WICS: A Model of Leadership in Organizations

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In this article I present a model of leadership—WICS—that encompasses wisdom, intelligence, and creativity, synthesized. I open with a general discussion of issues in models of leadership, then discuss the role of intelligence, dividing the discussion into academic and practical aspects. Next I deal with the roles of creativity and wisdom in leadership, turning to a discussion of the synthesis of the model’s elements. Finally, I state how WICS-based leadership skills can be developed.

THREE COMPONENTS OF LEADERSHIP: THE WICS MODEL

If traditional models of leadership (see Antonakis, Cianciolo, & Sternberg, in press, for a comprehensive review) are too narrow, what model would be broader and more encompassing? One possible answer is WICS (an acronym for wisdom, intelligence, and creativity, synthesized; Sternberg, 2003; see also Sternberg & Vroom, 2002).

According to this model, the three key components of leadership are wisdom, intelligence, and creativity, synthesized (WICS). The basic idea is that one needs these three components working together (synthesized) in order to be a highly effective leader (see Figure 1).

One is not “born” a leader. Rather, wisdom, intelligence, and creativity are, to some extent, forms of developing expertise (Sternberg, 1998a, 1999a). One interacts with the environment in ways that utilize, to varying degrees, one’s innate potentials. The environment strongly influences the extent to which we are able to utilize and develop whatever genetic potentials we have (Grigorenko & Sternberg, 2001; Sternberg & Grigorenko, 1997, 2001). Many people with substantial innate potential fail to take much advantage of it; whereas others with lesser potential do take advantage of it.

Some scholars deal with the question of whether leadership is anything more than good management. Intuitively, leadership seems related to management, but perhaps it involves something more. The relationship between leadership and management has been debated for decades by academics and practitioners. Two alternative positions have emerged: that the concepts are distinct or that they are interrelated.

According to the first position, management and leadership are qualitatively different concepts. Often the semantics are shifted to make the distinction between managers and leaders rather than management and leadership. For example, Zaleznik (1977) proposed that managers and leaders are different types of people in terms of their motivation, personal history, thoughts, and behaviors. Managers are problem solvers who create goals in order to maintain the stability of the organization. Leaders are visionaries who inspire workers to take part in their own and the organization’s development and change. Bennis and Nanus (1985) also propose that leaders and managers differ qualitatively in their perspectives and willingness to implement change. Managers have a narrow perspective that is concerned with mastering routines to ensure the efficiency of daily operations. Leaders, in contrast, have a broad perspective that allows them to assess the organization’s needs, envision the future, and implement change.

Kotter (1987) makes a distinction between leadership and management in terms of the processes involved rather than the personalities of individuals. Management tends to be a formal, scientific,
and present-oriented process; whereas leadership tends to be an informal, flexible, inspirational, and future-oriented process.

There are others, however, who view leadership and management as overlapping processes that fulfill the functions or expectations of an organizational role. Mintzberg (1975), for example, suggests that one of the functions of the manager’s role is to be a leader. According to this perspective, the term manager is a role label, while leader is a role function. Leadership is a process associated with the functions of a leader. Yukl (1989) and Lau and Shani (1992) suggest that the functions associated with supervisory positions in organizations require the incumbent to be both a leader and a manager. Bass (1990) similarly suggests that leaders must manage and managers must lead. These researchers consider the terms leader and manager to be interchangeable.

In the following I review our work on intelligence, creativity, and wisdom, as they have relevance for leadership (as well as for management). I concentrate on intelligence, because it is a base for creativity and wisdom, and because we have collected the most data investigating it.

Intelligence

Intelligence would seem to be important to leadership, but how important? Indeed, if the conventional intelligence of a leader is too much higher than that of the people he or she leads, the leader may fail to connect with those people and become ineffective (Williams & Sternberg, 1988). Intelligence, as conceived of here, is not just intelligence in its conventional narrow sense—some kind of general factor (g) (Demetriou, 2002; Jensen, 1998, 2002; Spearman, 1927; see essays in Sternberg & Grigorenko, 2002) or IQ (Binet & Simon, 1905; Kaufman, 2000; Wechsler, 1939), but rather, is intelligence in terms of the theory of successful intelligence (Sternberg, 1997, 1999c, 2002c). Successful intelligence is defined as the ability to succeed in life, given one’s conception of success, within one’s sociocultural environment. Two aspects of the theory are especially relevant: academic and practical intelligence (see also Neisser, 1979). (A third aspect of the theory of successful intelligence, creative intelligence, will be dealt with below.)

Academic intelligence refers to the memory and analytical abilities that in combination largely constitute the conventional notion of intelligence—the abilities needed to recall and recognize but also to analyze, evaluate, and judge information. A long history of research on the relation between these abilities and leadership goes back at least to Stogdill (1948), and the results are ambiguous. Although there seems to be a modest correlation between these abilities and leadership effectiveness (Stogdill, 1948; see also essays in Riggio, Murphy, & Pirozzolo, 2002), the correlation is moderated by factors such as the stress experienced by the leader (Fiedler, 2002; Fiedler & Link, 1994), which apparently even can change the direction of the correlation.

These abilities matter for leadership, because leaders need to be able to retrieve information that is relevant to leadership decisions (memory abilities) and to analyze and evaluate different courses of action, whether proposed by themselves or by others (analytical abilities). But a good analyst is not necessarily a good leader.

Academic Intelligence

The long-time primary emphasis on academic intelligence (IQ) in the literature relating intelligence to leadership perhaps has been unfortunate. Presumably, some measure of academic intelligence is an ingredient of successful leadership. However, recent theorists have been emphasizing other aspects of intelligence in their theories, such as emotional intelligence (e.g., Caruso, Mayer, & Salovey, 2002; Goleman, 1998a, 1998b) or multiple intelligences (Gardner, 1995). These constructs of intelligence do not replace conventional academic intelligence: They supplement it. Here the emphasis is on practical intelligence (Sternberg et al., 2000; Sternberg & Hedlund, 2002), which has a somewhat different focus from emotional intelligence. Practical intelligence is a part of successful intelligence. Practical intelligence is a core component of leadership, and thus will receive special attention here.
Practical Intelligence

Practical intelligence is the ability to solve everyday problems by utilizing knowledge gained from experience in order to purposefully adapt to, shape, and select environments. It thus involves changing oneself to suit the environment (adaptation), changing the environment to suit oneself (shaping), or finding a new environment within which to work (selection). One uses these skills to (a) manage oneself, (b) manage others, and (c) manage tasks.

Effectiveness in "transactional leadership" (Avolio, Bass, & Jung, 1999; Bass, 1985, 1998, 2002; Bass, Avolio, & Atwater, 1996) derives, in large part although not exclusively, from the adaptive function of practical intelligence. Transactional leaders are for the most part adapters: They work with their followers toward the mutual fulfillment of essentially contractual obligations. These leaders typically provide contingent rewards, specifying role and task requirements and rewarding desired performance. Or they may manage by exception, in which case they monitor the meeting of standards and intervene when these standards are not met.

Different combinations of intellectual skills engender different types of leadership. Leaders vary in their memory, analytical, and practical skills. A leader particularly strong in memory skills but not in analytical and practical ones may have a vast amount of knowledge at his or her disposal, but be unable to use it effectively. A leader particularly strong in analytical skills as well as memory skills may be able to retrieve information and analyze it effectively, but be unable to convince others that his or her analysis is correct. A leader who is strong in memory, analytical, and practical skills is most likely to be effective in influencing others. But, of course, there exist leaders who are strong in practical skills but not in memory and analytical skills (Sternberg, 1997; Sternberg et al., 2000). In conventional terms, they are "shrewd" but not "smart." Although they may be effective in getting others to go along with them, they may be leading them down the garden path.

My colleagues and I (Sternberg et al., 2000; Sternberg & Wagner, 1993; Sternberg, Wagner, & Okagaki, 1993; Sternberg, Wagner, Williams, & Horvath, 1995; Wagner & Sternberg, 1985; Wagner, 1987) have taken a knowledge-based approach to understanding practical intelligence. Individuals draw on a broad base of knowledge in solving practical problems, some of which is acquired through formal training and some of which is derived from personal experience. Much of the knowledge associated with successful problem solving can be characterized as tacit.

The term tacit knowledge has roots in works on the philosophy of science (Polanyi, 1966), ecological psychology (Neisser, 1976), and organizational behavior (Schön, 1983), and has been used to characterize the knowledge gained from everyday experience that has an implicit, unarticulated quality. Such notions about the tacit quality of the knowledge associated with everyday problem solving also are reflected in the common language of the workplace, as people attribute successful performance to "learning by doing" and to "professional intuition" or "instinct."

Tacit knowledge often is not openly expressed or stated; thus, individuals must acquire such knowledge through their own experiences. Furthermore, although people's actions may reflect their knowledge, they may find it difficult to articulate what they know. Research on expert knowledge is consistent with this conceptualization. Experts draw on a well-developed repertoire of knowledge in responding to problems in their respective domains (Scribner, 1986). That knowledge tends to be procedural in nature and to operate outside of focal awareness (see Chi, Glaser, & Farr, 1988). It also reflects the structure of the situation more closely than it does the structure of formal, disciplinary knowledge (Groen & Patel, 1988).

My colleagues and I (Sternberg, 1997; Sternberg & Horvath, 1999; Sternberg et al., 2000; Wagner & Sternberg, 1985) have viewed tacit knowledge as an aspect of practical intelligence that enables individuals to adapt to, select, and shape real-world environments. It is knowledge that reflects the practical ability to learn from experience and to apply that knowledge in pursuit of personally valued goals. Our research (see e.g., Sternberg, 1997; Sternberg, Wagner, & Okagaki, 1993; Sternberg & Horvath, 1999; Sternberg et al., 1995; Sternberg et al., 2000) has shown that tacit knowledge has relevance for understanding successful performance in a variety of domains. I present below the conceptualization of tacit knowledge we have used in our research and our methodology for measuring tacit knowledge. I then review findings from a program of research aimed at understanding tacit knowledge and practical intelligence.

Measuring tacit knowledge. Because people often find it difficult to articulate their tacit knowledge, we rely on observable indicators of its existence. That is, we measure tacit knowledge in the responses individuals provide to practical situations or problems, particularly those situations in which tacit knowledge is expected to provide an advantage. The measurement instruments used to
assess tacit knowledge typically consist of a series of situations and associated response options, which have been characterized in the literature as situational-judgment tests (SJTs; Schmitt & Chan, 1998; Legree, 1995; Motowidlo, Dunnette, & Carter, 1990). These types of tests generally are used to measure interpersonal and problem-solving skills (Hanson & Ramos, 1996; Motowidlo et al., 1980) or behavioral intentions (Weekley & Jones, 1987). In a situational-judgment or tacit-knowledge test, each question presents a problem relevant to the domain of interest (e.g., a manager intervening in a dispute between two subordinates) followed by a set of options (i.e., strategies) for solving the problem (e.g., meet with the two subordinates individually to find out their perspective on the problem; hold a meeting with both subordinates and have them air their grievances). Respondents are asked either to choose the best and worst alternatives from among a few options, or to rate on a Likert scale the quality or appropriateness of several potential responses to the situation.

Tacit-knowledge (TK) tests have been scored in one of three ways: (a) by correlating participants' ratings with an index of group membership (i.e., expert, intermediate, novice); (b) by judging the degree to which participants' responses conform to professional "rules of thumb"; or (c) by computing a profile match or difference score between participants' ratings and an expert prototype. We (Sternberg et al., 1993, 1995, 2000; Wagner, 1987; Wagner & Sternberg, 1985; Wagner et al., 1999) have used TK tests to study academic psychologists, salespersons, college students, civilian managers, and military leaders, among other occupations.

Tacit knowledge and experience. Tacit knowledge by definition is knowledge gained primarily from experience performing practical, everyday problems. The common phrase "experience is the best teacher" reflects the view that experience provides opportunities to develop important knowledge and skills related to performance. Several meta-analytic reviews indicate that the estimated mean population correlation between experience and job performance falls in the range of .18 to .32 (Hunter & Hunter, 1984; McDaniel, Schmidt, & Hunter, 1988; Quinones, Ford, & Teachout, 1995). Additional research suggests that this relationship is mediated largely by the direct effect of experience on the acquisition of job knowledge (Borman, Hanson, Oppler, & Pulakos, 1993; Schmidt, Hunter, & Outerbridge, 1986).

Consistent with this research, we (Sternberg et al., 2000; Wagner, 1987; Wagner & Sternberg, 1985; Wagner et al., 1999) have found that tacit knowledge generally increases with experience. Wagner and Sternberg (1985) found a significant correlation between tacit knowledge and a manager's level within the company. In a follow-up study, Wagner (1987) found differences in tacit-knowledge scores among business managers, business graduate students, and general undergraduates, with the managers exhibiting the highest scores. Comparable results were found for a TK test for academic psychologists when comparing psychology professors, psychology graduate students, and undergraduates.

For three levels of military leadership, TK scores were not found to correlate with the number of months leaders had served in their current positions (Hedlund et al., in press), presumably because successful leaders spent less time in a job before being promoted than did less successful leaders. Subsequent research, however, found that TK scores did correlate with leadership rank such that leaders at higher levels of command exhibited greater tacit knowledge than did those at lower ranks (Hedlund et al., 2003).

The research conducted to date generally supports the relationship between tacit knowledge and experience. The correlations tend to be moderate, falling in the range of .20 to .40, which suggests that although tacit knowledge has some basis in experience, it is not simply a proxy for experience. I propose directions for future research to enhance our understanding of the relationship between experience and the acquisition of tacit knowledge below.

Tacit knowledge and general cognitive ability. General cognitive ability (g) is considered by many to be the best single predictor of job performance (e.g., Hunter, 1986; Ree, Earles, & Teachout, 1994; Schmidt & Hunter, 1998). The relationship between g and performance is attributed largely to the direct influence of g on the acquisition of job-related knowledge (Borman et al., 1993; Hunter, 1986; Schmidt et al., 1986). Many job-knowledge tests, however, assess primarily declarative knowledge of facts and rules (McClay, Campbell, & Cudeck, 1994). They consist of abstract, well-defined problems that are similar to the types of problems found on traditional intelligence tests, thus explaining the observed correlations between measures of job knowledge and cognitive ability tests. Tacit-knowledge tests, however, consist of problems that are poorly defined and context-specific. We consider performance on these tests to be a function of practical rather than of abstract, general intelligence.

In the research reviewed here, TK tests exhibit trivial-to-moderate correlations with measures of g. Scores on TK tests for academic psychologists
and for managers yielded nonsignificant correlations (−.04 to .16) with a test of verbal reasoning in undergraduate samples (Wagner, 1987; Wagner & Sternberg, 1985). Scores on a TK test for managers also exhibited a nonsignificant correlation with an IQ test for a sample of business executives (Wagner & Sternberg, 1990). Similar findings were obtained with a test of tacit knowledge for sales in samples of undergraduates and salespeople (Wagner, Sujuan, Sujuan, Rashotte, & Sternberg, 1999.

In a study by Eddy (1988), the Armed Services Vocational Aptitude Battery (ASVAB) was administered along with a TK test for managers to a sample of Air Force recruits. The ASVAB is a multiple-aptitude battery measuring verbal, quantitative, and mechanical abilities and has been found to correlate highly with other cognitive ability tests. Scores on the TK test exhibited near-zero correlations with factor scores on the ASVAB. In research with military leaders, leaders at three levels of command completed Terman’s (1950) Concept Mastery Test along with a TK test for their respective level. TK scores exhibited trivial and nonsignificant-to-moderate and significant correlations (.02 to .25) with verbal reasoning ability (Hedlund et al., 2003). Finally, Grigorenko and I (Sternberg & Grigorenko, 1999) found that a test of common sense for the workplace (e.g., how to handle oneself in a job interview) predicted self-ratings of practical abilities but not of academic abilities. The research reviewed above supports the contention that TK tests measure abilities that are distinct from those assessed by traditional intelligence tests. Additional research, discussed below, shows that TK tests measure something unique beyond g.

Tacit knowledge and performance. Tacit-knowledge tests have been found to predict performance in a number of domains, typically correlating generally in the range of .2 to .5 with criteria such as rated prestige of business or institution, salary, performance-appraisal ratings, number of publications, grades in school, and adjustment to college (Sternberg et al., 1995, 2000; Wagner, 1987; Wagner & Sternberg, 1985). Some of these findings are reviewed below in more detail.

In studies with general business managers, TK scores correlated in the range of .2 to .4 with criteria such as salary, years of management experience, and whether the manager worked for a company at the top of the Fortune 500 list (Wagner, 1987; Wagner & Sternberg, 1985). Compared with the correlations reported by Schmidt and Hunter (1998), these correlations are uncorrected for attenuation due to restriction of range. In a study with bank managers, Wagner and I (Wagner & Sternberg, 1985) obtained significant correlations between TK scores and average percentage of merit-based salary increase (r = .48, p < .05) and average performance rating for the category of generating new business for the bank (r = .56, p < .05).

Additional findings regarding tacit knowledge. Some additional findings regarding tacit knowledge are worth noting because they further enhance our understanding of practical intelligence.

First, tacit knowledge, as a cognitive-ability variable, is viewed as distinct from personality measures. Wagner and I (Wagner & Sternberg, 1990) found that TK scores generally exhibited nonsignificant correlations with several personality-type tests, including the California Psychological Inventory, the Myers-Briggs Type Indicator, and the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) given to a sample of business executives. The exceptions were the Social Presence factor of the California Psychological Inventory and the Control Expressed factor of the FIRO-B, which correlated with TK scores .29 and .25, respectively. In hierarchical regression analyses, TK scores consistently accounted for a significant increment in variance beyond the personality measures.

Second, tacit-knowledge measures tend to correlate among themselves and to show a general factor among themselves (Sternberg et al., 2000; Wagner, 1987) that is distinct from the general factor of tests of general ability. In one study, correlations between scores on a tacit-knowledge test for academic psychologists and business managers was at the .6 level (Wagner, 1987).

Third, tacit-knowledge measures have been found, in at least one instance, to yield similar results across cultures. Patterns of preferences for the quality of responses to a tacit-knowledge measure for the workplace were compared between workers in the United States and Spain. The correlation between the two patterns of preferences for responses to problems was at the .9 level (Cianciolo, Grigorenko, Jarvis et al., 2003).

Finally, traditional intelligence tests often are found to exhibit group differences in scores as a function of gender and race (for reviews see Loehlin, 2000; Neisser et al., 1996). TK tests, because they are not restricted to abilities developed in school, may be less susceptible to these differences. In Eddy’s (1988) study of Air Force recruits, correlations were reported between dummy coded variables for race and gender and TK scores. Comparable levels of performance on the TK test were found among majority and minority group members and among males and females as indicated by nonsignificant correlations between tacit knowledge and both race (.03) and gender (.02).
The same effects were not found for scores on the ASVAB. The dummy variables for race and gender exhibited significant correlations ranging from .2 to .4 with scores on the ASVAB subtests. Therefore, there is preliminary support for the notion that TK tests do not exhibit the same group differences found for traditional intelligence tests. Of course, additional research would be necessary to substantiate this claim.

The research conducted thus far indicates that tacit knowledge generally increases with experience; that it is distinct from general intelligence and personality traits; that TK tests predict performance in several domains and do so beyond tests of general intelligence; that scores on TK tests appear to be comparable across racial and gender groups; and that practical intelligence may have a substantial amount of generality that is distinct from the generality of psychometric g. These findings add support to the importance of considering practical intelligence in attempting to understand the competencies needed for real-world success.

Attempts to measure practical abilities are not unique to TK tests. The use of simulations and situational-judgment test (SJTs) represents a set of attempts to capture real-world problem-solving ability. Simulations involve observing people in situations that have been created to represent aspects of the actual job situation. Responses to these simulations are considered to represent the actual responses (or close approximations of them) that individuals would exhibit in real situations. Simulations can take the form of in-basket tests, situational interviews, group discussions, assessment centers, and situational-judgment tests. Motowidlo et al. (1990) distinguished between high-fidelity and low-fidelity simulations. In high-fidelity simulations, the stimuli presented to the respondent closely replicate the actual situation, and the individual has an opportunity to respond as if he or she were in the actual situation. In low-fidelity simulations, the stimuli are presented in written or oral form, and the individual is asked to describe how he or she would respond to the situation, rather than actually to carry out the behavior.

Tacit knowledge and leadership. Two studies showed the incremental validity of TK tests over traditional intelligence tests in predicting performance. In a study with business executives attending the Leadership Development Program at the Center for Creative Leadership, Wagner and I (Wagner & Sternberg, 1990) obtained a correlation of .61 between scores on a TK test for managers and performance on a managerial simulation. Furthermore, TK scores explained 32% of the variance in performance beyond scores on a traditional IQ test, and also explained variance beyond measures of personality and cognitive style. In a study with military leaders, Hedlund et al. (2003) found TK scores to correlate significantly at all three levels of command with ratings of leadership effectiveness made by subordinates, peers, or superiors, with correlations ranging from .14 to .42 (Hedlund et al., 2003). More important, TK scores accounted for small (4–6%), but significant variance in leadership effectiveness beyond scores on tests of general verbal intelligence and tacit knowledge for managers. These studies provide evidence that tacit knowledge accounts for variance in performance that is not accounted for by traditional tests of abstract, academic intelligence.

Other researchers, using TK tests or similar measures, also have found support for the relationship between practical intelligence and performance (e.g., Colonia-Willner, 1998; Fox & Spector, 2000; Pulakos, Schmitt, & Chan, 1998). Colonia-Willner administered the Tacit Knowledge Inventory for Managers (TKIM; Wagner & Sternberg, 1991) to bank managers along with measures of psychometric and verbal reasoning. She found that scores on the TKIM significantly predicted an index of managerial skill, whereas psychometric and verbal reasoning did not. Thus, there is growing evidence to suggest that tests of TK and related tests not only explain individual differences in performance but also measure an aspect of performance that is not explained by measures of general intelligence. We consider that aspect to represent practical intelligence.

Creativity

Creativity refers to skill in generating ideas and products that are (a) relatively novel, (b) high in quality, and (c) appropriate to the task at hand. Creativity is important for leadership because it is the component whereby one generates the ideas that others will follow. A leader who is practically intelligent may get along and get others to go along—but with inferior or stale ideas. Many leaders are academically and even practically intelligent, but uncreative; they lead people through their ability to influence rather than through their agenda.

A confluence model of creativity (Sternberg & Lubart, 1995, 1996) suggests that creative people show a variety of characteristics. These characteristics represent not innate abilities, but rather, largely, decisions (Sternberg, 2000). In other words, to a great extent, people decide to be creative. They exhibit a creative attitude toward life. At-
tributes associated with creativity include (but are not limited to) proclivities to (a) redefine problems; (b) recognize how knowledge can both help and hinder creative thinking (see also Frensch & Sternberg, 1989; Sternberg, 1985a); (c) take sensible risks; (d) surmount obstacles that are placed in one’s way; (e) believe in one’s ability to accomplish the task at hand (self-efficacy [Bandura, 1995]); (f) tolerate ambiguity; (g) find extrinsic rewards for the things one is intrinsically motivated to do; and (h) continue to grow intellectually rather than to stagnate.

Research within the proposed framework has yielded support for this model (Lubart & Sternberg, 1995; Sternberg & Lubart, 1995). It has used tasks such as (a) writing short stories using unusual titles (e.g., The Octopus’ Snackers); (b) drawing pictures with unusual themes (e.g., the earth from an insect’s point of view); (c) devising creative advertisements for boring products (e.g., cufflinks); and (d) solving unusual scientific problems (e.g., how we could tell if someone had been on the moon within the past month?). This research showed creative performance to be moderately domain-specific and to be predicted by a combination of intelligence, knowledge, thinking styles, personality, and motivation. Fluid intelligence was modestly-to-moderately correlated with performance on the creative tasks.

In a more recent study (Sternberg & The Rainbow Collaborators, in press), my colleagues and I used a variety of multiple-choice and performance measures to assess creativity in college students. The multiple-choice measures required participants to complete tasks such as solving counterfactual analogies (‘Suppose sparrows played hopscotch . . . What would be the solution to the following analogy?’) and to solve numerical problems with novel number operations (such as flix, which requires one to add a + b when a is greater than b and to subtract a from b when a is less than equal to b). Additional performance-based tasks included writing short stories, telling short stories, and captioning cartoons. The tests significantly increased prediction of college grades and also substantially reduced ethnic-group differences relative to analytical tests such as the SAT.

The creative ideas one proposes can be of different kinds (Sternberg, 1998b, 2002a; Sternberg, Kaufman, & Pretz, 2002):  
(a) replications, which are recycled versions of already existing ideas, largely in their original form, in somewhat new situations. Leaders who are replicators basically work from someone else’s script. They imitate someone or otherwise do as has been done in the past. They provide the minimal limiting case of creativity work.

 Leaders who are replicators basically work from someone else’s script.

(b) redefinitions, which involve using already existing ideas in a new form or way. Redefiners pretty much accept the status quo, but may give it a new name or a new description. They may also view existing ideas in a way that is different from the way others view these ideas, or use it for a new reason. Redefiners are sometimes referred to as presenting old wine in new bottles, because their ideas repackage already existing ideas.

(c) forward incrementations, which involve moving things the next step along the way they already are going. Forward incrementers take things one or two steps further, adhering to old patterns, but go beyond these patterns. Leaders who are forward incrementers take their followers further down a path set by previous leaders.

(d) advance forward incrementations, which involve moving things forward in the way they already are going, but several steps forward, often beyond where others are ready to follow. Advance forward incrementers try to move things very far, very fast, and sometimes lose their followers in the process.

(e) redirections, which involve changing the direction in which things are going, starting from where things are at the given time. Redirectors are unhappy with where things are going, so they attempt to steer their followers somewhere else. Such leaders change the direction that their organization or other group is pursuing.

(f) regressive redirections, which involve changing the direction in which things are going, but starting at a point that most people had long ago abandoned. Regressive redirectors look to the past. They argue that things once were better and that it is time to move back to the way things were and to move forward from there.

(g) reinitiations, which involve starting over from a new point beyond where things are, and moving forward in a different direction from there. Reinitiators not only do not accept the direction in which things are moving; they also do not accept the starting point or basic assumptions. They shake things up in a major way. Such leaders accept practically nothing from the past and move in a direction that they, alone, have set.

(h) syntheses, which involve putting together ideas from different paradigms or ways of thinking.
that have not previously been integrated. Synthesizers see value in multiple existing ways of doing things, and integrate these ways of doing things to form a new way of doing things unlike what has been done before. Such leaders integrate the approaches of other leaders to form their own unique approach.

Various forms of creative contributions engender different kinds of leadership. In particular, some leaders transform the nature of an organization or other institution, whereas others do not. At a given time, in a given place, transformation may or may not be called for. So transformation is not necessarily needed in every leadership situation. But the leaders who tend to be remembered over the course of history are probably, in most cases, those who transform organizations or, more generally, ways of thinking.

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In the terms of Bass and Avolio (Avolio, Bass, & Jung, 1998; Bass, 1985, 1998, 2002; Bass, Avolio, & Atwater, 1996), transactional leaders are more likely to pursue Options a to c. Transformational leaders, on the other hand, are more likely to pursue any of Options e to h (and possibly d). They are crowd-defiers. In terms of Kuhn’s (1970) theory of scientific revolutions, which applies to ideas outside the sciences as well, these are the leaders who revolutionize ways of thinking.

Different combinations of intelligence and creativity also can lead to different styles of leadership. Someone who is high in creativity but not in analytical or practical intelligence may be able to generate a number of ideas, some of them good, but not have the analytical skill to know which are good ideas, nor the practical skill to know how to persuade others of their value. In contrast, someone who is high in practical intelligence but not analytical intelligence or creativity may be able to persuade people to follow ideas, but ideas that are not of his or her own making and not ones that have been rigorously evaluated. Finally, someone who is high in creativity but not analytical or practical intelligence may be a frustrated leader who comes up with ideas that seem lost on Cloud Nine: They are neither rigorous nor practical; and so forth.

A transformational leader will always be creative in some degree, but may or may not be particularly wise. Transformational leaders who are low in or even who lack wisdom are not in any sense “pseudotransformational” as opposed to being “authentically transformational.” They genuinely may effect transformations. These transformations simply are not very wise. For example, some African leaders in the latter half of the twentieth century adopted Marxist-Leninist ideas that, poorly implemented, drove countries that already were economically marginal into profound impoverishment. The leaders authentically transformed their countries, but for the worse, as have many unwise corporate leaders. Wise transformational leaders are probably not altogether common. One such uncommon leader, for example, Nelson Mandela, implemented a largely successful policy of forgiveness and reconciliation that is practically unique among modern heads of state.

Our research on creativity (Lubart & Sternberg, 1995; Sternberg & Lubart, 1995) has yielded several conclusions. First, creativity often involves defying the crowd, or as we have put it, “buying low and selling high” in the world of ideas. Creative leaders are good investors: They do what needs to be done, rather than just what other people or polls tell them to do. Second, creativity is relatively domain-specific. Third, creativity is weakly related to academic intelligence, but certainly is not the same thing as academic intelligence. In general, it appears that there is a threshold of IQ for creativity, but it is probably about 120 or even lower (see review in Sternberg & O’Hara, 2000).

**Wisdom**

A leader can have all of the above attributes and still lack an additional quality that, arguably, is the most important quality a leader can have, but perhaps, also the rarest. This additional quality is wisdom.

Over time, a number of philosophical and psychological approaches to wisdom have emerged, only a few of which can be mentioned briefly here. The approaches underlying some of these attempts are summarized elsewhere (Sternberg, 1990a), and a more detailed review of some of the major approaches to wisdom can be found in Baltes and Staudinger (2000) or in Sternberg (1990b, 1998a, 2000).

The main approaches can be classified as *philosophical*, *implicit-theories*, and *developmental* approaches.

Philosophical approaches have been reviewed by Robinson (1990; see also Robinson, 1989, with regard to the Aristotelian approach in particular,
and Labouvie-Vief, 1990, for a further review). Robinson notes that the study of wisdom has a history that long antedates psychological study, with the Platonic dialogues offering the first intensive analysis of the concept of wisdom. Robinson points out that, in these dialogues, there are three different senses of wisdom: wisdom as (a) sophia, which is found in those who seek a contemplative life in search of truth; (b) phronesis, which is the kind of practical wisdom shown by statesmen and legislators; and (c) episteme, which is found in those who understand things from a scientific point of view.

Implicit-theoretical approaches to wisdom have in common the search for an understanding of people’s folk conceptions of what wisdom is. Thus, the goal is not to provide a “psychologically true” account of wisdom, but rather an account that is true with respect to people’s beliefs, whether these beliefs are right or wrong. Some of the earliest work of this kind was done by Clayton (1975, 1976, 1982; Clayton & Birren, 1980), who multidimensionally scaled ratings of pairs of words potentially related to wisdom for three samples of adults differing in age (younger, middle-aged, older). In her earliest study (Clayton, 1975), the terms that were scaled were ones such as experienced, pragmatic, understanding, and knowledgeable.

Holliday and Chandler (1986) also used an implicit-theoretical approach to understanding wisdom. Principal-components analysis of one of their studies revealed five underlying factors: exceptional understanding, judgment and communication skills, general competence, interpersonal skills, and social unobtrusiveness.

I have reported a series of studies investigating implicit theories of wisdom (Sternberg, 1985b, 1990c). In one study, 200 professors each of art, business, philosophy, and physics were asked to rate the characteristicness of each behavior obtained in a prestudy from the corresponding population with respect to the professors’ ideal conception of each of an ideally wise, intelligent, or creative individual in their occupation. Laypersons were also asked to provide these ratings but for a hypothetical ideal individual without regard to occupation. Correlations were computed across the three ratings. In each group except philosophy, the highest correlation was between wisdom and intelligence; in philosophy, the highest correlation was between intelligence and creativity. The correlations between wisdom and intelligence ratings ranged from .42 to .78 with a median of .68. For all groups, the lowest correlation was between wisdom and creativity (which ranged from -.24 to .48 with a median of .27). The negative correlation was for business professors.

In a second study, 40 college students were asked to sort three sets of 40 behaviors each into as many or as few piles as they wished. The 40 behaviors in each set were the top-rated wisdom, intelligence, and creativity behaviors from the previous study. The sortings then each were subjected to nonmetric multidimensional scaling. For wisdom, six components emerged: reasoning ability, sagacity, learning from ideas and environment, judgment, expeditious use of information, and perspicacity.

In a third study, 50 adults were asked to rate descriptions of hypothetical individuals for wisdom, intelligence, and creativity. Correlations were computed between pairs of ratings of the hypothetical individuals’ levels of the three traits. Correlations between the ratings were .94 for wisdom and intelligence, .82 for wisdom and creativity, and .69 for intelligence and creativity, again suggesting that wisdom and intelligence are highly correlated in people’s implicit theories, at least in the United States.

Implicit-theoretical approaches have in common a formal theory of wisdom that is proposed to account for wisdom. The most extensive program of research has been that conducted by Baltes and his colleagues. This program of research is related to Baltes’s long-standing program of research on intellectual abilities and aging. For example, Baltes and Smith (1987, 1990) gave adult participants life-management problems, such as “A fourteen-year-old girl is pregnant. What should she, what should one, consider and do?” and “A fifteen-year-old girl wants to marry soon. What should she, what should one, consider and do?” This same problem might be used to measure the pragmatics of intelligence, about which Baltes has written at length. Baltes and Smith tested a five-component model of wisdom on participants’ protocols in answering these and other questions, based on a notion of wisdom as expert knowledge about fundamental life matters (Smith & Baltes, 1990) or of wisdom as good judgment and advice in important but uncertain matters of life (Baltes & Staudinger, 2000).

Three kinds of factors—general person factors, expertise-specific factors, and facilitative-experiential contexts—were proposed to facilitate wise judgments. These factors are used in life planning, life management, and life review. Wisdom is in turn reflected in five components: (a) rich factual knowledge (general and specific knowledge about the conditions of life and its variations); (b) rich procedural knowledge (general and specific
knowledge about strategies of judgment and advice concerning matters of life; (c) life span contextualism (knowledge about the contexts of life and their temporal [developmental] relationships; (d) relativism (knowledge about differences in values, goals, and priorities); and (e) uncertainty (knowledge about the relative indeterminacy and unpredictability of life and ways to manage). An expert answer should reflect more of these components, whereas a novice answer should reflect fewer of them. The data collected to date generally have been supportive of the model. These factors seem to reflect the pragmatic aspect of intelligence but to go beyond it, for example, in the inclusion of factors of relativism and uncertainty.

Over time, Baltes and his colleagues (e.g., Baltes, smith, & straudinger, 1992; Baltes & Staudinger, 2000) have collected a wide range of data showing the empirical utility of the proposed theoretical and measurement approaches to wisdom. For example, Staudinger, Lopez, and Baltes (1997) found that measures of intelligence (as well as of personality) overlap with but are nonidentical to measures of wisdom in terms of constructs measured, and Staudinger, Smith, and Baltes (1992) showed that human-services professionals outperformed a control group on wisdom-related tasks. They also showed that older adults performed as well on such tasks as did younger adults, and that older adults did better on such tasks if there was a match between their age and the age of the fictitious characters about whom they made judgments. Baltes, Staudinger, Maercker, and Smith (1995) found that older individuals nominated for their wisdom performed as well as did clinical psychologists on wisdom-related tasks. They also showed that up to the age of 80, older adults performed as well on such tasks as did younger adults. In a further set of studies, Staudinger and Baltes (1996) found that performance settings that were ecologically relevant to the lives of their participants and that provided for actual or "virtual" interaction of minds increased wisdom-related performance substantially.

Wisdom is viewed here according to a proposed balance theory of wisdom (Sternberg, 1998b, 2000), according to which an individual is wise to the extent he or she uses successful intelligence, creativity, and experience as moderated by values to (a) seek to reach a common good, (b) by balancing intrapersonal (one's own), interpersonal (others'), and extrapersonal (organizational/institutional/spiritual) interests, (c) over the short and long terms, to (d) adapt to, shape, and select environments.

Wise leaders do not look out just for their own interests, nor do they ignore these interests. Rather, they skillfully balance interests of varying kinds, including their own, those of their followers, and those of the organization for which they are responsible. They also recognize that they need to align the interests of their group or organization with those of others groups or organizations because no group operates within a vacuum. Wise leaders realize that what may appear to be a prudent course of action over the short term does not necessarily appear so over the long term.

Leaders who have been less than fully successful often have been so because they have ignored one or another set of interests. For example, Richard Nixon and Bill Clinton, in their respective cover-ups, not only failed to fulfill the interests of the country they led, but also failed to fulfill their own interests. Their cover-ups ended up bogging down their administrations in scandals rather than allowing them to make the positive accomplishments they had hoped to make. Freud was a great leader in the fields of psychiatry and psychology, but his insistence that his followers (disciples) conform quite exactly to his own system of psychoanalysis led him to lose those disciples and the support they might have continued to lend to his efforts. He was an expert in interpersonal interests, but not as applied to his own life. Napoleon lost sight of the extrapersonal interests that would have been best for his own country. His disastrous invasion of Russia, which appears to have been motivated more by hubris than by France's need to have Russia in its empire, partially destroyed his reputation as a successful military leader, and paved the way for his later downfall.

Leaders can be intelligent in various ways and creative in various ways; neither trait guarantees wisdom. Indeed, probably relatively few leaders at any level are particularly wise. Yet the few leaders who are notably so—perhaps Nelson Mandela, Martin Luther King, Mahatma Gandhi, Winston Churchill—leave an indelible mark on the people they lead and, potentially, on history. It is important to note that wise leaders are probably usually charismatic, but charismatic leaders are not necessarily wise, as Hitler, Stalin, and many other charismatic leaders have demonstrated over the course of time.

Unsuccessful leaders often show certain stereotyped fallacies in their thinking. Consider five such flaws (Sternberg, 2002b, 2002d). The first, the unrealistic optimism fallacy occurs when they think they are so smart and effective that they can do whatever they want. The second, egocentrism fallacy, occurs when successful leaders start to think that they are the only ones that matter, not...
the people who rely on them for leadership. The third, omniscience fallacy, occurs when leaders think that they know everything, and lose sight of the limitations of their own knowledge. The fourth, omnipotence fallacy, occurs when leaders think they are all-powerful and can do whatever they want. And the fifth, invulnerability fallacy, occurs when leaders think they can get away with anything, because they are too clever to be caught; and even if they are caught, they figure that they can get away with what they have done because of who they imagine themselves to be.

Can wisdom be measured? My colleagues and I are currently engaged in a study to validate the balance theory. An example of a kind of problem we are using is the following:

Charles and Margaret are both engineers and have been married for 5 years. Three years ago Charles was offered a job in Europe. Margaret agreed to quit her job in the United States and move to Europe with Charles. The job was an excellent career move for Charles. Soon after the move, they had a baby boy. After the birth, Margaret decided to start working again and, with effort, found a very exciting job that paid well and promised real security. Meanwhile, Charles was offered a transfer back to the United States. Margaret feels she needs another year or two in her new job to meaningfully advance her career. She is also tired of moving. She has already given up a lot of time following Charles around. Charles knows that his wife's job is as important his own, but he thinks returning to the United States would help both their careers in the end. What should Charles do?

Synthesis

There probably is no model of leadership that will totally capture all of the many facets—both internal and external to the individual—that make for a successful leader. The WICS model may come closer to some models, however, in capturing dimensions that are important.

The final element of the WICS model is synthesis. How do the various elements of the model interrelate in leadership?

The base of WICS is successful intelligence. A leader needs:

- Creative skills to generate new ideas;
- Analytical skills to evaluate whether the ideas are good ones;
- Practical skills to implement the ideas and to persuade others of the value of the ideas.

A leader may have creative skills, but end up rarely or even never exercising them because of a lack of creative disposition, in particular, the willingness to decide for creativity. For example, the leader may not have the courage to defy the crowd, or the willingness to surmount difficult obstacles, or the insight to see how his or her entrenched thinking is blocking progress. Thus, creativity involves quite a bit more than just the creative skills involved in successful intelligence. It involves as well the personal dispositions that activate these skills.

A leader may be intelligent and/or creative but not wise because of his or her unwillingness to use intelligence and creativity for a common good. Certainly the business leaders of Enron, Arthur Andersen Accounting, WorldCom, and other organizations whose leaders drove them into bankruptcy were intelligent and creative. They were not wise.

An effective leader needs creative ability to come up with ideas, academic ability to decide whether they are good ideas, practical ability to make the ideas work and convince others of the value of the ideas, and wisdom to ensure that the ideas are in the service of the common good rather than just the good of the leader or perhaps some clique of family members or followers. A leader lacking in creativity will be unable to deal with novel and difficult situations, such as a new and unexpected source of hostility. A leader lacking in academic intelligence will not be able to decide whether his or her ideas are viable, and a leader lacking in practical intelligence will be unable to implement his or her ideas effectively. An unwise leader may succeed in implementing ideas, but may end up implementing ideas that are contrary to the best interests of the people he or she leads.

The WICS model is of course related to many other models. It incorporates elements of transformational as well as transactional leadership (Bass, 1998; Bass & Avolio, 1994; Bass, Avolio, & Atwater, 1996), emotionally intelligent leadership (Goleman, 1995b), visionary leadership (Sashkin, 1988, in press), and charismatic leadership (Conger & Kanuoglu, 1998; Weber, 1968). Eventually a model of leadership will appear that integrates all the strengths of these various models. In the meantime, the WICS model seems like a start.

DEVELOPING WICS-BASED LEADERSHIP SKILLS

Developing WICS might seem like an insurmountable challenge. The opposite is true. To a large extent, the elements of WICS are based on decisions. Teaching for WICS, therefore, is in large part
teaching students to make certain decisions rather than others. What are these decisions? I mention three critical ones for each of the three elements.

Intelligence

For intelligence, there is one decision corresponding to each of its analytical, creative, and practical elements.

For the analytical element, the decision is to make a serious effort to be a critical thinker. Many mistakes in judgment are made because people react mindlessly, or on the basis of what feels comfortable to them. They fail seriously to consider all serious and viable options, and to project the possible gains and losses associated with each.

For the creative element, the decision is not to become entrenched, or stuck in conventional ways of thinking. Often, experts exacerbates rather than ameliorates the situation because experts are especially susceptible to becoming stuck in conventional ways of thinking that have worked for them in the past (Sternberg & Lubart, 1995). They cease "thinking outside the box" simply because they have had so much success thinking within it. Then, at some point, the success stops, and they cannot understand that it is because somewhere along the line, they sacrificed flexibility for comfort.

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For the practical element, the decision is to realize that good ideas are not really good enough if one cannot convince others of their value and implement them effectively. The value of an idea inheres not just in how good it sounds in the abstract, but in how well it works. Academics sometimes forget this, resulting in their teaching ideas and techniques that do not work in real-life settings.

Creativity

With regard to creativity, the first decision is that one is willing to defy the crowd. Creativity requires, above all else, courage. It is usually much easier to follow the crowd than to defy it. The result is that most people are content to follow rather than lead; or if they lead, they simply adopt others’ ideas as though they were their own.

The second decision is willingness to persevere in the face of obstacles. Few truly creative ideas receive a positive reception when they are first proposed. On the contrary, the ideas are often scorned, and sometimes, the person who proposes them as well. Almost all creative people have been so in spite of, rather than because of, the reception they initially receive from others (Sternberg & Lubart, 1995).

The third decision is willingness to take sensible risks. Creativity does not happen in the absence of risk taking. To the extent that our schools discourage risk taking, or encourage students merely to mimic ideas of their teachers, the schools discourage students’ deciding for creativity.

Wisdom

For wisdom, the first and foremost decision is to use one's intelligence, creativity, and experience for a common good. This means that one extends one’s field of vision beyond oneself, one’s immediate family, or the particular groups with which one identifies. Many managers fail not because they cannot decide for the good, but because they simply do not choose to. Managers at Enron, Arthur Andersen, WorldCom, and other bankrupt companies knew better. They chose not to use their knowledge.

The second decision is to balance one’s own, others’, and institutional interests over the long and short terms. In today’s world, there is a great deal of pressure to give in to short-term decision making. The result is often that managers win the battles but lose the wars. One may save this year’s balance sheet at the expense of next year’s. Or one may go for a quick profit in place of the investment that would result in longer term gains. In the long run, one loses, and so does the company.

The third decision is to make a genuine effort to understand other people’s points of view and incorporate them into one’s thinking (so-called dialectical thinking). One cannot do what is good for others if one does not understand what they think, why they think it, and how they came to think it. Many negotiations fail because neither side makes a serious effort to understand the other side. Rather, they see the other side as simply ill-motivated. The result is that whatever the problem is, it never gets solved.

In sum, WICS can be developed by teaching students about the decisions they can make. There are three good ways to teach them. First is to model them. Second is to illustrate them concretely. And third is to reward them. We all can develop leaders by teaching for WICS. WICS requires making cer-
tain decisions. But the first decision is the teacher’s or mentor’s: to teach for it.

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