

A Hierarchical Taxonomy of Leadership Behavior: Integrating a Half Century of Behavior Research

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A major problem in leadership research and theory has been lack of agreement about which behavior categories are relevant and meaningful. It is difficult to integrate findings from five decades of research unless the many diverse leadership behaviors can be integrated in a parsimonious and meaningful conceptual framework. An emerging solution is a hierarchical taxonomy with three metacategories (task, relations, and change behavior). Confirmatory factor analysis of a behavior description questionnaire found more support for this taxonomy than for alternative models.

INTRODUCTION

A large amount of the empirical research on effective leadership has sought to identify the types of behaviors that enhance individual and collective performance. The most common research method has been a survey field study with a behavior description questionnaire. In the past half century, hundreds of survey studies have examined the correlation between leadership behavior and various indicators of leadership effectiveness (Bass, 1990; Yukl, 2002). Other methods (e.g., laboratory experiments, field experiments, critical incidents) have been used much less frequently to identify effective types of leadership behavior.

A major problem in research and theory on effective leadership has been the lack of agreement about which behavior categories are relevant and meaningful for leaders. It is very difficult to compare and integrate the results from studies that use different sets of behavioral categories. There has been a bewildering proliferation of taxonomies on leadership behavior (see Bass, 1990; Yukl, 2002). Sometimes different terms have been used to refer to the same type of behavior. At other times, the same term has been defined differently by various theorists. What is treated as a general behavior category by one theorist is viewed as two or three distinct categories by another theorist. What is a key concept in one taxonomy is absent from another. Different taxonomies have emerged from different research disciplines, and it is difficult to translate from one set of concepts to another.

Task And Relations Behavior

The early leadership research emphasized two general, broadly-defined behavior categories ("metacategories") that are best described as relations-oriented behavior and task-oriented behavior. Examples include consideration and initiating structure (Fleishmen, 1953; Halpin & Winer, 1957) in early research on leader behavior, and concern for people and concern for production in the managerial grid model (Blake & Mouton, 1982). For three decades, research on leader behavior was dominated by a focus on these two broadly-defined categories of behavior. Many studies were conducted to see how measures of

consideration and initiating structure were correlated with criteria of leadership effectiveness, such as subordinate satisfaction and performance. A meta-analysis of this survey research found that both behaviors have a positive but weak correlation with subordinate performance (Fisher & Edwards, 1988). Subsequent research on specific types of task and relations behavior found correlations with unit performance that were sometimes stronger but still not consistent across situations (Yukl, 2002).

Importance Of Leading Change

In their preoccupation with task and relations behaviors, the early scholars mostly ignored change-oriented leadership. Only recently have researchers become interested in the way leaders initiate and implement change in organizations. It is important to clarify the distinction among task-oriented, relations-oriented, and change-oriented behaviors, because all three types of behaviors may be relevant for understanding effective leadership in different situations.

The importance of leading change is suggested by some organization theories (e.g., Miller & Friesen, 1984; Tushman & Romanelli, 1985), but they do not describe the specific types of change behaviors that are required. Theories of transformational and charismatic leadership (e.g., Bass, 1985; Conger & Kanungo, 1998; House, 1977; Shamir, House, & Arthur, 1993) include some change-oriented behaviors, and there is growing evidence that these behaviors are related to effectiveness of leaders (e.g., Lowe, Kroeck, & Sivasubramaniam, 1996). However, the high level of confounding among specific transformational behaviors makes it difficult to determine which ones are most important in a particular situation (Yukl, 1999).

Evidence For The Three Metacategories

The prior theories of leadership do not make a clear distinction among task, relations, and change behavior. The first evidence that change-oriented leadership is a distinct type of behavior comes from two studies conducted during the 1990s. In the first study, Ekvall and Arvonen (1991) developed a behavior description questionnaire with items from earlier questionnaires such as the LBDQ (Fleishman, 1953; Stogdill, Goode, & Day, 1962) and some

new items on aspects of change-oriented leadership. The 36-item questionnaire was administered to subordinates who described 346 Swedish managers, 229 Finnish managers, and 123 American managers. Most of the leaders described were middle-level managers in private companies. There was strong support for a three-factor solution in each national sample, and the factors were labeled production centered, employee centered, and change centered. The latter factor included promoting change and growth, providing creative solutions, encouraging creative thinking by others, experimenting with new ways of doing things, making risky decisions when necessary, and planning for the future. Scales were formed using the best items from the factor analysis. Change-oriented behavior correlated the strongest with subordinate ratings of the manager's competence, whereas employee-centered behavior correlated highest with subordinate satisfaction with the manager.

In the second study, Yukl (1998) administered leader behavior questionnaires to 318 direct reports of managers in charge of 48 organizational units (division, agency, district office, plant) of varying size from 15 private and public sector organizations. Most of the managers occupied middle or upper-level management positions. The leader behavior questionnaire included representative items from the Managerial Practices Survey (MPS), an instrument used for multi-source feedback workshops (Yukl, Wall, & Lepsinger, 1990). The questionnaire also included some items adapted from the MLQ (Bass & Avolio, 1990). Some new items were written to describe aspects of change-oriented behavior not represented in these earlier questionnaires. An exploratory factor analysis produced a clear factor structure for task-oriented behavior, relationship-oriented behavior, and change-oriented behavior. The latter factor included identifying external threats and opportunities, envisioning new possibilities, proposing innovative strategies, and encouraging innovative thinking by followers. Scales were created to measure each metacategory. The scale scores for task, relations, and change behavior were all correlated significantly with subordinate satisfaction with the leader and organizational commitment.

These two studies made a good start at identifying a distinct category of change-oriented leadership and showing that it is relevant for

leadership effectiveness. One limitation of both studies was the failure to identify distinct component behaviors for each metacategory. A half century of research on leadership behavior has taught us the dangers of relying exclusively on behavior constructs that are very broad and abstract (Yukl, 1998). The specific behaviors provide a much better basis for developing contingency theories of leadership effectiveness (Yukl, 2002). A hierarchical taxonomy provides a way to reconcile the three-factor solution with the many specific behaviors already found relevant for effective leadership in several types of research.

Research Objectives

This paper describes a hierarchical taxonomy and research conducted to verify it. The purpose of the research was to evaluate whether the three metacategories provide a basis for developing an integrative taxonomy of leadership behavior.

THE HIERARCHICAL TAXONOMY

The theoretical basis for the distinction among the three metacategories is the primary objective of the behavior. The primary objectives of task behavior include high efficiency in the use of resources and personnel, and high reliability of operations, products, and services. The primary objectives of relations behavior include strong commitment to the unit and its mission, and a high level of mutual trust and cooperation among members. The primary objectives of change behavior include major innovative improvements (in processes, products, or services), and adaptation to external changes.

Because a leader's behavior may have multiple objectives, it is more accurately described in terms of three independent dimensions than in terms of three mutually exclusive behavior categories. For example, providing recognition for significant contributions to the unit reflects a primary concern for the person but also a secondary concern for the mission. Sometimes a leadership behavior involves all three objectives,

such as when consulting with subordinates about ways to apply new technology to make major improvements in productivity.

Several criteria were used in selecting the specific behavior components to include in the proposed hierarchical taxonomy. First, each behavior must be directly observable. It cannot be defined only in terms of attributions or outcomes. Second, each behavior must be potentially applicable to all types of leaders in organizations. Third, each behavior must have primary relevance for one metacategory, even though it could have secondary relevance for the other metacategories. Fourth, each behavior must be grounded in prior theory and research on effective leadership. Prior measures of leadership behavior that provide evidence for the construct validity of the component behaviors include the following:

- C-K Scale: Conger-Kanungo Leadership Scale (Conger & Kanungo, 1998)
- LBDQ-12: Leader Behavior Description Questionnaire (Stogdill, Goode, & Day, 1962)
- LOS: Leader Observation Scale (Luthans & Lockwood, 1984)
- LPI: Leadership Practices Inventory (Kouzes & Posner, 1995)
- MBS: Managerial Behavior Survey (Yukl & Nemeroff, 1979)
- MPS: Managerial Practice Survey (Yukl, Wall, & Lepsinger, 1990)
- MLI: Multifactor Leadership Inventory (Castro & Schriesheim, 1998)
- MLQ: Multifactor Leadership Questionnaire (Bass & Avolio, 1990)
- SMP: Survey of Management Practices (Wilson, O'Hare & Shipper, 1990)
- TLI: Transformational Leadership Inventory (Podsakoff, MacKenzie, Morrman, & Fetter, 1990)

The proposed behaviors in each metacategory are shown in Table 1. A description of each component behavior and the prior evidence for it are described next.

Table 1. Hierarchical Taxonomy of Leader Behavior.

Task Behavior
<ul style="list-style-type: none"> • Plan short-term activities • Clarify task objectives and role expectations • Monitor operations and performance
Relations Behavior
<ul style="list-style-type: none"> • Provide support and encouragement • Provide recognition for achievements and contributions • Develop member skill and confidence • Consult with members when making decisions • Empower members to take initiative in problem solving
Change Behavior
<ul style="list-style-type: none"> • Monitor the external environment • Propose an innovative strategy or new vision • Encourage innovative thinking • Take risks to promote necessary changes

Table 2. Similar Task Behaviors in Earlier Measures.

Short-term Planning
<ul style="list-style-type: none"> • Orderly Planning; SMP (Wilson, O'Hare & Shipper, 1990) • Planning; MBS (Yukl & Nemeroff, 1979) • Planning; MPS (Yukl et al., 1990) • Planning & Coordinating; LOS (Luthans & Lockwood, 1984)
Clarifying
<ul style="list-style-type: none"> • Role Clarification; MBS (Yukl & Nemeroff, 1979) • Clarifying Roles and Objectives; MPS (Yukl et al., 1990)
Monitoring
<ul style="list-style-type: none"> • Monitoring & Controlling; LOS (Luthans & Lockwood, 1984) • Monitoring Operations; MPS (Yukl et al., 1990) • Active Management by Exception; MLQ (Bass & Avolio, 1990)

TASK BEHAVIORS

Specific task behaviors include: (1) short-term planning, (2) clarifying responsibilities and performance objectives, (3) monitoring operations and performance. Similar leadership behaviors in earlier measures are indicated in Table 2.

Short-Term Planning

Planning means deciding what to do, how to do it, who will do it, and when it will be done. Because planning is largely a cognitive activity that seldom occurs as a single discrete episode, it

is difficult to observe. Nevertheless, there are some observable aspects such as writing plans, preparing written budgets, developing written schedules, and meeting with others to determine how to accomplish a task. Planning is most observable when a manager takes action to implement plans, a process that often involves clarifying responsibilities and objectives (Yukl, 2002).

A number of empirical studies have identified a behavior similar to short-term planning (see Table 2). Evidence that planning is relevant for effective leadership is provided by research on

managerial competencies (e.g., Boyatzis, 1982). Several survey studies have found a positive correlation between planning and an independent criterion of managerial effectiveness (e.g., Carroll & Gillen, 1987; Kim & Yukl, 1995; Morse & Wagner, 1978; Shipper & Wilson, 1992; Yukl, Wall, & Lepsinger, 1990).

Clarifying Responsibilities

Clarifying is the communication of plans, policies, and role expectations. The purpose of clarifying behavior is to guide and coordinate work activity and make sure people know what to do and how to do it. Clarifying includes setting specific task objectives, and these objectives direct effort toward performance of important duties and responsibilities, encourage a search for efficient ways to do the work, and facilitate evaluation of performance by providing a benchmark against which to compare it.

Clarifying is a core component of initiating structure. It is also the primary component of instrumental (directive) behavior in the path-goal theory of leadership (House & Mitchell, 1974). Although research on the consequences of using initiating structure was inconclusive (Fisher & Edwards, 1988; Podsakoff, MacKenzie, Ahearne, & Bommer, 1995; Wofford & Liska, 1993), research on clarifying has found stronger results. A positive relationship between clarifying and managerial effectiveness was found in several studies, although not for all situations (Bauer & Green, 1998; Kim & Yukl, 1995; Yukl & Van Fleet, 1982; Yukl, Wall, & Lepsinger, 1990). There is ample evidence from lab and field experiments as well as survey studies that setting specific, challenging goals results in higher performance as long as the goals are accepted (see Locke & Latham, 1990).

Monitoring Operations and Performance

Monitoring involves gathering information about the operations of the manager's organizational unit, including the progress of the work, the performance of individual subordinates, the quality of products or services, and the success of projects or programs. Monitoring can take many forms, including observation of work operations, reading written reports, watching computer screen displays of performance data, inspecting the quality of samples of the work, and holding progress review meetings with an individual or group. Evidence that monitoring is a distinct and meaningful behavior is provided by research using observation of managers (Luthans & Lockwood, 1984; Mintzberg, 1973) and by studies involving factor analysis of behavior description questionnaires (e.g., Bass & Avolio, 1990; Yukl et al., 1990).

Monitoring indirectly focuses attention on aspects of performance that are measured and it facilitates the effective use of other behaviors such as recognizing or clarifying. Two observational studies found that leaders who did more monitoring were more effective (Komaki, 1986; Komaki, Desselles, & Bowman, 1989). In the survey studies, monitoring was related to leader effectiveness for some samples but not others (Kim & Yukl, 1995; Yukl, Wall, & Lepsinger, 1990).

RELATIONS BEHAVIORS

Specific relations behaviors include: (1) supporting, (2) developing, (3) recognizing, (4) consulting, and (5) empowering. Similar leadership behaviors in earlier measures are indicated in Table 3.

Table 3. Similar Relations Behaviors in Earlier Measures.

<p>Supporting</p> <ul style="list-style-type: none"> • Consideration; LBDQ-12 (Stogdill et al., 1962) • Supporting; MBS (Yukl & Nemeroff, 1979) • Supporting; MPS (Yukl et al., 1990) • Individualized Consideration; MLQ (Bass & Avolio, 1990) • Individualized Support; TLI (Podsakoff et al., 1990) • Individualized Support; MLI (Castro & Schriesheim, 1998) • Sensitivity to Members; C-K Scale (Conger & Kanungo, 1998) <p>Developing</p> <ul style="list-style-type: none"> • Developing; MBS (Yukl & Nemeroff, 1979) • Training and Development; LOS (Luthans & Lockwood, 1984) • Developing; MBS (Yukl et al., 1990) <p>Recognizing</p> <ul style="list-style-type: none"> • Positive Reinforcement; MBS (Yukl & Nemeroff, 1979) • Contingent Reward Behavior; TLI (Podsakoff et al., 1990) • Recognizing; MPS (Yukl et al., 1990) • Contingent Reward; MLQ (Bass & Avolio, 1990) • Recognition; SMP (Wilson, O'Hare, & Shipper, 1990) • Encouraging; LPI (Kouzes & Posner, 1995) <p>Consulting</p> <ul style="list-style-type: none"> • Participative Leadership; (House & Mitchell, 1974) • Decision Participation; MBS (Yukl & Nemeroff, 1979) • Consulting; MPS (Yukl et al., 1990) • Encouraging Participation; SMP (Wilson, O'Hare, & Shipper, 1990) <p>Empowering</p> <ul style="list-style-type: none"> • Tolerance of Freedom; LBDQ-12 (Stogdill et al., 1962) • Delegation; MBS (Yukl & Nemeroff, 1979) • Delegation; SMP (Wilson, O'Hare, & Shipper, 1990) • Delegating; MPS (Yukl et al., 1990) • Enabling; LGI (Kouzes & Posner, 1995) 	
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Supporting

Supporting is defined as showing consideration, acceptance, and concern for the needs and feelings of other people. Supporting is the core component of consideration (Fleishman, 1953; Stogdill, Goode, & Day, 1962) and supportive leadership (Bowers & Seashore, 1966; House & Mitchell, 1974). Supporting is also a component of individualized consideration, as defined by Bass and Avolio (1990) and Podsakoff et al. (1990). Studies involving factor analysis of behavior description questionnaires indicate that

supporting is a distinct and meaningful aspect of leadership behavior (see Table 3).

Supportive leadership helps to build and maintain effective interpersonal relationships. There is strong evidence that supporting is related to follower satisfaction with the leader (Bass, 1990; Yukl, 1998). However, only a weak, inconsistent relationship has been found between supporting and follower performance (e.g., Fisher & Edwards, 1988; Kim & Yukl, 1995; Yukl, Wall, & Lepsinger, 1990). Supporting is more likely to be effective when combined with other relevant leadership behaviors.

Developing

The core component of developing is coaching. Examples include showing someone a better way to do a task, asking questions that help someone learn how to perform a task better, helping someone learn from a mistake, and explaining how to solve a complex problem rather than just providing the solution. Developing also includes providing opportunities to develop skills and confidence (e.g., special assignments, challenging new responsibilities) and facilitating skill learning (making it easier for subordinates to attend courses or workshops). Developing was identified as distinct and meaningful leadership behavior in studies involving observation of managers (Luthans & Lockwood, 1984), and in some studies involving factor analysis of behavior description questionnaires (see Table 3). In the MLQ (Bass & Avolio, 1990), some developing items are included in the individualized consideration scale.

The descriptive research provides evidence that effective managers take a more active role in developing the skills and confidence of subordinates (Bradford & Cohen, 1984; McCauley, 1986). In the survey research, developing was correlated with follower performance in some studies but not others (Javidan, 1992; Kim & Yukl, 1995; Yukl, Wall, & Lepsinger, 1990).

Recognizing

Recognizing involves giving praise and showing appreciation to others for effective performance, significant achievements, and important contributions to the organization. Recognition is often given along with tangible rewards. The combination of recognition and contingent rewards has been given a variety of labels in the leadership literature (e.g., contingent reward behavior, positive reward behavior). Several studies involving factor analysis of behavior description questionnaires have found evidence that recognizing (either alone or combined with rewarding) is a distinct type of leadership behavior (see Table 3). Our taxonomy emphasizes recognition because it is easier to provide than tangible rewards, it is more personal, and it is relatively independent of the formal reward system of the organization.

Descriptive studies in organizations (Kouzes & Posner, 1995; Peters & Austin, 1985) suggest

that effective leaders provide extensive praise and recognition to subordinates for their achievements and contributions. A rare field experiment by Wikoff, Anderson, and Crowell (1983) found that praise by the supervisor increased subordinate performance significantly. Most survey studies on the consequences of recognizing have found a positive correlation with subordinate satisfaction. However, results for effects on performance are less consistent in the survey studies (e.g., Kim & Yukl, 1995; Lowe, Kroeck & Sivasubramaniam, 1996; Podsakoff & Todor, 1985; Podsakoff, Todor, Grover, & Huber, 1984; Yukl et al., 1990).

Consulting

The key component of consultation is involving followers in making important decisions. Consultation with individuals or the group is one form of participative leadership. This type of leadership behavior is included in the path-goal theory of leadership (House & Mitchell, 1974) and the normative leadership models proposed by Vroom and Yetton (1973) and by Vroom and Jago (1988). Evidence that consultation is a distinct and meaningful form of leadership behavior is provided by studies involving factor analysis of behavior description questionnaires (see Table 3).

The potential benefits of consultation include better decisions and greater acceptance of decisions by people who will implement them or be affected by them. Hundreds of studies have evaluated the consequences of participative leadership, and reviews of this literature generally conclude that there is only a weak, inconsistent relationship with follower satisfaction and performance (e.g., Leana, Locke, & Schweiger, 1990; Sagie & Koslowsky, 2000). Only a small number of studies examined the effects of consulting as a separate type of participative leadership, and here again the result were inconsistent (Yukl & Nemeroff, 1979; Yukl et al., 1990). The effectiveness of consultation may depend on aspects of the situation such as the type of task, the distribution of relevant information, and the values of followers (Vroom & Yetton, 1973; Yukl, 2002).

Empowering

Empowering includes delegating and providing more autonomy and discretion to subordinates. Evidence that empowering is a

distinct form of leadership behavior is provided by factor analysis of behavior description questionnaires (see Table 3), and by studies in which delegation and consultation were found to have distinct antecedents and consequences (Leana, 1987; Yukl & Fu, 1999).

Empowering is likely to result in more commitment by a subordinate to implement decisions effectively. It can improve decision quality when a subordinate has more expertise in how to do the task than the manager, especially if there is need for a quick response to a changing situation. The results from survey research on the relationship between delegation and subordinate performance have been inconsistent and difficult to interpret, which may reflect problems in the criterion measures (e.g., Bauer & Green, 1996; Leana, 1987; Schriesheim, Neider, & Scandura, 1998; Yukl et al., 1990). In a survey study with

independent, objective criteria, Miller and Toulouse (1986) found that the amount of delegation by top executives in 97 small businesses was related to their profitability and sales growth. Descriptive research on effective management also supports the effectiveness of delegation and empowerment when used in appropriate situations (see Bass, 1990; Yukl, 2002).

CHANGE BEHAVIORS

Specific change behaviors include: (1) external monitoring, (2) envisioning change, (3) encouraging innovative thinking, and (4) taking personal risks to implement change. Similar leadership behaviors in earlier measures are indicated in Table 4.

Table 4. Similar Change Behaviors in Earlier Measures.

External Monitoring	<ul style="list-style-type: none"> • Networking; MPS (Yukl et al., 1990) • Environmental Sensitivity; C-K Scale (Conger & Kanungo, 1998) • Environmental Sensitivity; MLI (Castro & Schriesheim, 1998)
Envisioning Change	<ul style="list-style-type: none"> • Inspirational Motivation; MLQ (Bass & Avolio, 1990) • Articulates a Vision; TLI (Podsakoff et al., 1990) • Inspiring; MPS (Yukl et al., 1990) • Strategic Vision Articulation; C-K Scale (Conger & Kanungo, 1998) • Articulating a Vision; MLI (Castro & Schriesheim, 1998) • Inspiring; LPI (Kouzes & Posner, 1995)
Encouraging Innovating Thinking	<ul style="list-style-type: none"> • Intellectual Stimulation; MLQ (Bass & Avolio, 1990) • Intellectual Stimulation; TLI (Podsakoff et al., 1990) • Intellectual Stimulation; MLI (Castro & Schriesheim, 1998)
Taking Personal Risks	<ul style="list-style-type: none"> • Personal Risktaking; C-K Scale (Conger & Kanungo, 1998) • Self-sacrifice; MLI (Castro & Schriesheim, 1998)

External Monitoring

One of the most important activities of executives is to monitor the external environment and identify threats and opportunities for the organization. This change-oriented behavior is also called "environmental scanning." Most leaders of business organizations need to be

sensitive to a wide range of information, including the concerns of customers and clients, the availability of suppliers and vendors, the actions of competitors, market trends, economic conditions, government policies, and technological developments. The information may be gathered in a variety of ways (e.g., reading government

reports and industry publications, attending professional and trade meetings, talking to customers and suppliers, examining the products and reports of competitors, conducting market research, and developing an external network of information sources).

After the information is gathered, it must be analyzed and interpreted. Identifying problems or opportunities is a separate process from proposing solutions or new strategies. Interpreting events and explaining why change is needed is a key behavior in theories of change management (Kotter, 1996; Nadler et al., 1995). Prior research involving factor analysis of survey questionnaires (see Table 4) provides some evidence that external monitoring can be treated as a distinct type of leadership behavior. However, these studies do not tell us whether gathering and analyzing information should be differentiated from interpreting information for followers.

Some field studies provide evidence that external monitoring and interpretation of events is related to effective leadership. Bourgeois (1985) studied 20 companies and found that profitability was greater when executives had an accurate perception of the amount of industry volatility in markets and technology. Grinyer, Mayes, and McKiernan (1990) found that the leaders of high-performing companies did more external monitoring (e.g., environmental scanning, consultation with key customers) than leaders of low-performing companies and were quicker to recognize and exploit opportunities revealed by it. More external monitoring is needed when the organization is highly dependent on outsiders (e.g., clients, customers, suppliers, subcontractors, joint venture partners), the environment is rapidly changing, or the organization faces severe competition or serious threats from outside enemies (Ginter & Duncan, 1990).

Envisioning Change

Articulating an inspiring vision of a better future is a common element in most theories of transformational and charismatic leadership. A vision is more effective in influencing follower commitment to a proposed strategy or change if it is relevant for follower values and ideals, it is communicated with enthusiasm and confidence, and it is perceived as feasible. Several studies that included factor analyses of behavior description questionnaires found evidence supporting the

construct validity of this type of behavior (see Table 4). Evidence that envisioning is relevant for effective leadership is provided by survey field studies (see Lowe et al., 1996), laboratory experiments (e.g., Howell & Frost, 1989; Kirkpatrick & Locke, 1996), and descriptive studies (e.g., Bennis & Nanus, 1985; Kouzes & Posner, 1995).

Encouraging Innovative Thinking

Encouraging innovative thinking by others can be differentiated from proposing innovations yourself, and a leader can use various combinations of the two behaviors. Evidence that encouraging innovative thinking is distinct and meaningful is provided by studies involving factor analysis of questionnaires on transformational leadership (see Table 4). The behavior is similar to "intellectual stimulation" in the MLQ (Bass & Avolio, 1990), the TLI (Podsakoff et al., 1990), and the MLI (Castro & Schriesheim, 1998). Evidence that this type of behavior is relevant for effective leadership comes primarily from the survey studies on transformational leadership (see meta-analysis by Lowe et al., 1996). Additional evidence is provided by a field experiment (Barling, Weber, & Kelloway, 1996).

Taking Personal Risks

Undertaking major change is risky, especially when the need for change is not yet obvious to most people and there is a lot of vested interest in maintaining the status quo. The possible risks entailed by pushing for change when there is strong resistance include loss of job, diminished reputation, derailed career, and personal rejection by colleagues. Evidence that this behavior is distinct and meaningful is provided by studies involving factor analysis of behavior description questionnaires (see Table 4).

Empirical research provides evidence that risk taking and personal sacrifice relevant for effective leadership by combat officers (e.g., Frost, Fiedler, & Anderson, 1983; Yukl & Van Fleet, 1982), but the studies did not directly involve initiation of change. More attribution of charisma is likely for a leader who takes risks and makes personal sacrifices to pursue a vision or innovative strategy (Conger & Kanungo, 1998; Shamir et al., 1993), but the effects of risk taking on successful implementation of change have not been directly investigated.

RESEARCH EVIDENCE FOR THE TAXONOMY

A survey field study was conducted to evaluate the proposed hierarchical taxonomy of leadership behaviors. No prior study has included all of these behaviors at the same time. Confirmatory factor analysis was used to determine whether the three metacategories explain more of the variance in the specific behaviors than alternative models of grouping the specific behaviors into metacategories.

Sample

Two types of samples were used in this research. The first sample included 174 middle managers who were participating in training workshops conducted by a consulting company. Managers who volunteered to participate in the study were asked to rate the behaviors of their immediate boss over the past several months. Most of the respondents were managers who described the behavior of a boss who was a middle manager or executive. The questionnaire was completely anonymous, and respondents were not asked to provide demographic information that could be used to identify them. Thus, we did not have accurate information on age, gender, education, or job tenure.

The second type of sample included 101 MBA students who had regular daytime jobs but were attending management courses at night at a large northeastern university. Participation was voluntary, and students were assured that their responses would remain confidential and would not be seen by anyone except the researchers. About 75% of the respondents were professional, nonsupervisory employees who described the leadership behavior of a boss who was a first-level manager. The remainder of the students were managers who described the behavior of a boss who was a middle manager or executive.

Measures Of Leader Behavior

Two different versions of the leadership questionnaire were used in the research. The initial version included sets of items designed to measure the 12 specific behaviors in the proposed taxonomy. The definitions for the behaviors are shown in Table 5. Each behavior was represented by 4 to 5 items adapted from earlier scales. The items had a five-choice response format with anchors for each choice. The anchors emphasized magnitude rather than frequency (1-Not at all or not applicable, 5-To a great extent). The order of scale items was randomized within the constraint that all behaviors must appear in the first part of the questionnaire and no behavior could be concentrated in only one part of the questionnaire. Exploratory factor analysis and item analysis were used to identify the best items for each scale, and these scales were used in the subsequent data analyses.

Based on the results from the analysis of the initial questionnaire, we developed a revised questionnaire to measure the 12 specific behaviors. Each item in the questionnaire had the same five anchored response choices as in the earlier version, but there was also a response choice labeled: "Don't know or not applicable" (which was scored as a "1"). Each behavior scale included four distinct items to ensure content validity and avoid obvious redundancy. The items in the same scale were grouped together under the scale name in order to improve respondent discrimination among the different behaviors. The order of scales was varied so that the task, relations, and change scales were evenly distributed within the questionnaire. This procedure was used to avoid suggesting any grouping of specific behaviors into metacategories.

Table 5. Definition of the 12 Specific Leadership Behaviors

CLARIFYING ROLES: assigning tasks and explaining job responsibilities, task objectives, and performance expectations.

MONITORING OPERATIONS: checking on the progress and quality of the work, and evaluating individual and unit performance.

SHORT-TERM PLANNING: determining how to use personnel and resources to accomplish a task efficiently, and determining how to schedule and coordinate unit activities efficiently.

CONSULTING: checking with people before making decisions that affect them, encouraging participation in decision making, and using the ideas and suggestions of others.

SUPPORTING: acting considerate, showing sympathy and support when someone is upset or anxious, and providing encouragement and support when there is a difficult, stressful task.

RECOGNIZING: providing praise and recognition for effective performance, significant achievements, special contributions, and performance improvements.

DEVELOPING: providing coaching and advice, providing opportunities for skill development, and helping people learn how to improve their skills.

EMPOWERING: allowing substantial responsibility and discretion in work activities, and trusting people to solve problems and make decisions without getting prior approval.

ENVISIONING CHANGE: presenting an appealing description of desirable outcomes that can be achieved by the unit, describing a proposed change with great enthusiasm and conviction.

TAKING RISKS FOR CHANGE: taking personal risks and making sacrifices to encourage and promote desirable change in the organization.

ENCOURAGING INNOVATIVE THINKING: challenging people to question their assumptions about the work and consider better ways to do it.

EXTERNAL MONITORING: analyzing information about events, trends, and changes in the external environment to identify threats and opportunities for the organizational unit.

Results

The internal consistency reliability for each scale was determined with the Cronbach alpha statistic, and the values for all scales in both versions of the questionnaire exceeded the recommended lower bound for an acceptable estimate of internal consistency ($\alpha > .70$). The lowest alpha value for any scale was .77, and most of the values were greater than .80.

The mean scale scores for the 59 MBA students who used the randomized version were compared to the corresponding scores for the 48 MBA students who used the grouped version, and

there were no significant differences. We used the students rather than the managers for this analysis of equivalence, because the 131 managers who filled out the randomized version were not from the same companies as the 37 managers who filled out the grouped version. Scale scores from both versions were used to ensure a sample large enough to do the confirmatory factor analysis.

The scale intercorrelations for the combined sample ($N = 275$) are shown in Table 6. The pattern of correlations is consistent with the proposed grouping of behaviors into metacategories, but within the same metacategory

the values are low enough (less than .70) to treat the behaviors as distinct. The intercorrelations among the 12 behavior scales were analyzed using Lisrel 8.51 confirmatory factor analysis with

maximum likelihood estimation (Joreskog & Sorbom, 1996) to test the fit of the nested sequence of theoretical models.

Table 6. Correlation Matrix for Behavior Scales.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Clarifying												
2. Monitoring	.53											
3. Planning	.67	.58										
4. Consulting	.38	.27	.42									
5. Supporting	.29	.19	.33	.62								
6. Recognizing	.35	.33	.42	.59	.61							
7. Developing	.55	.41	.59	.65	.52	.56						
8. Empowering	.18	.09	.22	.59	.52	.44	.47					
9. Visioning	.47	.37	.54	.54	.46	.58	.61	.41				
10. Risk Taking	.30	.23	.33	.47	.39	.38	.49	.40	.54			
11. Innovating	.41	.36	.47	.59	.45	.54	.65	.51	.69	.59		
12. Scanning	.37	.32	.47	.37	.31	.33	.49	.29	.54	.51	.56	

Three nested factor models derived from the literature were evaluated in terms of the fit of each model to the sample correlation matrix. Model 1 represents the proposition that the variance in all twelve leadership behavior scales can be explained by a single common factor. The common factor could represent an overall leadership activity dimension, or scale method variance, or a combination of both. Model 2 represents the proposition that leader behaviors can be classified as either task-oriented or relationship-oriented. The task metacategory was defined as including clarifying, monitoring, and short-term planning. The relations metacategory

was defined as including supporting, recognizing, developing, consulting, and empowering. The change-oriented behaviors were unconstrained for this model and were free to load on the other two factors. Model 3 represents the the proposed hierarchical taxonomy, as defined earlier in Table 1.

Following current practice (Joreskog, 1993; McDonald & Ho, 2002), multiple criteria were used to test the fit of the models to the matrix of intercorrelations. The Chi-squared statistic was computed to test the overall goodness of fit between the observed correlation matrix and the matrix reproduced from the factor model. A large

value of this statistic indicates a poor fit of the model to the data, because it indicates a significant difference between the observed correlation matrix and the correlations estimated by the theoretical model. Unfortunately, this statistic is affected by sample size as well as model fit. A large sample often yields a significant value even when the model fits the data very well. For that reason, some authors have suggested evaluating Chi squared relative to its degrees of freedom. Marsh and Hocevar (1985) suggested that a ratio of less than 2.0 indicates a reasonable model fit.

Model fit was also evaluated with three indices that are not affected by sample size: the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). The GFI (Bentler, 1990) is an index of how well the theoretical model reproduces the observed correlations. The CFI (Bentler, 1990) is an index of how well the theoretical model fits the data compared to the null model (which hypothesizes no relationships between any variables). CFI and GFI values range from zero to 1.0, and it has been proposed that an acceptable fit requires a value of at least .90, with .95 representing a very good fit (Bentler and

Bonett, 1980; Hu and Bentler, 1999). The RMSEA (Steiger, 1990) is an estimate of the mean difference between each observed and reproduced correlation. It has been proposed that an acceptable fit requires a value of .08 or less, with .05 representing a very good fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). It must be noted, however, that all decision criteria for judging the adequacy of fit of a measurement model are only rules of thumb.

The results from the comparison of models are shown in Table 7. For models 1 and 2 there was a poor fit to the data. Thus, we can reject the hypotheses that the intercorrelations among the twelve leader behaviors can be explained in terms of a single common factor or by a two-factor (task vs. relations) model. The results indicated that the three-factor TRC model fits the data significantly better than does the traditional two factor model, and most of the fit indices were adequate. Nevertheless, the moderately large Chi-square value associated with Model 3 indicates that an additional path or paths could be added from the latent factors to the observed scales in order to reproduce the intercorrelations among the scales more closely.

Table 7. Nested Confirmatory Factor Analyses of Leader Behavior Models.

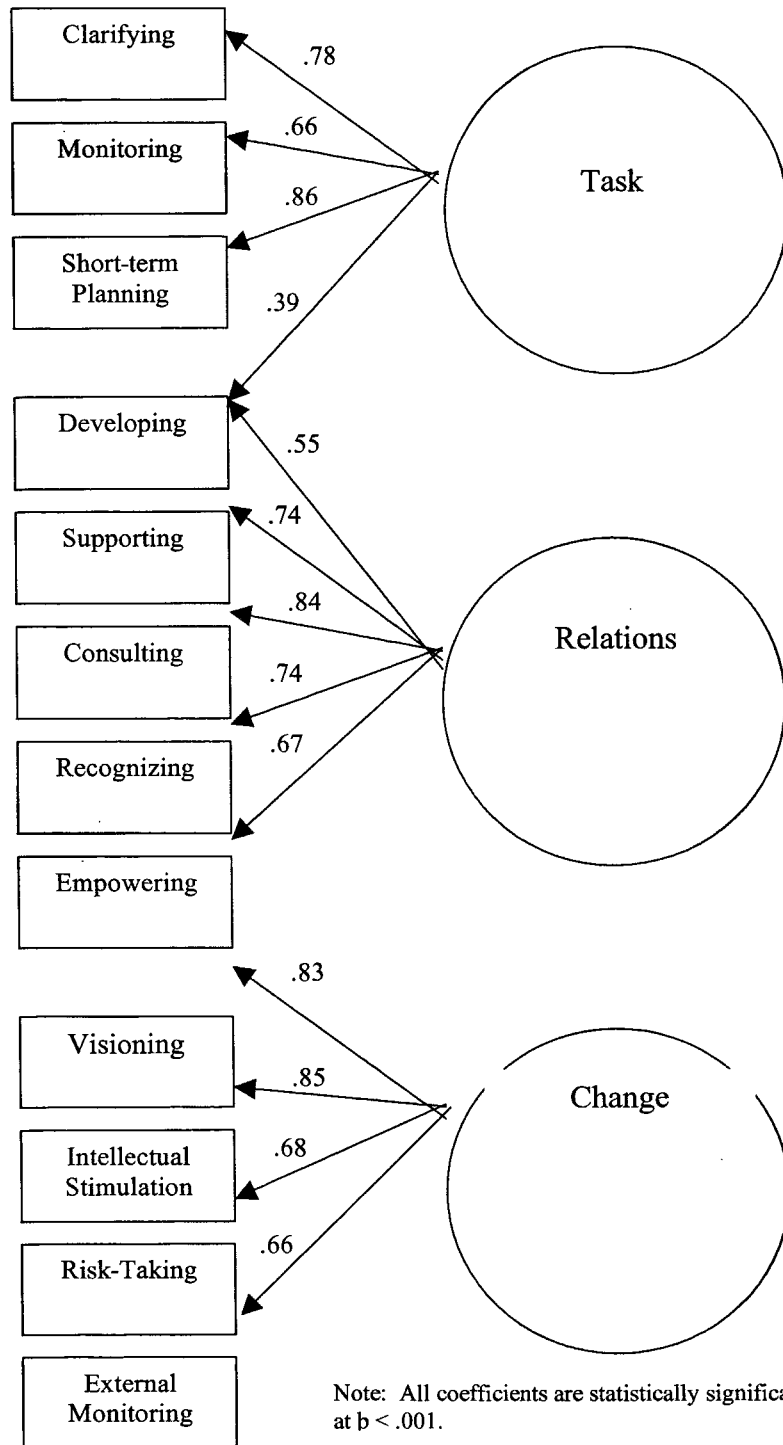
Model	Description	χ^2	<i>df</i>	ρ	GFI	CFI	RMSEA
1	One-Factor	454	54	.00	.78	.83	.16
2	Traditional Two-Factor	219	49	.00	.88	.92	.11
3	Three-Factor TRC	151	51	.00	.92	.95	.08
3a	Add Task to Developing	95	50	.00	.95	.97	.06

Note: GFI = Goodness of fit index; CFI = comparative fit index; RMSEA = Root mean square error of approximation.

Examination of the modification indices associated with Model 3 indicates that adding an additional path from the task factor to the developing scale yields a significant improvement in the fit of the model to the data. Each of the fit indices improved, and the ratio of Chi-squared to degrees of freedom dropped below 2.0. Paths should be added in confirmatory factor analysis only if there is a theoretical rationale to support

their addition (McDonald & Ho, 2002). The additional path is appropriate, because most developing behaviors can contribute simultaneously to task and relations objectives. We also explored the possibility of adding other paths to Model 3, but they yielded only small improvements in fit. The factor loadings for the modified Model 3 are shown in Figure 1, and they are all statistically significant.

Figure 1 Path Coefficients for Modified Model 3.



DISCUSSION

The proposed hierarchical taxonomy includes most of the specific behaviors found to be relevant for effective leadership in research conducted over the past half century, even though the labels are not always the same. We found the 12 specific behaviors measured by the questionnaire can be grouped into the three proposed metacategories in terms of their primary objective. The results from the confirmatory factor analysis showed that the model representing the proposed hierarchical taxonomy provided a better fit with the data than any of the alternative models we tested.

Our hierarchical taxonomy offers a number of advantages. It provides a parsimonious and meaningful conceptual framework that shows how the behaviors are interrelated. It combines the parsimony of a few, broadly defined metacategories with the greater explanatory power of specific component behaviors that can be related to the requirements for a particular situation. It helps to integrate findings from prior research, and it can be used to derive more comprehensive theories of effective leadership.

The use of objectives as the basis for identifying the metacategories does not sort all specific behaviors into mutually exclusive categories, because actual behaviors often involve more than one type of objective. For example, consultation can be used either to improve the efficiency of procedures for performing the current task, or for eliciting innovative ideas for new tasks. Encouraging innovative thinking (intellectual stimulation) can be used either to develop the cognitive skills of subordinates or to encourage a more creative, open-minded view of change. A more intensive analysis would reveal whether the behaviors differ in important ways when used for different purposes. In the process, we could gain a better understanding of best practices for managers in different situations.

The taxonomy identifies behaviors that are potentially relevant for effective leadership, but it is not assumed that they are equally relevant in all situations, or that every behavior is relevant in every situation. In future research, it will be desirable to relate the leadership behaviors to criteria of leadership effectiveness. Because

many of the behaviors emphasize leader influence on collective processes rather than on dyadic processes, it is especially desirable to conduct studies that include objective measures of unit performance. The studies should also measure aspects of the situation (e.g., environmental uncertainty, competitive strategy, external threats and opportunities) that determine the relative importance of the different behaviors. In this way, we can make progress in developing contingency theories of flexible, adaptive leadership.

The research reported here is promising, but it has some limitations. One possible limitation involves the validity of the behavior scales. Our study demonstrated that respondent perceptions of leader behavior can be described by the proposed hierarchical taxonomy, but it was not our objective to verify the accuracy of the individual scales. Questionnaires that require respondents to recognize and remember many different types of behavior observed over a period of months or years are very susceptible to response biases and attributions (Yukl, 1998). Some behaviors may be observed more easily and rated more accurately than others. To minimize measurement problems, we selected only behaviors that have some prior evidence of construct validity. However, our scales are not identical to the ones used in earlier questionnaires. We attempted to select the best examples of each component behavior from a diverse set of existing measures, and we also created some new items to improve content validity. Moreover, we used a response format that emphasized magnitude rather than frequency. Only more intensive research with multiple methods and multiple raters for each leader can assess how accurately each of our scales measures the intended behavior construct.

Another possible limitation involves the range of behaviors included in the research. The questionnaire included a representative selection of behaviors for which there was some prior evidence of construct validity, but to limit the length of the questionnaire, we did not include all leadership behaviors identified in prior research. It may be desirable in future research to include additional behaviors to determine if the three metacategories provide an adequate basis for classifying them as well as the behaviors currently in the taxonomy.

A final caveat involves use of the metacategories in leadership research. In the past research there has been an overemphasis on metacategories. For example, much of the research during the 1960s and 1970s used measures of consideration and initiating structure, rather than examining results for specific components of these broadly-defined behaviors. The metacategories are useful for organizing specific behaviors with a similar objective, but they should not be used as a substitute for the specific behaviors. Researchers should examine results for the specific behaviors as well as the metacategories in the same study. The utility of the metacategories will depend on the extent to which they are able to improve the prediction of leadership effectiveness or the explanation of why some leaders are more effective than others in a given situation.

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