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An analysis of the construct validity of an instrument measuring leadership behaviors

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**AN ANALYSIS OF THE CONSTRUCT VALIDITY
OF AN INSTRUMENT MEASURING LEADERSHIP BEHAVIORS**

A Thesis

Presented to

the Faculty of the Department of Psychology

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

by

Kimberly Jane Hopkins

December 1998

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ABSTRACT

AN ANALYSIS OF THE CONSTRUCT VALIDITY OF AN INSTRUMENT MEASURING LEADERSHIP BEHAVIORS

by Kimberly Jane Hopkins

The construct validity of a new multidimensional leadership tool, the Leadership Box, was examined. Results of principal components analysis with an orthogonal rotation identified six factors explaining 70.8% of the variance in the total factor solution. Many of the factors were structurally complex with items loading heavily on more than one factor. Although some items did not load on their proposed scales, some support was provided for 3 of the 4 hypothesized leadership dimensions.

In addition, relationships among the leadership tool subscales and the Myers-Briggs Type Indicator Sensing-Intuition and Thinking-Feeling scales were assessed. Suggestions for further improving the construct validity of the Leadership Box are discussed.

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Running head: CONSTRUCT VALIDITY OF A LEADERSHIP INSTRUMENT

**An Analysis of the Construct Validity
of an Instrument Measuring Leadership Behaviors**

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Abstract

The construct validity of a new multidimensional leadership tool, the Leadership Box, was examined. Results of principal components analysis with an orthogonal rotation identified six factors explaining 70.8% of the variance in the total factor solution. Many of the factors were structurally complex with items loading heavily on more than one factor. Although some items did not load on their proposed scales, some support was provided for 3 of the 4 hypothesized leadership dimensions. In addition, relationships among the leadership tool subscales and the Myers-Briggs Type Indicator Sensing-Intuition and Thinking-Feeling scales were assessed. Suggestions for further improving the construct validity of the Leadership Box are discussed.

An Analysis of the Construct Validity
of an Instrument Measuring Leadership Behaviors

Organizations are beginning to recognize that management development should not be left to chance and that systematic development efforts will allow them to continue to cultivate effective managers to place in key positions. A tremendous amount of organizational resources, especially in terms of time and money, is often devoted to providing developmental activities, training, and mentoring (Fitzgerald, 1994). But developmental needs vary from manager to manager. And improperly targeted development efforts can be a waste of organizational resources.

To maximize on-the-job development and training programs, interventions should be targeted to the developmental needs of the individual manager. To target a developmental effort, one must first assess the strengths and weaknesses of the manager to determine what areas need improvement. For example, a manager with a strong sense of where his or her team is headed in the big picture but who tends to neglect day-to-day operations has a different developmental task ahead of him or her than does the manager with the opposite pattern, poor visionary thinker but efficient at day-to-day issues. In practice, the assessment of needs prior to development and training efforts is often informal and haphazard (London, 1985).

Many instruments have been developed to assess the current leadership behavior of managers and identify areas for development. The Leadership Box is a newly developed tool designed for this purpose. This tool, however, has not been subjected to an empirical analysis of its construct validity. Thus, the purpose of this study is to

examine (1) the factor structure of the Leadership Box and (2) the validity of the subscales by assessing their predicted relationship to an established measure of personality.

Leadership Box Development

Based upon the contingency theory of leadership as popularized by Hersey and Blanchard's (1988) situational leadership model, the Leadership Box assists executives in their development by helping them to apply leadership skills appropriate to different situations. Furthermore, this self-scoring card sort tool enables executives to assess their leadership style in terms of those leadership behaviors at which they are most effective and those in which they have development needs (are most ineffective).

Baird and Bolton (1996) drew upon McCall, Lombardo and Morrison's (1988) empirical work regarding effective executive development in organizations in their construction of the Leadership Box. McCall, Lombardo and Morrison (1988) suggest that when defining a pool of high-potential executive talent or when assessing one's development needs, each individual's potential for derailment should be examined. (Derailment describes individuals who were very successful in their careers but did not live up to their full potential in the eyes of the organization.) As identified by McCall and Lombardo (1983), some of the potential fatal flaws (derailment factors) for successful executives include the "Inability to think strategically," "Overmanaging: failing to delegate or build a team," and "Overly ambitious: thinking of the next job, playing politics." For example, not being able to think strategically and being preoccupied with detail and technical problems can keep executives from understanding the bigger picture.

Individuals with this flaw find it difficult to change from doing to planning. In the case of overmanaging and failing to build a team, managers who fail to make the transition from doing the work to overseeing that the work is done through delegation can experience serious career setbacks. While overmanaging is irritating at any level, at the top of organizations it can be especially destructive because of the greater levels of expertise of one's subordinates. And finally, being overly ambitious (i.e., persons always thinking of the next job, making enemies in their haste, spending too much time impressing upper management) can harm one's credibility and impede business results.

Based upon their study of these potential derailment factors and 25 years of shared experience coaching top management, Baird and Bolton (1996) identified three fundamental paradoxes of managerial life: the Strategic versus Tactical dilemma, the Enabling versus Directive dilemma, and the Apolitical versus Political dilemma. These three dilemmas represent common conflicting responsibilities that managers face in today's competitive environment. Because failing to balance these managerial challenges blocks development and, ultimately, management success, it is important for managers to assess their own dilemmas and recognize their flaws so that they know where to target their improvement efforts. In short, managers who identify their management dilemma(s) and target their developmental efforts accordingly will build the skills they need to successfully lead their companies into the future. The Leadership Box and its assessment of the managerial dilemmas Strategic vs. Tactical, Enabling vs. Directive and Apolitical vs. Political, offers an unique opportunity to achieve this type of management development.

The Strategic versus Tactical dilemma is similar to the derailment factor, “Inability to think strategically,” identified by McCall, Lombardo and Morrison (1988). This paradox suggests that people expect their leaders to be visionary and strategic thinkers yet include others in their vision and be attentive to immediate concerns. Baird and Bolton (1996) suggest that such expectations create the challenge to develop, articulate, and execute a strong strategic vision (Strategic behavior) while successfully fighting the everyday fires (Tactical behavior).

Similar to the potential derailment factor “Overmanaging: failing to delegate or build a team” (McCall, Lombardo & Morrison, 1988), the Enabling versus Directive dilemma maintains that successful leaders are expected to provide clear direction and portray a strong, compelling point of view (Directive behavior) yet at the same time they are expected to delegate, value others’ contributions and empower others (Enabling behavior). These type of expectations create a leadership dilemma in which “leaders” often do not know when to lead and when to follow, when to talk and when to listen, when to take a stand and when to let go, and when to be decisive and when to allow others the authority to make decisions.

Finally, the Political versus Apolitical dilemma is similar to the potential derailment factor “Overly ambitious: thinking of the next job” (McCall, Lombardo & Morrison, 1988). This dilemma refers to leaders who must possess organizational savvy, yet be aware of offending others by being “too political.” According to Baird and Bolton (1996) a dilemma results when leaders must manage knowing when to exert positive

political influence and when to minimize those skills and spend time with resisters and maintain credibility.

For optimal use in research and work situations, the Leadership Box should tap the dimensions described above. Since its construction in 1996, no empirical studies have been conducted on the Leadership Box to confirm the independence of these proposed dimensions of leadership behavior. Thus, this study is an initial examination of this newly developed tool. In addition to examining the factor structure of the Leadership Box, its empirical relationship to personality was studied to further assess the construct validity of this measurement tool.

The Myers-Briggs Type Indicator

In recent years, the Myers-Briggs Type Indicator (MBTI: Myers & McCauley, 1985) has been one of the most widely used personality instruments to support management and leadership development efforts. The MBTI assesses differences in how people prefer to receive stimulation and energy, take in information, make decisions, and orient their lives toward the outer world. Based on Carl Jung's theory of personality as expanded and applied by Myers and Briggs (1962), the MBTI measures individual preferences for four separate bipolar dimensions of personality: Extraversion (E) and Introversion (I); Sensing (S) and Intuition (N); Thinking (T) and Feeling (F); and Judging (J) and Perceiving (P). People who prefer Extraversion are likely to focus their attention on the outer world and external events while people who prefer Introversion tend to focus on their own inner world of ideas and experiences. Individuals who prefer Sensing tend to take in information through their eyes, ears, and other senses to determine the practical

realities of a situation while those who prefer Intuition tend to take in information by seeing the big picture and focusing on the connections between facts. People who prefer to use Thinking in decision making are likely to look at the logical consequences of a choice and examine situations objectively whereas those who prefer to use Feeling tend to consider what is valuable to them and to other people. Finally, persons who prefer the Judging process when they interact with the outer world tend to live in a controlled, orderly way while those who prefer Perceiving tend to live in a more spontaneous, relaxed way. These four bipolar dimensions produce 16 psychological types when all combinations are considered.

The MBTI, a popular and well established measure of personality, is often used in conjunction with leadership instruments to provide feedback to managers about their management style and to better target development efforts for those individuals. While there has been a great deal of research investigating the empirical relationship between leadership behaviors and personality, the Leadership Box's relationship to personality has yet to be examined. Such an investigation will provide further evidence for the construct validity of the Leadership Box. For the sake of simplicity and due to their conceptually clear association to particular leadership behaviors assessed by the Leadership Box, the MBTI Sensing-Intuition (S-N) and Thinking-Feeling (T-F) scales were the focus of this study.

Sensing-Intuition and Leadership Behavior. Type theory suggests that a person's preference (Sensing-Intuition) for how information is gathered influences what one attends to/focuses on. Kroeger and Thuesen (1988) describe Sensors as individuals who

prefer to concentrate on what is happening in the moment and who generally do not contemplate what is next. This type would rather do something than think about it, work with facts, figures and the here and now versus theories and ideas. Often Sensing types see the individual trees rather than the forest such that in the workplace, they are not as concerned with how things fit into the big picture. Intuitives on the other hand, often see the forest rather than individual trees. Intuitives find the future and possibilities intriguing and are more excited about where something is going than where something is. According to Myers and Briggs, managers classified as Intuitive types enjoy developing solutions to new problems, learning new skills rather than using them and dislike doing routine tasks or taking the time to be precise. Sensing type managers, however, like an established routine, usually proceed step-by-step, and dislike new problems unless a standard way exists to solve them. Given that Intuitives prefer to look into the future and identify new problems and their solutions and Sensors prefer to work in the here and now, it would appear that Intuitives are better at Strategic leadership behaviors while Sensors are better at Tactical leadership behaviors. Empirical research tends to support these relationships (e.g., Ramakrishna, 1983; Mitroff, Barabba, & Killman, 1977; Agor, 1984; Hunt, 1988).

There have been several studies focusing on an aspect of leadership behavior known as strategic planning or strategic problem solving. For organizations to be effective, top management must sense change, recognize problems and plan accordingly. Thus, correctly recognizing the strategic problems/issues is the first step to successful Strategic leadership behavior.

Early research in the area of problem recognition and type preferences by Ramakrishna, (1983), Mitroff et al. (1977) and Agor (1984) confirmed that Intuitive type managers were more concerned with the identification of the problem while Sensing type managers were more focused on solving the problem. It should be noted that the identification of a problem can be likened to Strategic leadership behavior such as looking outward to competitors, customers, and the future while the solving of a problem can be likened to Tactical leadership behavior (a more step-by-step, standard approach to leadership) such as developing a maintenance strategy for sustaining a strategic perspective. A more recent study by Hunt (1988) on problem recognition ability and its importance to strategic managers, also found that Intuitive managers have significantly higher skill at recognizing strategic problems in written case scenarios than managers with a Sensing preference. These studies suggest that those individuals with a preference for Intuition were exhibiting Strategic leadership behavior, looking outward for strategic issues/possibilities and into the future while those with a preference for Sensing appeared to exhibit Tactical leadership behavior such as solving the problem (a here and now approach).

Literature regarding the Sensing-Intuition dimension as it relates to organizational level and visionary leadership behavior also suggests Intuitives may be more effective Strategic leaders while Sensors are more effective Tactical leaders. Roach (1986), Agor (1986) and Reynierse (1991) found an unusually high frequency of Intuitives at higher executive levels where strategic, visionary activities abound. Likewise, Reynierse and Harker (1995) found in their study of 427 managers within business and industry that

staff managers tended to be predominantly Intuitive and line managers to be predominantly Sensing. Furthermore, an examination of the relative contribution of personality type to visionary leadership behavior found that Intuitives were more likely to exhibit visionary leadership behavior than Sensors (Sanchez, 1988). These findings support Fitzgerald and Kirby's (1997) recent report of a significant, albeit small, trend for increased preferences for Intuitives at top management levels in organizations. It is possible that Strategic leadership behaviors natural to Intuitive types (e.g., future vision, long range planning) may be seen as more valuable at higher levels of an organization while the practical, present oriented focus (Tactical leadership behaviors) of Sensing type managers may be more important and appropriate to day-to-day managerial duties.

It should be noted that other studies regarding the Sensing-Intuition dimension and various leadership behaviors have found no significant relationships. For example, Malley (1982) and Fitzgerald (1994) found no relationship between Intuition and problem recognition ability. However, small sample sizes and the use of subjects with minimal management experience may have contributed to these discordant findings.

In summary, while research on type preferences and Strategic and Tactical leadership behaviors have produced mixed results, there is some evidence that Intuitives are more effective than Sensors at looking into the future and recognizing strategic problems and possibilities. In addition, Intuitives appear to be frequently associated with visionary, staff management roles in which they exhibit Strategic leadership behavior such as long range planning. Conversely, the literature suggests that Sensors are more effective in line management roles where Tactical leadership behaviors such as

developing a strategy to solve an immediate problem or sustain a course of action, is important and appropriate. Given these findings, the following hypotheses were proposed:

- 1) *Strategic leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Intuitive types than Sensing types.*
- 2) *Tactical leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Sensing types than Intuitive types.*

Another aspect of leadership that has been examined with regard to the Sensing-Intuition dimension is one's relationship with subordinates. Research suggests that there may be a relationship between Intuition and Enabling leadership behavior (i.e., delegating, recognizing others) and Sensing and Directive leadership behavior (i.e., being explicit about objectives and sharing expertise). For example, Routamaa and Ponto (1994) examined type and situational leadership and found Intuitives to be more people-oriented than Sensing types. Hammer and Kummerow (1996) also found Intuition correlated with "leading by delegation" and Sensing correlated with "leading by example" in a study using the Leadership Style scale of the 1994 Strong Interest Inventory. With regard to Sensors, Fitzgerald (1994), in a study of the MBTI and management skills, found those with a preference for Sensing to be rated higher than Intuitive types on controlling and results orientation reflecting a more directive leadership style.

The leadership behavior, coaching subordinates, has also been explored in terms of its relationship to the MBTI. In a study on the relationship between MBTI dimensions and the coaching behaviors of 90 corporate middle managers, Hein (1989) found that

Intuitives had higher scores on specific coaching behaviors (i.e., giving positive feedback) and perceived coaching effectiveness by subordinates than Sensors. Studies exploring the relationship between type and ratings on the Survey of Management Practices (SMP) also found Intuitives were rated higher than Sensors on group motivation and morale measures (Johnson & Golden, 1994; Wilson & Wilson, 1994). More specifically, Intuitives were rated higher than Sensors on work facilitation, recognizing good performance, and interest in subordinate growth.

In summary, these findings suggest individuals with a preference for Intuition are more effective at such behaviors as providing regular ongoing feedback and recognition, delegating responsibilities to others, and encouraging participation (i.e., Enabling leadership behaviors) than those with a preference for Sensing. In addition, there is some evidence that Sensors have a more controlling leadership style and are more effective at Directive leadership behaviors such as being explicit about directions, asking for results, and sharing expertise. Given these findings, the following hypotheses were proposed:

3) *Enabling leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Intuitive types than Sensing types.*

4) *Directive leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Sensing types than Intuitive types.*

Thinking-Feeling and Leadership Behavior. While the Sensing-Intuition dimension suggests people prefer to gather information in alternate ways, the Thinking-Feeling dimension suggests that people prefer to form judgments and come to conclusions in alternate ways. Myers (1993) stated that Thinking types use logical

analysis to reach conclusions, can work without harmony and tend to be firm-minded and decide things impersonally, sometimes paying too little attention to other people's wishes. Conversely, Feeling types use values to reach conclusions, work best when in harmony with others, are sympathetic, enjoy pleasing others and often let decisions be influenced by their own and other people's likes and dislikes.

Based upon Jungian theory one may argue that a relationship exists between the Thinking-Feeling dimension and the Enabling and Directive leadership dilemmas as described previously. In fact, the results of a study by Routamaa and Ponto (1994) suggests such a relationship does exist. Using a revised combination of Reddin's 3-D effectiveness model and Hersey and Blanchard's situational leadership model in a study of 159 Finnish managers, Routamaa and Ponto found that Feeling types are more social (high on relationships orientation) in their leadership behavior than Thinking types. Further support for the relationship between the Thinking-Feeling dimension and personality was provided by Walck (1991). In a written case analysis performed on 168 undergraduate students, she found that Feeling types used participative management more effectively (outperformed) than Thinking types. In other words those with a preference for Feeling tended to exhibit more Enabling leadership behaviors such as asking people for their input and opinions, building relationships and being participative, than those with a preference for Thinking.

In addition, results of studies regarding type and certain management skills as assessed by the Survey of Management Practices (SMP) found Feeling types gave themselves higher ratings on encouraging upward communication and participation, work

facilitation, approachability, team building, recognizing good performance, delegation (permissiveness), and interest in subordinate growth. Thinking types rated themselves higher on clarification of goals and objectives, orderly work planning, expertise, time emphasis, and goal pressure (Johnson & Golden, 1994; Wilson & Wilson, 1994).

Furthermore, in a study of 37 engineering department chairpersons, Frankowski (1992) found Thinking types reflected a more telling leadership style than Feeling types. More specifically, utilizing the LEAD-Self Instrument, he found Thinking types to have a high reliance on task orientation and a low reliance on relationships such that Thinking types were apt to define worker roles and give clear, direct, and specific directions.

The findings of these three studies would suggest that those individuals with a preference for Feeling are more effective at Enabling leadership behaviors such as delegating responsibilities, pushing critical decisions down, providing feedback, and recognizing subordinates than Thinking types. Conversely according to this research and Jungian typology, Thinking types would be expected to focus more on work than people and be more effective at Directive leadership behaviors such as clarifying goals, sharing expertise, and being explicit about decision rules and expectations.

However, it should be noted that some studies suggest that there is little if any relationship between the T-F dimension and leadership style (Berg, 1993; Vail, 1991). In addition, Schweiger and Jago (1982) found no relationship between choices of participative or autocratic decision-making methods and the Thinking-Feeling dimension as measured by the Vroom/Yetton Problem Set. However, it is possible that the sample

(62 students in a Master's of Business Administration program) did not possess enough work experience to allow for an adequate test of this relationship.

In summary, while some research regarding the link between the Thinking-Feeling dimension and the Enabling-Directive leadership dilemma has shown mixed results, several studies suggest that some relationships do exist. There is some evidence that Feeling types are more social in their leadership style and are more effective at Enabling leadership behaviors such as managing participatively, being approachable, learning to give up control (delegation), and providing feedback and recognition than Thinking types. In addition, some of the literature also suggests that Thinking types are more goal oriented in their leadership style and would be more effective at Directive leadership behaviors such as clarification of goals, sharing expertise and being explicit about rules and expectations. Given this evidence, the following hypotheses were proposed:

5) *Enabling leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Feeling types than Thinking types.*

6) *Directive leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Thinking types than Feeling types.*

Method

Participants

Participants were 52 managers in northern California. Forty-four managers were from a high technology company and 8 managers were from a large, public university. Descriptive information on the participants is presented in Table 1. Criteria regarding level of management and years of experience was established because the Leadership Box

Table 1

Descriptive Information on Sample Characteristics (n = 52)

Variable	<u>N</u>	%
<u>Sex</u>		
Male	36	69.2
Female	16	30.8
<u>Length of Time in Management</u>		
3 to 5	6	11.5
6 to 10	15	28.8
11 to 20	21	40.4
More than 20	10	19.2
<u>Major Field of Study</u>		
Business/Management	20	38.5
Liberal Arts	11	21.2
Technical Science	21	40.4
<u>Highest Level of Education</u>		
Some college	2	3.8
Bachelor's Degree	9	17.3
Some Graduate School	7	13.5
Master's Degree	28	53.8
Professional degree (Ed.D., J.D., Ph.D.)	6	11.5
<u>Myers-Briggs Type Indicator Preferences</u>		
Sensing (S)	18	34.6
Intuitive (N)	34	65.4
Thinking (T)	42	80.8
Feeling(F)	10	19.2

was designed for the assessment and coaching of leadership behaviors in executives and high level managers. Its premise maintains that executives and high level managers typically have different job responsibilities and duties (e.g., responsibility for short and long term planning and more complex organizational issues) from those individuals new to management. Hence, this researcher in conjunction with the developers of the Leadership Box, established criteria regarding the level and years of experience. Thus, the participants of this study were 2nd level managers (persons who managed managers with direct reports) or above with at least three years of management experience. Approximately 12% of the participants had been in management 3 to 5 years. 29% had been in management 6 to 10 years, 40% indicated they had been in management 11 to 20 years and 19% indicated they had been in management for more than 20 years.

Of the 52 managers, 69% were male and the average age was 45.20 years ($SD = 7.32$). Over 50% of the participants reported having at least a master's degree. Approximately 39% indicated that business/management was their major field of study, 21% indicated that they were liberal arts majors, and about 40% indicated that technical/science was their major field of study.

With respect to the MBTI preferences, 18 of the participants were measured as having the Sensing personality preference (S), while 34 were found to be Intuitives (N). Forty-two of the participants were measured as having the Thinking personality preference (T), while 10 were recorded as Feeling types (F).

Materials

The Leadership Box Questionnaire. As originally developed, individuals completing the Leadership Box sort behavioral statement cards by how effective they feel they are at each of the behaviors in their current job. As mentioned previously, the Leadership Box's intent is to assist leaders in the identification of the leadership dilemma causing them the most challenge and difficulty in their current position (via personal assessment of their effectiveness regarding particular leadership behaviors.)

The Leadership Box typically contains 36 cards: one selection card to identify the primary paradox (the paradox which presents the biggest challenge in a manager's job), three dilemma cards describing each of the paradoxes, eight cards with behavioral statements relating to each paradox (24 total), one development card for each paradox (3 total), four action cards and one order card. More specifically with regard to the leadership dilemmas, the Leadership Box contains one card describing the Strategic vs. Tactical paradox, four cards containing behavioral statements relating to Strategic leadership behaviors (e.g., "Identify your personal vision," "Identify and articulate your three most critical priorities") and four cards containing behavioral statements regarding Tactical leadership behavior (e.g., "Develop a strategy to get buy-in for your vision," "Set a deadline for a written strategic plan"). The behavioral statements relating to each paradox can be found in Appendix A. The Leadership Box also contains one card describing the Enabling vs. Directive paradox, five cards containing behavioral statements regarding Enabling leadership behavior (e.g., "Encourage dissenting opinions," "Push critical decisions down; support the decision-maker") and three cards containing behavioral statements regarding Directive leadership behavior (e.g., "If you

have expertise, share it.” “Tell your people what you stand for,” and “Be explicit about your decision rules”). Finally, the Leadership Box contains one card describing the third leadership paradox, Political vs. Apolitical. There are eight cards translating this dilemma into behavioral statements as well. However, because the behavioral statements relating to the Political vs. Apolitical dilemma appear to be primarily of the Political dimension and could be understood as both Strategic leadership behavior and Enabling leadership behavior, this research is limited to the more conceptually clear dilemmas, Strategic vs. Tactical and Enabling vs. Directive.

In order to quantify the data, the card sort tool was modified by taking the behavioral statements relating to the Strategic vs. Tactical and Enabling vs. Directive dilemmas and randomly placing them in survey format. Instructions for the leadership behavior questionnaire asked participants to indicate how effective they felt they were at doing each of the leadership behaviors in their current job. Participants responded on a 5-point likert scale ranging from (1) Very Effective to (5) Very Ineffective.

Myers-Briggs Type Indicator (MBTI): Form G. The Myers-Briggs Type Indicator (Form G), is an 126 item forced-choice self-report personality inventory based upon Jungian typology. This instrument was used to identify managers’ preferences for using Sensing or Intuition and Thinking or Feeling. For research purposes, the preference scores were converted into continuous scores, with a theoretical mid-point at 100 and with preference scores in the Sensing (S) and Thinking (T) direction subtracted from 100 and preference scores in the Intuition (N) and Feeling (F) direction added to 100.

The reliability of the continuous MBTI preference scores appears to be quite good. Meta-analytic findings report an average internal consistency reliability of .86 (Harvey, 1996). Furthermore, a large amount of empirical data suggest that the MBTI scores demonstrate good convergent, discriminant and predictive validity utilizing a wide range of criteria such as best-fit type assessments, scores on other personality inventories, occupational preference/choice, and independent behavioral observations (Harvey, 1996; Myers & McCauley, 1985).

Demographic Questionnaire. Participants also were asked to provide background information relevant to the study such as age, gender, highest level of formal education, major field of study, organizational level, functional/business area, and length of time in management.

Procedure

Sixty prospective participants meeting the established criteria received an introductory memorandum from the researcher detailing a description of the study, when it would occur, what materials would be used, what would be expected of participants, and what benefits and/or risks may be associated with participating in the study. The memorandum also stated that the researcher would contact them within one week to determine if they would be participating. Of the 60 prospective participants, 52 completed the questionnaires for a response rate of 86.7%. Those managers who participated were sent an informed consent form (see Appendix B), the MBTI (Form G), a demographic questionnaire and the questionnaire on leadership behaviors (see Appendix C). Managers were asked to return the documents in an enclosed self-

addressed envelope by the specified deadline (participants had approximately 2 weeks to complete the materials). All data were collected so the anonymity and confidentiality of respondents would be maintained.

Results

Means and standard deviations for the individual items and overall scales are presented in Table 2. Estimates of reliability are also presented for the overall scales. Many individual items showed little variability indicating a small range of responses by individuals. Of the four subscales, the Enabling scale appeared to have the greatest variability. As shown, scale reliabilities were generally low with the exception of the Enabling scale which demonstrated an adequate level of reliability ($\alpha = .72$).

Intercorrelations among the items are shown in Table 3. With the exception of the Enabling scale items, many of the correlations among items from other scales are as strong as those with items within the same scale.

Factor Structure

The Leadership Box questionnaire was factor analyzed using principal components analysis with varimax rotation. Using the eigenvalue equal to 1.0 cut-off, this analysis produced 6 factors. These 6 factors together accounted for 70.8% of the variance (see Table 4). Items loadings of .40 or greater were retained. A close examination of the items loading on each factor revealed that many of the items loaded on more than one factor and loaded on factors inconsistent with the hypothesized underlying constructs.

Table 2

Descriptive Statistics on the Leadership Box Items (n = 52)

Item Phrase	<u>M</u>	<u>SD</u>	α
<u>Strategic Scale</u>	2.04	.45	.49
Identify your personal vision.	1.94	.80	
Look outward to competitors, customers, and the future.	2.23	.70	
Build a sustainable, competitive advantage.	2.24	.64	
Identify and articulate your three most critical priorities.	1.75	.68	
<u>Tactical Scale</u>	2.53	.59	.63
Develop a strategy to get buy-in for your vision.	2.44	.80	
Set a deadline for a written strategic plan.	2.77	.98	
Structure your time use for strategic issues.	2.37	.82	
Develop a maintenance strategy for sustaining strategic perspective.	2.55	.77	
<u>Enabling Scale</u>	2.26	.55	.72
Encourage dissenting opinions.	2.13	.69	
Push critical decisions down; support the decision-maker.	2.21	.70	
Provide regular, ongoing feedback and recognition.	2.33	.73	
Ask people for their input and opinions.	1.98	.83	
Learn to let go and give up control.	2.65	.99	
<u>Directive Scale</u>	1.94	.54	.51
If you have expertise, share it.	1.62	.69	
Tell your people what you stand for.	1.87	.79	
Be explicit about your decision rules.	2.33	.81	

Table 3

Intercorrelations among Leadership Box Items

Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Strategic																
1. Identify your personal vision.	1.00															
2. Look outward to competitors, customers, and the future.	.30*	1.00														
3. Build a sustainable, competitive advantage.	.30*	.19	1.00													
4. Identify and articulate your three most critical priorities.	.22	.04	.08	1.00												
Tactical																
5. Develop a strategy to get buy-in for your vision.	.50**	.16	.15	.06	1.00											
6. Set a deadline for a written strategic plan.	.31*	-.03	.00	.03	.33*	1.00										
7. Structure your time use for strategic issues.	.33*	.29*	.20	.41*	.35*	.40*	1.00									
8. Develop a maintenance strategy for sustaining a strategic	.46**	.37*	.29*	.10	.28*	.20	.27	1.00								
Enabling																
9. Ask people for their input and opinions.	.15	.08	-.07	-.01	.25	.28*	.27*	-.03	1.00							
10. Provide regular, ongoing feedback and recognition.	.17	-.07	.21	.32*	.35*	.22	.32*	-.01	.43*	1.00						
11. Encourage dissenting opinions.	.44**	.10	.07	.03	.39*	.19	.16	.21	.42*	.42*	1.00					
12. Learn to let go and give up control.	.07	.03	-.00	.13	.22	.20	.21	-.03	.23	.40*	.19	1.00				
13. Push critical decisions down; support the decision-maker.	.06	.18	.15	.07	.29*	.30*	.28*	-.03	.45**	.28*	.02	.60**	1.00			
Directive																
14. If you have expertise, share it.	.45**	.15	.06	.21	.35*	.16	.05	.29*	.16	.18	.32*	.26	.30*	1.00		
15. Tell your people what you stand for.	.54**	.02	.24	.19	.34*	.31*	.11	.41*	.17	.25	.32*	-.01	.12	.15	1.00	
16. Be explicit about your decision rules.	.28*	.05	.15	.14	.33*	.50**	.44**	.23	.41*	.11	.21	.29*	.50*	.30*	.32*	1.00

Note. All correlations based on a sample with $n = 52$.* $p < .05$.** $p < .001$.

Table 4

Principle Components Analysis/Varimax Rotation on Leadership Box Items

<u>Item Phrase</u>	<u>Factor</u>					
	1	2	3	4	5	6
<u>Strategic Items</u>						
Identify your personal vision.	<u>.76</u>	.18	.18	-.04	.29	.13
Look outward to competitors, customers, and the future.	.14	-.09	-.03	.18	<u>.84</u>	-.18
Build a sustainable, competitive advantage.	.16	.03	.07	-.09	<u>.55</u>	.25
Identify and articulate your three most critical priorities.	.14	.02	-.03	.11	.05	<u>.88</u>
<u>Tactical Items</u>						
Develop a maintenance strategy for sustaining a strategic perspective.	<u>.61</u>	.18	-.12	-.12	<u>.47</u>	.01
Develop a strategy to get buy-in for your vision.	<u>.48</u>	.27	.37	.18	.18	.01
Set a deadline for a written strategic plan.	.20	<u>.80</u>	.12	.06	-.08	.01
Structure your time use for strategic issues.	-.05	<u>.52</u>	.19	.10	<u>.51</u>	<u>.43</u>
<u>Enabling Items</u>						
Provide regular, ongoing feedback and recognition.	.03	.03	<u>.75</u>	.21	-.00	<u>.47</u>
Encourage dissenting opinions.	<u>.47</u>	-.01	<u>.72</u>	.01	.02	-.09
Ask people for their input and opinions.	-.05	.37	<u>.68</u>	.28	.03	-.18
Learn to let go and give up control.	.00	.09	.22	<u>.77</u>	-.03	.16
Push critical decisions down; support the decision-maker.	-.06	.39	.14	<u>.77</u>	.15	-.00
<u>Directive Items</u>						
If you have expertise, share it.	<u>.71</u>	-.08	-.01	<u>.55</u>	-.06	.05
Tell your people what you stand for.	<u>.59</u>	.38	.22	-.25	.00	.17
Be explicit about your decision rules.	.22	<u>.76</u>	.04	.33	.07	.02
<u>Eigenvalue</u>						
	4.49	2.02	1.37	1.26	1.18	1.00
<u>% Variance</u>						
	28.1	12.7	8.6	7.9	7.4	6.3
<u>Cumulative % Variance</u>						
	28.1	40.7	49.3	57.2	64.5	70.8

Note. Bold and underline indicates the loading exceeds .40.

Factor 1 accounted for the greatest amount of variance in the total factor solution (28.1%). Six items attained loadings ranging from .47 to .76. While this factor was composed of items from all 4 scales, the 3 items that loaded only on Factor 1 (e.g., “Identify your personal vision,” “Develop a strategy to get buy-in for your vision,” and “Tell your people what you stand for”) appeared to be concerned with having/sharing a vision.

Factor 2 accounted for 12.7% of the variance in the total solution. Three items had loadings exceeding .40. One of these items, “Structure your time use for strategic issues,” also loaded on factors 5 and 6. However, the other two items loading on factor 2 “Set a deadline for a written, strategic plan” and “Be explicit about your decision rules” were concerned with putting structure to work objectives which seems to reflect the original Tactical leadership scale.

Factors 3 and 4 explained 8.6% and 7.9% of the variance in the total solution, respectively. Factors 3 and 4 both contained items with loadings consistent with the original Enabling leadership scale. However, the two factors seemed to demonstrate two separate dimensions of this behavior. More specifically, in Factor 3, the item seemed to suggest participative behavior (e.g., “Ask people for their input and opinions”) while the 2 items loading onto Factor 4 seemed to suggest empowering behavior (e.g., “Learn to let go and give up control” and “Push critical decisions down: support the decision-maker”).

Factor 5 explained 7.4% of the variance in the total solution. Four items on Factor 5 had loadings exceeding .40. Two of the four items loaded on more than one factor. The two remaining items, “Build a sustainable, competitive advantage” and

“Look outward to competitors, customers and the future,” loaded according to the original Strategic leadership scale.

Factor 6 accounted for the least amount of variance in the total solution (6.3%) with three items with loadings exceeding .40. Two of the three items loaded on two or more factors. This factor did not appear to be consistent with any of the hypothesized scales.

Of the 6 factors, none appeared to reflect Directive leadership behavior. Items from the original subscale loaded across three of the factors and many items loaded on more than one factor.

The Leadership Box and MBTI

Of the original scales and analyses, some support was shown for the Tactical, Enabling (2 different dimension), and Strategic dimension. No support was found for the Directive dimension. Thus, only the hypotheses involving the Tactical, Enabling, and Strategic dimensions were tested in analyses involving the Myers-Briggs Type Indicator (MBTI).

Table 5 displays the intercorrelations among the leadership subscales represented by the factors and the MBTI Sensing-Intuition and Thinking-Feeling scales and the coefficient alphas for the revised subscales. As shown, with the exception of the Strategic leadership scale, all subscales revealed adequate levels of reliability (i.e., alphas greater than or equal to .66). Given the very low reliability of the Strategic subscale, no further analyses were conducted with this scale.

Table 5

Means, Standard Deviations, and Correlations among the Revised Leadership BoxSubscales and MBTI Continuous Scores

Subscale/Scores	<u>M</u>	<u>SD</u>	1	2	3	4	5	6
1. Tactical	2.55	.78	.66					
2. Enabling-Participative	1.98	.83	.39*	—				
3. Enabling-Empowering	2.43	.75	.39*	.36*	.72			
4. Strategic	2.23	.52	.05	.00	.11	.32		
5. S-N Score	111.08	25.80	.22	.25	.20	-.06	—	
6. T-F Score	80.73	22.69	.12	-.07	.11	.22	.25	—

Note. Coefficient alphas for the revised subscales are displayed on the diagonal.

All correlations based upon a sample with $n = 52$.

* $p < .05$.

** $p < .001$.

Intercorrelations among the leadership subscales were modest ranging from .05 to .39.

The Enabling-participative dimension was significantly correlated with the Enabling-empowering dimension ($r = .36$). An examination of the intercorrelations among the Tactical, Enabling, and Strategic subscales with the MBTI scales revealed no significant correlations.

In order to test the hypotheses regarding the Leadership Box subscales and their relationships to the MBTI scales, single-factor analyses of variance (ANOVA) were conducted. Relationships were not expected given the nonsignificant correlations between the leadership subscales and the personality subscales. Table 6 presents the means and standard deviations of effectiveness on Tactical and Enabling leadership behaviors by the S-N category.

A single-factor ANOVA produced no significant differences between Sensors and Intuitives with regard to effectiveness on Tactical leadership behavior ($F(1,50) = 2.02$, n.s.). This suggests that there is no difference between Sensors and Intuitives with regard to effectiveness on Tactical leadership behavior. Thus, Hypothesis 2 (Tactical leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Sensing types than Intuitive types) was not supported.

Two single-factor ANOVAs produced no significant differences among Sensors and Intuitives with regard to Enabling-participative leadership behavior ($F(1,50) = 1.68$, n.s.) or Enabling-empowering leadership behavior ($F(1,50) = 2.19$, n.s.). Thus, Hypothesis 3 (Enabling leadership behavior, as measured by the Leadership Box, will be

Table 6

Means and Standard Deviations of Effectiveness on
Leadership Behaviors by Sensing-Intuition Category

<u>Leadership Behavior</u>	<u>Sensing</u> <u>n = 18</u>	<u>Intuition</u> <u>n = 34</u>
Tactical Leadership Behavior	<u>M</u> = 2.34 (<u>SD</u>) = (.61)	2.66 (.84)
Enabling-Participative Leadership Behavior	<u>M</u> = 1.78 (<u>SD</u>) = (.73)	2.09 (.87)
Enabling-Empowering Leadership Behavior	<u>M</u> = 2.22 (<u>SD</u>) = (.69)	2.54 (.77)

exhibited to a greater degree by Intuitive types than Sensing types) was not supported using either of the two Enabling dimensions.

Table 7 presents the means and standard deviations of effectiveness on Enabling-participative leadership behavior and Enabling-empowering leadership behavior by the T-F category. Single-factor ANOVAs produced no significant differences among Thinkers or Feelers with regard to Enabling-participative leadership behavior ($F(1,50) = .59$, n.s.) or Enabling-empowering leadership behavior ($F(1,50) = .01$, n.s.). Thus, Hypothesis 5 (Enabling leadership behavior, as measured by the Leadership Box, will be exhibited to a greater degree by Feeling types than Thinking types) was not supported using either of the Enabling dimensions.

Discussion

The purpose of this study was to examine the construct validity of the Leadership Box. Results of an exploratory factor analysis showed 6 factors and provided some support for 3 of the 4 leadership scales, Tactical, Enabling, and Strategic.

Factor Structure and Reliability

The results of this research revealed that one of the factors was structurally complex (i.e., many of the items loaded on different scales) but seemed to be concerned with behaviors related to sharing/having a vision. Another factor appeared to be somewhat consistent with the Tactical leadership scale in that the items were related to putting structure to one's work objectives (e.g., setting deadlines, being explicit about decision rules) which can be likened to day-to-day, tactical operations. However, it should be noted that the internal consistency of this scale could be improved by

Table 7

Means and Standard Deviations of Effectiveness on
Leadership Behaviors by Thinking-Feeling Category

Leadership Behavior	Thinking	Feeling
	<u>n</u> = 42	<u>n</u> = 10
Enabling-Participative Leadership Behavior	<u>M</u> = 2.02 (<u>SD</u>) = (.84)	1.80 (.83)
Enabling-Empowering Leadership Behavior	<u>M</u> = 2.43 (<u>SD</u>) = (.80)	2.45 (.50)

generating additional items tapping into a more clearly defined construct of Tactical leadership behavior.

Two of the 6 factors seemed to correspond to the original Enabling scale, although different aspects of Enabling leadership behavior. More specifically, one of the factors included items related to participative leadership behavior (e.g., asking others for input) while the other one included items related to empowering leadership behavior (e.g., learning to let go and giving up control). Both the Enabling-participative and Enabling-empowering scales demonstrated good variability and high internal consistency. The Enabling scale represents a conceptually well-defined construct tapping two aspects of Enabling leadership behavior. It is important to note that two different dimensions of Enabling behavior are being assessed by the Leadership Box and one should differentiate between these aspects when utilizing the Leadership Box as an assessment and coaching tool.

Results also revealed that one of the factors appeared to be related to looking into the future and sustaining a strategic business perspective which corresponds to the Strategic scale (e.g., "Build a sustainable competitive advantage"). However, this scale demonstrated much lower reliability (.32) than the other scales suggesting there may be problems with its internal structure. Possibly the construct, Strategic leadership behavior, encompasses so many different aspects (e.g., recognizing strategic problems, being visionary, being a big picture thinker) that the items of this scale did not adequately tap into all of the aspects. Hence, a more specific definition of Strategic leadership and its components should be established and additional items should be generated accordingly.

The factor that accounted for the least variance loaded on three different scales and did not appear to correspond to any of the proposed dimensions. Furthermore, two of the items loaded on more than one factor. In summary, this factor was ambiguous and difficult to interpret.

Upon close examination, it would appear that the Directive scale is not represented among the six factor model. This could be related to the small number of items in the original scale in addition to a poorly defined content domain regarding what constitutes Directive leadership behavior. Many new items should be generated and these items should exemplify a clear definition of Directive leadership behavior.

Convergent Validity

None of the hypothesized relationships between the Leadership Box subscales and the Myers-Briggs Type Indicator Sensing-Intuition and Thinking-Feeling scales were supported. Tactical leadership was not exhibited to a greater degree by Sensing types than Intuitive types, nor was Enabling leadership exhibited to a greater degree by Intuitive and Feeling types than Sensing types and Thinking types. The lack of findings might be best explained by problems with the internal structure of the Leadership Box. Given only the limited support for the dimensions, future research should be conducted on a revised scale and its relationship to personality and other constructs. Furthermore because construct validation is an ongoing process future research is also called for to further analyze the construct validity of this tool. Additional studies on the properties of this leadership tool (e.g., looking at the Political versus Apolitical items) and its relationship

with other card sort tools, leadership measures, and other external criteria will allow for its further refinement.

Limitations

Several limitations of this study should be recognized. The sample size was relatively small and the sample was comprised of many managers with similar MBTI preferences scores (i.e., the majority of managers were Intuitive and Thinking types). Thus, the small number of Feeling types may have contributed to the lack of findings with regard to that dimension. In light of these limitations, this research should be interpreted with caution.

Implications

There appears to be many ways in which the internal structure of the Leadership Box could be improved using the Enabling leadership scale as a model. Factorially complex items might be re-written or replaced and it may be helpful to re-specify the content domain of each variable and generate additional items for each scale. There is also the implication that this card sort tool should not be converted into survey format and is best utilized as an initial conversation piece focusing on individual leadership items. In fact, this tool may be most valuable as a springboard vehicle for discussing key managerial challenges and in conjunction with other instruments measuring the effectiveness of leadership behaviors.

The development of the Leadership Box represents an effort to make management development practices more targeted by providing a framework for what is important to address in assessing development needs and by providing a way to discuss this type of

information with managers. But such an effort can only be successful if the assessment measure being utilized is reliable and valid. Thus, this study is especially beneficial in that it examines a newly developed measure for the first time and provides initial evidence of this tool's hypothesized dimensionality. Research of this nature will continue to contribute to the efforts of organizations to cultivate effective managers and achieve success in the today's competitive work environment.

References

- Agor, W.H. (1984). Intuitive Management. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Agor, W.H. (1986). The logic of intuition: How top executives make important decisions. Organizational Dynamics, 14 (3), 5-18.
- Baird, J.W., & Bolton, M.K. (1996). The leadership box: Tools for resolving leadership dilemmas. San Jose: ExecutivEdge of Silicon Valley & The Learning Curve.
- Berg, K.H. (1993). Leadership styles and personality types of Minnesota school superintendents. Unpublished doctoral dissertation, University of Minnesota, Minneapolis.
- Fitzgerald, C.R. (1994). The relationship between the MBTI and ratings of management skills, occupational stress, and managerial job satisfaction. In C. Fitzgerald (Ed.), The Myers-Briggs Type Indicator and leadership: Proceedings from an international research conference (pp. 163-176). College Park, MD: National Leadership Institute.
- Fitzgerald, C., & Kirby, L.K. (Eds.). (1997). Developing leaders: Research and applications in psychological type and leadership development. Palo Alto: Davies-Black Publishing.
- Frankowski, R.J. (1992). Relationships of selection method, leadership style, and personality type among chairpersons in engineering departments (Department chairperson selection). Unpublished doctoral dissertation, Marquette University, Milwaukee.

- Hammer, A.L., & Kummerow, J.K. (1996). Strong and MBTI Career Development Guide. Palo, Alto: Consulting Psychologists Press.
- Hein, H.R. (1989). Psychological type, coaching activities, and coaching effectiveness in corporate middle managers. Unpublished doctoral dissertation, University of Bridgeport, Bridgeport.
- Harvey, R.J. (1996). Reliability and Validity. In A. Hammer (Ed.), MBTI applications: A decade of research on the Myers-Briggs Type Indicator (pp. 5-29). Palo Alto, CA: Consulting Psychologists Press.
- Hersey, P., & Blanchard, K.H. (1988). Management of organizational behavior: Utilizing human resources (5th ed.). Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Hunt, T.G. (1988). An investigation of problem recognition: Developing a measure of problem recognition ability and assessing its usefulness to strategic managers. Unpublished doctoral dissertation, Florida State University, Tallahassee.
- Johnson, D.A., & Golden, J.P. (1994). How psychological type influences effective leadership: The Survey of Management Practices and the Type Differentiation Indicator (TDI). In C. Fitzgerald (Ed.), The Myers-Briggs Type Indicator and leadership: Proceedings from an international research conference (pp. 89-97). College Park, MD: National Leadership Institute.
- Kroeger, O., & Thuesen, J.M. (1988). Type talk: The 16 personality types that determine how we live, love and work. New York: Dell Publishing.
- London, M. (1985). Developing managers. San Francisco: Jossey-Bass.

Malley, J.C. (1982). An exploratory investigation into managerial, organizational, and strategic planning correlates of problem recognition. Unpublished doctoral dissertation, Florida State University, Tallahassee.

McCall, M.W., & Lombardo, M.M. (1983). Off the track: Why and how successful executives get derailed (Tech. Rep. No. 21). Greensboro, NC: Center for Creative Leadership.

McCall, M.W., Lombardo, M.M., & Morrison, A.M. (1988). The lessons of experience: How successful executives develop on the job. New York: Lexington Books.

Mitroff, I.I., Barabba, V.P., & Killman, R.H. (1977). The application of behavioral and philosophical technologies to strategic planning: A case study of a large federal agency. Management Science, 24, 44-58.

Myers, I.B. (1993). Introduction to Type (5th ed.). Palo Alto: Consulting Psychologists Press, Inc.

Myers, I.B., & Briggs, K.C. (1962). The Myers-Briggs Type Indicator. Palo Alto: Consulting Psychologists Press, Inc.

Myers, I.B., & McCauley, M.H. (1985). Manual: A guide to the development and use of the Myers-Briggs Type Indicator. Palo Alto: Consulting Psychologists Press.

Ramakrishna, H.V. (1983). Effect of decision and epistemological styles of inquiry on individual problem formulation. Unpublished doctoral dissertation. Georgia State University.

Reynierse, J.H. (1991). The psychological types of outplaced executives. Journal of Psychological Type, 22, 27-32.

Reynierse, J.H., & Harker, J.B. (1995). The psychological types of line and staff management: Implications for the J-P preference. Journal of Psychological Type, 34, 8-16.

Roach, B. (1986.) Organizational decision-makers: Different types for different levels. Journal of Psychological Type, 12, 16-24.

Routamaa, V., & Ponto, V. (1994). Situational leadership and the MBTI types of certain Finnish managers. In C. Fitzgerald (Ed.), The Myers-Briggs Type Indicator and leadership: Proceedings from an international research conference (pp. 189-198). College Park, MD: National Leadership Institute.

Sanchez, A. L. (1988). The contribution of personality type (preferences) and selected situational factors to visionary leadership behavior. Unpublished doctoral dissertation, University of Colorado at Denver.

Schweiger, D.M., & Jago, A.G. (1982). Problem-solving styles and participative decision making. Psychological Reports, 50, 1311-1316.

Vail, J.F. (1991). Leadership styles and personality types of superintendents in South Carolina. Unpublished doctoral dissertation, University of South Carolina, Columbia.

Walck, C.L. (1991). Training for participative management: Implications for psychological type. Journal of Psychological Type, 24, 3-12.

Wilson, J.L., & Wilson, C.L. (1994). Exploring MBTI type relationship to management skills. In C. Fitzgerald (Ed.), The Myers-Briggs Type Indicator and

leadership: Proceedings from an international research conference (pp. 81-88). College

Park, MD: National Leadership Institute.

Appendix A

The Leadership Box Items

The Leadership Box Items

Strategic Items

1. Identify your personal vision.
2. Look outward to competitors, customers, and the future.
3. Build a sustainable, competitive advantage.
4. Identify and articulate your three most critical priorities.

Tactical Items

5. Develop a strategy to get buy-in for your vision.
6. Set a deadline for a written strategic plan.
7. Structure your time use for strategic issues.
8. Develop a maintenance strategy for sustaining a strategic perspective.

Enabling Items

9. Encourage dissenting opinions.
10. Push critical decisions down; support the decision-maker.
11. Provide regular, ongoing feedback and recognition.
12. Ask people for their input and opinions.
13. Learn to let go and give up control.

Directive Items

14. If you have expertise, share it.
15. Tell your people what you stand for.
16. Be explicit about your decision rules.

Appendix B

Informed Consent Form

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Agreement to Participate in Research

Responsible Investigator: Kimberly J. Hopkins, M.S. Student

Title of Protocol: An Examination of the Myers-Briggs Type Indicator (MBTI) and its Relationship to Leadership Behaviors

I have been asked to participate in a research study examining the relationship between the MBTI and leadership behaviors. In order to participate in this study I will be: 1) completing a personality inventory, the MBTI (Form G), 2) completing a short demographic questionnaire, and 3) completing a questionnaire regarding leadership behaviors.

There are no risks in completing the MBTI or the questionnaires. Participants are expected to benefit from the valuable knowledge gained by this study (e.g., findings will have great implications for the identification, training, placement, coaching and development of effective leaders). In addition, interpretation and feedback regarding MBTI scores will be made available to those individuals who request it. Participants will not receive compensation for participating in this study. Copies of the results of this investigation will be made available to those persons who request it.

The results of this study may be published. However, because participants will not be asked to write their name on the materials, their responses will be completely confidential and no information that could identify any of the participants will be included. Questions about this research may be addressed to Kimberly Hopkins at (415) 642-8796 or Rebecca Malatesta, Ph.D. at (408) 924-5637. Complaints or concerns about the research may be directed to Howard Tokunaga, Coordinator, Industrial/Organizational Psychology, Department of Psychology, San Jose State University, (408) 924-5600. Questions or complaints about research, participant's rights, or research related injury may be presented to Serena Stanford, Ph.D., Associate Academic Vice President for Graduate Studies and Research at (408) 924-2480.

Consent for participating in this study is voluntarily given, and you may refuse to participate in the study or in any part of the study.

- The signature of a subject on this document indicates agreement to participate in the study.
- The signature of a researcher on this document indicates agreement to include the above named subject in the research and attestation that the subject has been fully informed of his or her rights.

Subject's Signature

Date

Investigator's Signature

Date

Appendix C

Leadership Box Questionnaire

An Analysis 47

Please indicate how effective you feel you are at doing the following behaviors in your current job by placing the appropriate number in the spaces provided below:

1	2	3	4	5
Very Effective	Effective	Somewhat Effective/ Somewhat Ineffective	Ineffective	Very Ineffective

- _____ Identify and articulate your three most critical priorities.
- _____ Structure your time use for strategic issues.
- _____ Ask people for their input and opinions.
- _____ Be explicit about your decision rules.
- _____ Provide regular, ongoing feedback and recognition.
- _____ Build a sustainable, competitive advantage.
- _____ Develop a maintenance strategy for sustaining a strategic perspective.
- _____ Encourage dissenting opinions.
- _____ Identify your personal vision.
- _____ If you have expertise, share it.
- _____ Learn to let go and give up control.
- _____ Develop a strategy to get buy-in for your vision.
- _____ Look outward to competitors, customers, and the future.
- _____ Push critical decisions down; support the decision-maker.
- _____ Set a deadline for a written strategic plan.
- _____ Tell your people what you stand for.

IMAGE EVALUATION TEST TARGET (QA-3)

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