity model featured in this educational program was CPS. Students entering the freshman class at Buffalo State College were invited to participate in the research study. Volunteers were randomly assigned to either an experimental group, who were enrolled in the four creativity courses taught over a two-year period, or to a control group, who were not enrolled in the creativity courses.

Pre- and posttest paper-and-pencil measures were administered to all students in the study. Many of these measures were drawn from Guilford's Structure-of-the-Intellect model (Guilford, 1977). These comparisons revealed that the experimental group had statistically significant gains after the training in comparison to the students in the control group. The students who participated in the creativity courses showed significant differences on measures of divergent production, convergent production, and cognition.

A number of other researchers have conducted studies in which various creativity programs have been compared in regard to their effectiveness (Rose & Lin, 1984; Scott, Leritz, & Mumford, 2004a, 2004b; Torrance, 1972; Torrance & Presbury, 1984). Such studies supported the positive effects of CPS training. Torrance (1972), who studied the effectiveness of nine different kinds of creativity programs, found that CPS achieved the highest percentage of success (i.e., 20 of the 22 studies yielded significant results). Rose and Lin (1984) conducted a meta-analytic evaluation of creativity programs. To provide a basis for their evaluation of different creativity programs, Rose and Lin evaluated research studies that used the Torrance Tests of Creative Thinking as a measure of the impact of training. In examining the effect training had on Torrance's measure of creative-thinking skills, these authors concluded that the substantial impact of CPS on verbal creativity provided clear evidence for its effectiveness. A more recent comparative analysis by Scott et al. (2004b) found that cognitively oriented creative process programs, such as CPS, proved to have positive effects on participants.

Many of the studies involved in these comparative reviews were carried out in educational contexts, but what about the impact of CPS training in organizational settings? A number of studies have empirically evaluated CPS training with professionals, perhaps most notably, the program of research carried out by Basadur and his colleagues. Basadur, Graen, & Green (1982) demonstrated that employees trained in CPS outperformed control and placebo groups. For example, employees trained in CPS were more fluent in generating new product ideas, produced better ideas for new products, and were more effective at problem finding. Basadur, Graen, and Scandura (1986) reported that CPS training significantly enhanced engineers' attitudes toward divergent thinking. Basadur went on to demonstrate that similar results could be achieved with managers in Japan (Basadur, Wakabayashi, & Takai, 1992) and South America (Basadur, Pringle, & Kirkland, 2002). He also reported the positive effects of CPS training on union–management negotiations. According to Basadur, Pringle, Speranzini, and Bacot (2000), CPS training improved trust between negotiating parties and resulted in new solutions. Positive results of CPS training in the workplace have been reported by Kabanoff and Bottger (1991); Fontenot (1993); Wang, Wu, and Horng (1999); Wang and Horng (2002); and Wang, Horng, Hung, and Huang (2004). See Puccio, Firestien, Coyle, and Masucci (2006), and Puccio et al. (2005) for a review of additional CPS impact studies in organizations.

As a result of a quantitative analysis of creativity programs, Scott et al. (2004a) concluded that creativity training does work. Specifically, training has been shown to significantly impact divergent thinking, problem solving, performance, attitudes, and behaviors. These authors cited CPS as one of the more successful creativity programs. This success was attributed to this program's description of "the key cognitive processes underlying creative thought" (p. 283) in combination with strategies for applying these processes.

## ◎ CREATIVE PROBLEM SOLVING: INTRODUCING THE THINKING SKILLS

So what is CPS, and how does it work? In this section, we present our current view of the CPS process along with a graphic model that depicts how the process operates. As we noted earlier, the CPS process has been refined through the years, and what we present is an extension of this work. Also, it should be noted that, given the extent to which CPS has been diffused, there are alternative conceptions of this deliberate creative process in use; for example, see Basadur (1994); Isaksen, Dorval, and Treffinger (2000); Miller, Vehar, and Firestien (2001); and Parnes (2004). Figure 2.2 presents our view of CPS—an approach that we think works for developing the thinking skills related to creativity, which help leaders effectively respond to predicaments and take advantage of perceived opportunities. Since this version of CPS is the first to specifically articulate the thinking skills associated with each step of the process, we refer to it as *Creative Problem Solving: The Thinking Skills Model.* The remaining chapters in Part I of this book go more deeply into the specific thinking skills associated with the CPS model.

Model Structure

The structure of CPS, working from the outside inward, is comprised of three conceptual stages, six explicit process steps with six repetitions of divergence and convergence within each, and one executive step at the heart of the model to guide them all. The three conceptual stages—*Clarification, Transformation,* and *Implementation*—are related to your natural creative process. These are general terms that identify the beginning, middle, and end of the creative process. People implicitly move through them in a natural progression whether they are consciously aware of it or not. For instance, to get started with any process, you must understand *what needs to be resolved* **(Clarification Stage)**. Next, you need to *identify potential ideas and craft them into workable solutions* **(Transformation Stage)**. Finally, you need to *refine the solutions and put together a plan for taking effective action* **(Implementation Stage)**.

In fact, Mintzberg, Duru, and Theoret's (1976) examination of real-life problem solving yielded three major phases labeled *identification* (understanding the problem), *development* (creating potential solutions), and *selection* (deciding among the solutions). Various researchers have identified similar three-stage descriptions of problem solving (Johnson & Jennings, 1963; Simon 1965, 1977). After reviewing the problem-solving research, cognitive psychologist Geir Kaufmann (1988) concluded,

Figure 2.2   Creative Problem Solving: The Thinking Skills Model
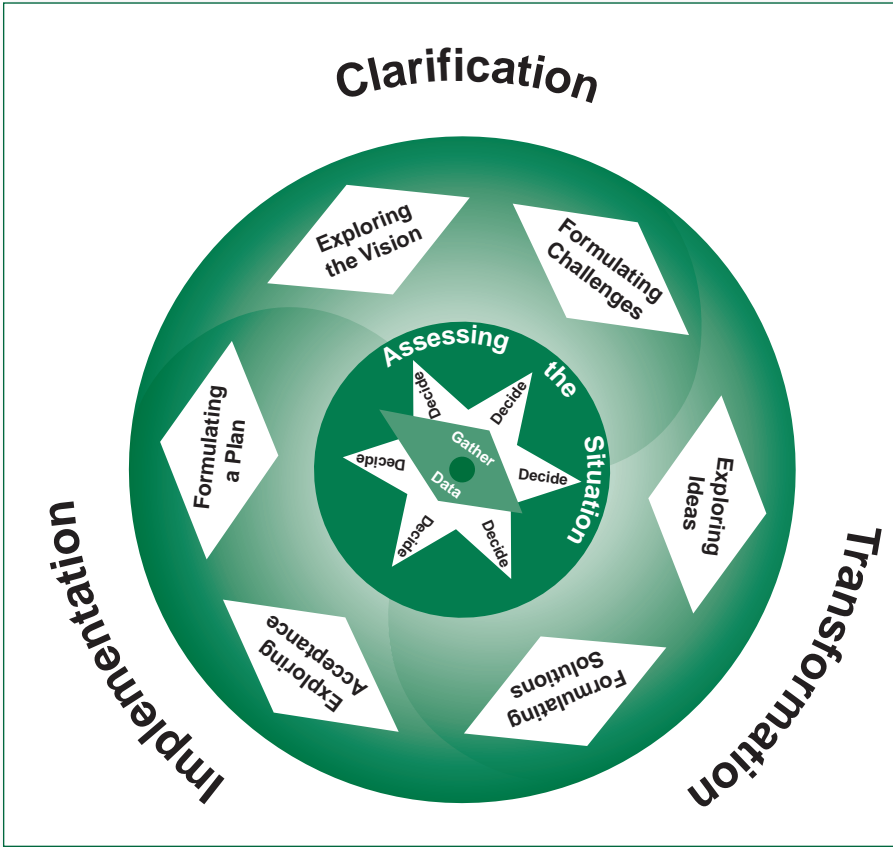
"There is a striking agreement in the literature describing the phases of a problem-solving event. Normally, three major phases are identified" (p. 98). We believe these three phases are reflected in CPS.

Although the basic stages of the problem solving process have been shown to be empirically distinguishable, researchers have found that people will naturally move forward, backward, and across these elements (Mintzberg et al., 1976). So, although the three stages of CPS represent the natural progression individuals go through when faced with an open-ended problem, it is not always the case that this flow will occur in a sequential manner. Sometimes, it may seem like you have skipped stages, but in reality, your mind is working so quickly that you may not be aware of your stages of thought, or the issue may be relatively simple and require less time to process.

Understanding the basic structure of CPS can help when you get lost in nonsystematic, explicit use of the creative process. For example, have you ever been in a meeting where things got so complicated that you lost track of where you or others were in the conversation? Or have you ever heard people say things like the following: "Where are we going with this?" "What are we supposed to be doing?" "It feels like we are going in circles." If you find yourself wondering, "aren't we just spinning our wheels here?," then, you probably are! Think of the CPS model as a cognitive map and the three stages as major regions within this map. When you find yourself lost while addressing a predicament or pursuing an opportunity, use the CPS cognitive map to guide yourself out of the woods. Ask questions related to the CPS framework to help locate yourself within the process. "Do I, or we, need to further clarify this situation?" "Have I, or we, explored a sufficient number of ideas to identify a potential solution to this situation?" "Am I, or are we, committed to a solution to be implemented?" Such questions can help get a derailed process back on course.

The formal application of CPS involves six explicit process steps. These six steps are designed to help enhance people's effectiveness by linking their natural processes to a systematic and explicit series of operations. The six formal steps of CPS are: *Exploring the Vision; Formulating Challenges; Exploring Ideas; Formulating Solutions; Exploring Acceptance;* and *Formulating a Plan.* In each natural process stage, there are two steps—the first explicit step begins with the word *exploring,* and the second step begins with *formulating* because the first is more general or abstract than the second. In this manner, the movement from the first step in each stage to the second should represent a transition from the exploration of broader concepts to the formalization of more concrete outcomes. Clarification begins with the broad examination of a vision (Exploring the Vision) and concludes with the identification of specific challenges that must be addressed in order to achieve the vision (Formulating Challenges). Transformation begins with the broad search for potential ideas to address the previously identified challenges (Exploring Ideas) and ends with the best ideas being developed into concrete solutions (Formulating Solutions). Finally, Implementation starts with a review of the factors that will help or hinder the successful advancement of the solution (Exploring Acceptance), which are then used to create a detailed plan of action (Formulating a Plan).

Each of the six steps is represented by a diamond-shaped figure that shows the internal phases of divergent (i.e. generating options) and convergent (i.e. selecting or evaluating options) thinking within

each step. This repeating function continuously separates and then applies the use of judgment in a balanced way, giving change and novelty a better chance at surviving the powerful censors that people often place on something new. This balance between divergent and convergent thinking has been the hallmark of the CPS process and, as such, is described in further detail in Chapter 3.

The six explicit steps have no required order for use, although they are presented here in the natural flow of the conceptual stages. You can begin with any step that you need or want to; you can go back if you realize you forgot something or just think it's a better place to be at the time. You can skip over any of them if you have what you need. Effectively using CPS is like going to the checkout line when you have finished your shopping—it's not the number of items that you have in your cart that indicates you are finished but the fact that you have all you came for, that your purpose was accomplished.

There is one more step to the CPS process, the executive step, called Assessing the Situation. We refer to Assessing the Situation as the executive step because it helps you to stand above the other steps to determine where to go in the process and how to progress through it. Assessing the Situation involves the use of metacognitive thought. Based on Flavell's (1976) work, we define **metacognition** as *an individual's ability to monitor and control his or her own cognitive processes.* Simply put, metacognition means thinking about your own thinking. When Assessing the Situation, you gather data and use this data to make decisions about how to proceed. As such, the higher-order function of this step becomes the gateway to the six explicit steps—sources of data in the form of facts, intuition, feelings, or answers to questions will enable you to determine which of the six CPS steps will be most useful in addressing a predicament or opportunity. Since there is no predetermined second step in CPS, the diagnosis of information from Assessing the Situation determines where you should go next. Use of the rest of the model is based on what the situation dictates: Do you need to explore or formulate, and if so, how—by clarifying, transforming, or implementing? CPS is a thinking person's process. You can't switch on autopilot and switch off thinking. You don't simply take every situation, no matter what its qualities, and force it through the whole model, although if you need all the steps, you can certainly use them. This flexible nature of CPS is a characteristic that has made it useful and enduring, and that flexibility makes it appropriate to lead change effectively.

We have presented many concepts in this chapter. Box 2.3 provides a summary of some of the key vocabulary referred to in this chapter.

BOX 2.3 KEY VOCABULARY

Some Key Concepts From Chapter 2 Organized by Category

Types of Problems

Formulaic: *a situation in which something changes or breaks down, and by simply following a process or formula, the situation can be corrected.*

Maintenance: *a situation in which one anticipates a future change that will negatively impact performance, and a known procedure or solution can be used to avoid any negative consequences associated with this change.*

Predicament: *a difficult, complicated, or perplexing situation for which a new approach must be devised to return to former levels of performance.*

Opportunity: *a favorable juncture of circumstances in which you decide to actively pursue some desirable possibility.*

Leader Behaviors

Management: *a process that focuses on using standard procedures to sustain the present situation.*

Creative Management: *a process in which the leader applies creative thinking to develop original solutions that result in the situation returning to prior levels of performance.*

Creative Leadership: *a process in which a leader deliberately engages his or her imagination to define and guide a group toward a novel goal— a direction that is new for the group (see elaborated definition found in Chapter 1).*

Creative Problem Solving Terms

Creative Problem Solving (CPS): *a comprehensive cognitive and affective system built on our natural creative processes that deliberately ignites creative thinking and, as a result, generates creative solutions and change.*

Process: *a particular method of doing something, generally involving a number of steps or operations.*

Metacognition: *an individual's ability to monitor and control his or her own cognitive processes.*

◎ APPLYING WHAT YOU'VE LEARNED

In this chapter, we explored the types of problems that require creative thinking and those that do not. We described how leaders, to be effective, must employ their imaginations to resolve complex problems. To that end, we introduced CPS, a creative process with a long-standing history that can be learned and practiced by leaders to address predicaments and pursue opportunities. Leadership is more about what you do than who you are, and therefore, because leaders are required to respond imaginatively to change, CPS can be used as a tool by leaders to make themselves more effective.

1. Identify a problem you successfully solved. Think back to the process steps you went through in solving this problem. Record these steps and then compare them to the CPS process described in this chapter. How is what you did similar to CPS? How is it different? In what ways might an explicit creative process, such as CPS, help to improve your effectiveness? What aspects of CPS do you feel come most naturally to you? What aspects of CPS do you think will be most beneficial for you to learn? Why?

2. Make a list of all the personal and professional problems that currently exist in your life. Using Figure 2.1 in this chapter, diagnose the nature of each problem. Which of these problems fall into the formulaic category? Are there those that are more like maintenance issues? Which of the problems from your list require creative thinking? Do some of these predicaments, situations that you are responding to, require new thinking, while others are opportunities, new goals, or directions for you? Did any of these situations change over time? Can you find examples of a problem that might have initially fallen into a category and then, over time, migrated to a new category? Why or how did this happen?

3. Find a story or an example of a leader who demonstrates the use of management, creative management, and creative leadership processes. What did it look like when this leader was engaged in management? What behaviors did he or she exhibit when involved in creative management? What were the distinguishing features demonstrated by this leader when he or she exhibited creative leadership tendencies? With respect to creative management and creative leadership processes, what did the leader do to get his or her new way of thinking accepted by others? From this analysis, what can you learn about your own effectiveness as a leader?