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Developing an Upward Feedback Instrument for Supervisor Development

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THESIS

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Abstract

Recently, organizations have been modifying performance appraisal systems to collect data from multiple sources to guide the development of supervisors. Upward feedback programs focus on development rather than appraisal by supplementing traditional downward feedback with subordinate feedback. The upward feedback instrument developed in this study was designed to measure effective leadership behaviors utilizing an existing five-dimension leadership taxonomy and a new dimension that represents creating a fun workplace.

The developed instrument and a proven commercial instrument utilizing the same theoretical framework were administered to samples of $N = 391$ and $N = 417$ respectively, and tested for reliability and validity. Scale reliability of both instruments was assessed utilizing internal reliability and test-retest analysis. The validity of the commercial instrument was assessed using factor analysis, and the developed instrument validity was assessed using nested model confirmatory factor analysis. The instruments were compared using correlational analysis. Results for the commercial instrument provided limited support for the instrument's external validity. Results for the developed instrument provided limited support for the instrument's ability to validly measure effective leadership behaviors and, limited support for a distinct "Have Fun" dimension. The instruments' scales were generally highly correlated.

DEVELOPING AN UPWARD FEEDBACK INSTRUMENT FOR SUPERVISOR DEVELOPMENT

I. Introduction

General Issue

Traditional performance appraisal systems rely on the supervisor's immediate boss as the primary source of both performance assessments and developmental feedback. Linking the seemingly related tasks of appraisal and development in the same program creates limits on feedback in both balance and dimension. Due to the high stakes involved with formal performance assessments, raters are reluctant to provide critical feedback that may aid in supervisor development. Traditional performance appraisals become part of the supervisor's official permanent record, and are used to make pay and promotion decisions. As a result, supervisors do not get the critical feedback that could help them modify their behaviors to become more effective leaders in their organizations. Overly positive appraisals also distort the true picture of supervisors' areas of strengths and weaknesses. This problem is compounded by use of a single feedback source. Raters often observe only a small portion of their employee's behaviors. The single perspective of traditional performance appraisal systems fails to recognize perceptions held by a supervisor's peers, subordinates, and critical stakeholders.

Recently, organizations have been modifying their performance appraisal systems to collect data from multiple sources to guide the development of supervisors. Multiple-

source and upward feedback programs focus on development rather than appraisal by supplementing the data traditionally provided by bosses with one or more sources of feedback from others such as subordinates, peers, or customers. Unlinking the appraisal process from the development process further emphasizes the focus on leadership development and may increase the accuracy of the feedback. By giving the supervisor a more complete, and possibly more accurate, picture of his or her performance, supervisors can make meaningful behavioral changes that are directed toward the needs of all the groups involved in the accomplishment of the organization's work.

While recent studies seem to confirm the value of multi-source feedback in supervisory development, the issue remains as to how best to evaluate a supervisor's performance. Many studies are focusing on leadership aspects of supervisor performance, but as leadership is a broadly defined construct there exists many ways to evaluate the leadership effectiveness of supervisors. One such method for evaluating leadership effectiveness is defining and measuring supervisor behaviors that have been identified as leading to effective organizational outcomes.

Background

Aeronautical Systems Center (ASC) and Air Force Security Assistance Center (AFSAC) senior leaders have placed significant emphasis on providing tools that will enhance supervisors' performance as leaders. They concluded that upward feedback was an integral part of supervisory development and began an effort to develop an upward feedback program. A primary goal for the upward feedback program was to be consistent with the leadership principles presented by ASC during the August 2000

Leadership Symposium. Five of the six ASC leadership principles are based on the practices described in Kouzes and Posner's (1987), *The Leadership Challenge.*

The ASC Upward Feedback team reviewed several commercial products that could be used to garner information from subordinates including the Leadership Practices Inventory (LPI) developed by Kouzes and Posner (1997). The cost of commercial surveys, inflexibility of formats, and insufficient coverage of all leadership principles led ASC to explore the possibility of Air Force Institute of Technology (AFIT) assistance. AFIT responded by developing observer and self-rating versions of an Upward Feedback Instrument (UFI) based on the commitments presented in Kouzes and Posner's (1987), *The Leadership Challenge*. The AFIT research team also designed a pilot program to assess the reliability and validity of the feedback and self-assessment instruments.

Research Focus

As part of the larger, Upward Feedback Pilot Study this thesis developed and validated an instrument that generates reliable and valid data regarding leader behavior at both the individual and organizational level. The instrument measures leadership principles valued by ASC and AFSAC, and provides specific guidance to facilitate leader development. The information provided by the upward feedback instruments identify gaps between leaders' and subordinates' beliefs about behaviors that the leader has the ability to effect. The instruments also facilitate tracking of supervisor effectiveness over time.

Overview of Paper

The remainder of this paper is divided into four chapters. Chapter II begins by reviewing existing research literature on upward feedback and multi-rater feedback programs. The literature review first focuses on the practical value of upward feedback programs to an implementing organization and then details the expected effect on supervisor development. Subsequently, research literature is presented that analyses the effects an upward feedback program may have on an organizational culture, and conversely, the effect the existing organizational culture may have on the efficacy of an upward feedback program. The chapter then presents the five Kouzes and Posner (1997) leadership practices chosen by the sponsoring organizations to serve as organizational leadership principles. This section also presents Kouzes and Posner's development and testing of their multi-rater feedback instrument based upon their five practices. The chapter next reviews the sub-dimensions, the leadership commitments, of Kouzes and Posner's leadership practices that form the theoretical framework for the developed upward feedback instrument. A discussion of alternative theoretical frameworks for the upward feedback instrument is presented. The final section in the chapter presents the sixth leadership practice adopted by the sponsoring organizations, the method by which the practice was operationally defined, and the resultant commitments. The chapter concludes with a proposed six-dimension leadership behavior taxonomy.

Chapter III begins with a description of the UFI development process as well as a description of the participants and the sample design. The chapter next describes the methodology followed, and the results obtained, from an attempt to replicate Kouzes and Posner's (1997) LPI reliability and validity research efforts. Subsequently, the chapter

presents the methodology used, and results obtained, from testing the reliability of the UFI scales. The final section in Chapter III discusses the confirmatory factor analysis methodology used to test the content validity of the UFI commitment scales by confirming the underlying latent six leadership practice structure. Chapter IV presents and analyzes the results of the UFI construct validity analysis. The first two analyses consist of a nested model confirmatory factor analysis. The third analysis consists of two correlational comparisons between the UFI commitment scale means and the LPI practice scale means from the sub-sample of respondents that was administered both instruments. The paper concludes with a discussion of the findings of the study, the identification and discussion of the limitations of the study, and recommendations for future research.

II. Literature Review

Introduction

The literature review contains five sections. In the first section, the value and effects of upward feedback and multi-rater feedback assessments are discussed. The first section also addresses the effect the organizational environment has on ratings and the supervisor response to ratings. The second section provides a review of Kouzes and Posner's (1997) multi-rater Leadership Practices Inventory. More specifically, this section will review the five-dimensional leadership behavior taxonomy, which was adopted by this thesis' sponsoring organizations and thus served as a theoretical framework for the Upward Feedback Instrument. Also presented in the second section are the results from Kouzes and Posner's research on the LPI. The UFI commitments are presented in section 3. The fourth section describes the leadership theory used to create the nested model groupings of the five leadership practices for confirmatory factor analysis on the UFI responses. The fifth section introduces a new leadership behavior dimension, Have Fun and the nested models incorporating Have Fun.

Multi-rater Feedback Assessment Programs

Over the past decade, multi-rater feedback has developed into a $100 million industry to provide leaders information about their work behaviors (Hughes, Ginnet, & Curphy, 1999). Indeed, multi-rater feedback has gained such popularity that Ghorpade (2000) and Hughes et al. report that virtually every Fortune 500 company utilizes some form of multi-rater feedback, and that supervisor assessments "often run $300-$400 per target manager" (Hughes et al., 1999:268).

Multi-rater Feedback Value

One of the more practical values of multi-rater feedback instruments is that the items of which they are comprised describe successful leadership behaviors (Smither, London, Vasilopoulos, Reilly, Millsap, & Salvemini, 1995). Information concerning these behaviors may in turn be used as performance goals to guide supervisor development. When supervisors receive a feedback report containing their subordinate's ratings, they have a clear and concise assessment of the frequency with which they display successful leadership behaviors. In turn, the supervisor, with very little interpretation, may establish a self-development program with the goal of increasing his or her use of the lower rated leadership behaviors.

Smither et al. (1995) state that the importance the organization places on supervisory behaviors is communicated to subordinates by their inclusion in the measurement process. As an example, allowing subordinates to rate their supervisor's use of participative leadership behaviors clearly demonstrates to the subordinates and supervisors alike that empowerment is an organizational priority. Multi-rater feedback provides a forum for the organization to communicate to the workforce the types of behavior deemed relevant to successful leadership. Studies by Reilly and Smither (1996) and Smither et al. suggest that the simple act of exposing supervisors to successful leadership behaviors through the application of upward feedback may be as important in the development of successful leaders as receiving feedback itself.

When evaluating the value of upward feedback instruments the focus must also be on how the feedback is utilized and collected. If an organization's primary goal is to develop the leadership abilities of its supervisors, it is best served when utilizing upward

feedback as a developmental tool only. Research suggests that when leadership effectiveness rating is decoupled from the performance appraisal process, raters rate more accurately. In a study conducted by London and Beatty (1993), thirty-four percent of the raters surveyed stated that they would have rated their supervisors differently if the feedback had been utilized as part of the supervisor's performance appraisal. Implied in these results is a subordinate's reluctance to accurately rate their supervisor if the rating is low and can thereby negatively affect the supervisor's ability to succeed in the organization.

Ratings accuracy is also affected by the accountability of the rater. The rater anonymity inherent to most upward feedback programs has been shown to result in ratings free from response biases corresponding to subordinate fears of reprisal. In a 1990 study by London, Wohlers, and Gallagher, twenty-four percent of subordinate raters who participated in a multi-rater feedback process indicated they would have rated their boss differently if the feedback had not been collected anonymously. Additionally, in 1994, Antonioni found that accountable raters consistently rated their manager's leadership behaviors more positively than anonymous raters. An upward feedback program that utilizes subordinate's ratings for leader development only, and allows the subordinate to rate anonymously, results in the most accurate assessment of the leader's behavior.

Any discussion of the value of multi-rater feedback programs must address the most unique value-that of obtaining leadership behavior feedback from the subordinates viewpoint. Subordinates are uniquely positioned to observe the leadership behaviors of

their supervisor as they are the subjects of such behavior and have the greatest occasion to observe said behaviors. As stated by London and Beatty (1993):

> Subordinates are excellently positioned to view and evaluate leadership behaviors. Indeed, they may have more complete and accurate information about many leadership behaviors than supervisors have. It is axiomatic that managers should not be rating behaviors they do not observe, and often leader behaviors exhibited in the manager-subordinate relationship are not observed by the boss. (p. 360)

Additionally, a 1994 research effort concluded that the subordinate ratings in an upward feedback study were "largely separable from supervisor ratings" (Adsit, 1994:7). Given subordinate's ratings are not the same as a leader's supervisor and subordinates observe more pertinent leadership behaviors than supervisors, it appears likely that upward feedback programs provide leaders with behavioral feedback that could be very helpful to their development as a leader. These positive aspects of subordinate ratings, when considered with the rater accuracy gained when feedback is used for developmental purposes only and raters allowed anonymity, suggest that upward feedback programs provide leaders with the most useful and accurate assessments of their leadership behaviors. A necessary condition before a leader can develop a plan or course of action to improve his or her leadership skills.

Upward Feedback Effects on Supervisor Behavior

In 1993, Hazucha, Hezlett, and Schneider found that after administration of an upward feedback instrument "(a) change occurred on the job, (b) others noticed it, and (c) broad, complex skills are what changed" (p. 345). Similarly, research by Atwater and Roush (1995) indicated that "overall, leaders' behaviors as rated by followers improved after feedback" and "Leaders' self-evaluations following feedback became more similar

to the evaluations provided by followers" (p. 35). While research efforts to measure the effect of upward feedback are many and the results varied, these two themes are generally found throughout. That is, feedback from subordinates generally promotes a change in supervisor leadership behavior for the positive, and self and observer rating gaps tend to close with subsequent feedback assessments. While these themes are common, the research does tend to fall into two categories based on the leader analysis groupings. One family of research studied the effects of upward feedback on supervisors grouped by their initial subordinate ratings and the second by supervisors grouped based on the discrepancy between their self-ratings and those of their subordinates.

Effects based on initial observer ratings. Smither et al. (1995) found that over a six-month period, subordinates' ratings increased moderately, especially among supervisors grouped into the low and moderate categories of a three-category taxonomy consisting of low, moderate, and high. In 1996, Reilly and Smither reported results from a 2.5-year longitudinal study that again indicated supervisors with low initial subordinate ratings improved after receiving feedback. Not only were the initial gains sustained, they were slightly enhanced over a two year period. Additionally, Reilly and Smither reported a trend of declining self-observer ratings over the same period. A five-year longitudinal study of upward feedback effects by Walker and Smither (1999) supported the earlier findings. As a result of annual applications, all supervisors' ratings increased. Those initially receiving low or moderate ratings, however, improved more than supervisors who received highly favorable ratings. In addition, those supervisors who met with their subordinates to discuss their feedback improved more than those that did not, and

amongst the supervisors that conducted discussions, the improvement was greatest in years that discussions were held.

Effects based on self-observer discrepancy. The research focusing on self-observer discrepancy also indicated the same general rating improvement patterns as those reported in research focusing on initial subordinate ratings. However, regrouping the supervisors based on their self-observer discrepancy produced new and interesting findings. The supervisors falling into the over-raters category improved their performance while supervisors in the under-raters category did not improve their performance (Atwater & Roush, 1995). Additionally, Atwater and Roush (1995) found that the discrepancy between self- and subordinate ratings decreased with subsequent feedbacks. Johnson and Ferstl (1999) confirmed Atwater and Roush's findings, but also discovered additional information concerning self-observer ratings. Supervisors improve their performance in direct proportion to the size of their self-observer rating discrepancy and all over-raters, regardless of their initial performance, tend to improve.

Organizational Culture Effects

Not surprisingly, the organizational culture impacts the effectiveness of upward feedback programs. Perceived organizational support for an upward feedback program increases the supervisor's perception of program usefulness (Facteau & Facteau, 1998). In related research, supervisors who perceived more support from their own supervisors reported putting more effort into their leadership self-development and had higher scores on subsequent feedback assessments (Atwater, Waldman, Atwater, & Cartier, 2000; Hazucha et al., 1993; Walker & Smither, 1999).

The relationship between organizational culture and upward feedback is not simply a one-way relationship. Hazucha et al. (1993) and London and Beatty (1993) highlight many of the ways upward feedback may positively affect organizational culture. The upward feedback process can improve the two-way communication between supervisor and subordinate and ultimately, improve the working relationship. Upward feedback may enhance the subordinate's opinion of the organization due to increased involvement and perceived respect of their opinion thus it creates an environment of positive perceived organizational support. Finally, an upward feedback program is not only useful for communicating the organizational-valued leadership behaviors for use in supervisor development, it may also help an organization transform itself by establishing a new cultural template that encourages employees to participate in the transformation process.

The Leadership Practices Inventory

One instrument that has been designed to collect feedback from subordinates is the Leadership Practices Inventory (LPI). The LPI is a multi-rater feedback instrument developed by Kouzes and Posner (1997) to measure a supervisor's frequency of use of successful leadership behaviors. Rather than utilize an existing leadership behavior theoretical framework, Kouzes and Posner chose to develop their own through exploratory research relying heavily on a critical incident methodology. Yukl (1998, chap. 3) describes the critical incident method as representing "a bridge between descriptive research on what managers do and research on effective behavior" (p. 53). Critical incident researchers that are studying leadership begin by collecting leadership

behavioral data from managers by asking them to describe their behaviors during an incident the manager viewed as particularly significant to themselves or their organization. Researchers may obtain the data through the use of interviews, open-ended questionnaires, or both. As the number of cases increases, the researcher uses an iterative process of categorization to develop a theoretical taxonomy of behaviors, and in some cases then seeks the opinions of a panel or group of experts (Yukl, 1998, chap. 3).

Kouzes and Posner began their research in early 1983 by surveying more than 550 middle- and senior-level managers from the private and public sectors. Using a questionnaire with 23 open-ended questions, Kouzes and Posner asked managers to describe their behaviors "when they were at their 'personal best' in leading others" (p. xxi). A group of 750 managers completed a short form of the questionnaire and 42 in-depth interviews were conducted (Kouzes and Posner, 1997, preface). Since beginning their research, Kouzes and Posner state they have collected "thousands" more additional cases and expanded their research "to include community leaders, student leaders, church leaders, government leaders, and hundreds of others in nonmanagerial positions" (p. xxii).

Concurrently, Kouzes and Posner surveyed over 20,000 executives from four continents to ascertain "what values (personal traits or characteristics) do you look for and admire in your superiors" (p. 20). Independent judges were used for the process of content analysis and categorization. The result of Kouzes and Posner's research is a five-dimension leadership behavior taxonomy. The five dimensions, referred to as practices by Kouzes and Posner, serve as the theoretical framework of the LPI and are as follows;

Challenging the Process, Inspiring a Shared Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart.

Challenge

Kouzes and Posner (1997, chap. 1) found that successful leaders seek out challenges to perform and do not fear challenging the status quo. They called this leadership practice Challenging the Process. Not surprisingly, not one of their research subjects claimed to have done their personal best in a situation that called for "keeping things the same" (p. 9). Challenging the Process also incorporates the need for successful leaders to "take on the unknown" and demonstrate a willingness to take risks and experiment. Correspondingly, leaders cannot then be afraid to fail. Similarly, leaders must be innovators and "adopters" of innovation. In short, successful leaders recognize that nothing improves if nothing changes and that difficult circumstances offer the greatest opportunity to lead and to learn leadership.

Inspire

When relating their personal best leadership experiences, a common thread amongst all surveyed and interviewed was that they had a vision of a successfully completed project or, a new and better organization (Kouzes and Posner, 1997, chap. 1). Kouzes and Posner identified this behavior as a leadership practice and labeled it Inspiring a Shared Vision. The vision was not vague or general in nature, but a detailed "blueprint" that would serve as a guide along the path to completion. However, having the vision is not sufficient, the leader must successfully communicate their vision to their subordinates and win their support. Kouzes and Posner maintain that to connect in this

manner leaders must know their subordinates' dreams, values, and aspirations. Additionally, it is important that leaders use vivid language and show passion for their vision if they expect their subordinates to feel the same. Taken together, managers tell people what to do while leaders share a vision of what could be, and then motivate their subordinates to aspire to the same goal.

Enable

While it is essential for leaders to identify a new and successful future and communicate this vision to their subordinates, leaders must also remember that alone, they can accomplish little. Leaders make their vision come true by enabling their subordinates to act in a manner that increases the likelihood of goal accomplishment (Kouzes and Posner, 1997, chap 1). Kouzes and Posner named this leadership practice Enabling Others to Act. Subordinates must have authority, information, and discretion to develop a sense of ownership in a project or process. They must also have trust in their leader and have confidence in the leader's abilities before showing a willingness to take the risks that are often necessary to successfully accomplish challenging tasks, projects, or process transformations. Leaders recognize that it is "we" not "I" that accomplishes great things and then gives away his or her power accordingly.

Model

From their research, Kouzes and Posner (1997, chap. 1) recognized that if leaders hope to see their vision materialize they must lead by example and make the path appear manageable. This behavior was identified by Kouzes and Posner as a fourth leadership practice and called Modeling the Way. Subordinates cannot be expected to commit to

working hard and giving close attention to details if the leader does not display such behavior. Equally important in the view of Kouzes and Posner, is dividing the vision-driven action plan into a set of tasks that appear easier than the plan as a whole and allow for celebration of small wins to build subordinate confidence. In short, vision needs management and successful leaders recognize that they are judged by their actions.

Encourage

Leadership is necessary only because we work with people, not machines. Kouzes and Posner identify a fifth leadership practice, Encouraging the Heart, that is comprised of supportive behaviors. Subordinates can often reach a point where discouragement, stress, or mental fatigue may seriously impact their effectiveness. An encouraging word and a genuine show of caring from a leader is often all it takes reenergize subordinates. Similarly, encouragement and recognition should also be used by a leader to help build subordinate self-esteem. Formal and informal recognition are often the only tools to reward outstanding performance over which many leaders have control and must be recognized as such. Successful leaders recognize that "encouragement is … serious business" and much needed if subordinates are expected to continue displaying outstanding behaviors (Kouzes and Posner, 1997, p. 14).

LPI Empirical Results

Instrument development. Kouzes and Posner (1997, appendix) describe the development of the LPI as being "through a triangulation of qualitative and quantitative research methods and studies" (p. 341). In fact, it appears that the two processes of theoretical framework development and instrument development occurred at least

somewhat simultaneously. Kouzes and Posner, along with experts familiar with their theoretical framework, began developing the LPI by writing statements that were "cast on a five-point Likert scale" representing the frequency of use of the behavioral statement (p. 342). Item development was followed by an item validation process comprised of face-validity analysis with input from respondents and subject-matter experts, and "empirical analysis of various sets of behaviorally based statements" (p. 342). The iterative validation process resulted in six-item scales for each of the five LPI practices.

Scale statistics and reliability. Table 1 shows the LPI scale means, standard deviations and internal reliabilities for a sample that has now reached the size of 43,899 supervisors and subordinates. The scale mean values in Table 1 imply that the majority of LPI respondents rate either themselves or their leader as utilizing the successful behaviors at a frequency of somewhere between "sometimes" and "fairly often". In particular, leaders are judged to use the behaviors comprising Inspiring a Shared Vision only slightly more than "sometimes". Internal consistency, indicated by Chronbach's alpha coefficients, range from .82 to .92 for observer assessments. Internal consistency reliabilities are lower for self-assessments and range as low as .71. Kouzes and Posner (1997, appendix) report that other studies utilizing the LPI have found internal reliabilities reasonably consistent with those reported here. Additionally, Kouzes and Posner report that test-retest reliability for the five practices "has been at the .93 level and above; others have reported test-retest reliabilities in the .80 level and above" (Kouzes and Posner, 1997, p. 344).

Table 1. *Means, Standard Deviations, and Reliability Indexes for the Leadership Practices Inventory*

Leadership Practice	Mean	Standard deviation	Self (N = 6,651)	Observer (N = 37,248)
Challenge	22.38	4.17	0.71	0.82
Inspire	20.48	4.90	0.81	0.88
Enable	23.89	4.37	0.75	0.86
Model	22.18	4.16	0.72	0.82
Encourage	21.89	5.22	0.85	0.92

Note. Modified from *The Leadership Challenge* (p. 343), by J. M. Kouzes and B. Z. Posner, 1997, San Francisco: Jossey-Bass. Copyright 1995 by Jossey-Bass.- mean is the sum of six items each measured on a 5-point Likert type scale.

Factor analysis of LPI items. Table 2 contains the results of a factor analysis of the LPI items using a "principle factoring method with iteration and varimax rotation" (Kouzes and Posner, 1997, p. 344). Kouzes and Posner report that the factor analysis resulted in five factors being extracted with eigenvalues greater than one that accounted for 60.5 percent of the variance. Additionally, the stability of the five factors was tested by conducting factor analysis on different sub-samples. In all cases, the results were consistent with those found in Table 2. Items 22, 27, and 12 from the Inspiring a Shared Vision practice cross-load with Challenging the Process. Similarly, items 14, 19, and 4 from the Modeling the Way practice cross-load with Inspiring a Shared Vision. In total,

Table 2. *Factor Loadings for the Leadership Practices Inventory (N = 43,899)*

Item Number	Challenge	Inspire	Enable	Model	Encourage
26	**.664**	.235	.173	.046	.185
16	**.641**	.285	.188	.223	.153
1	**.577**	.250	.147	.157	.156
11	**.577**	.220	.023	.234	.094
21	**.406**	.276	.311	.276	.199
6	**.388**	.152	.246	.259	.158
7	.239	**.697**	.164	.109	.236
2	.262	**.662**	.162	.128	.183
17	.281	**.594**	.187	.232	.235
22	.375	**.505**	.267	.254	.117
27	.421	**.480**	.220	.037	.288
12	.300	**.439**	.317	.141	.223
8	.032	.074	**.717**	.096	.238
23	.188	.194	**.701**	.246	.231
18	.115	.153	**.689**	.189	.234
13	.118	.124	**.577**	.018	.144
28	.224	.252	**.506**	.215	.239
3	.119	.251	**.469**	.248	.233

(table continues)

Table 2 (continued)

Item Number	Challenge	Inspire	Enable	Model	Encourage
29	.221	.221	.220	**.588**	.195
9	.156	.076	.327	**.527**	.190
14	.220	.309	.186	**.468**	.200
24	.220	.128	.365	**.408**	.163
19	.238	.342	.110	**.378**	.138
4	.230	.311	.251	**.369**	.173
25	.183	.209	.153	.109	**.755**
5	.121	.225	.140	.119	**.726**
15	.119	.141	.370	.128	**.711**
20	.146	.181	.391	.168	**.708**
10	.164	.109	.327	.198	**.695**
30	.233	.231	.203	.201	**.577**

Note: Modified from *The Leadership Challenge* (p. 343), by J. M. Kouzes and B. Z. Posner, 1997, San Francisco: Jossey-Bass. Copyright 1995 by Jossey-Bass.

13 item cross-loadings of .3 or higher may be found in Table 2. However, in no case does a cross loading exceed the value of the item factor loading. While it appears that Kouzes and Posner's five successful leadership practices do exist as distinct and identifiable constructs, the constructs are inter-correlated.

An attempt to replicate Kouzes and Posner's (1997) LPI results will be a part of this research effort. A successful replication will verify the external validity of the LPI

by generalizing Kouzes and Posner's findings to our target population, in the particular setting, at the time of our research (Dooley, 2001). A validated LPI will serve as a reference point for the upward feedback instrument developed in this study as the UFI leadership commitments are sub-dimensions of Kouzes and Posner's practices. Figure 1 depicts the relationship between LPI practice and UFI commitment. Ensuring the validity of the LPI in the target population is important to the ultimate validity assessment of the UFI.

Hypothesis 1. Challenging the Process, Inspiring a Shared Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart are distinct leadership behavior constructs.

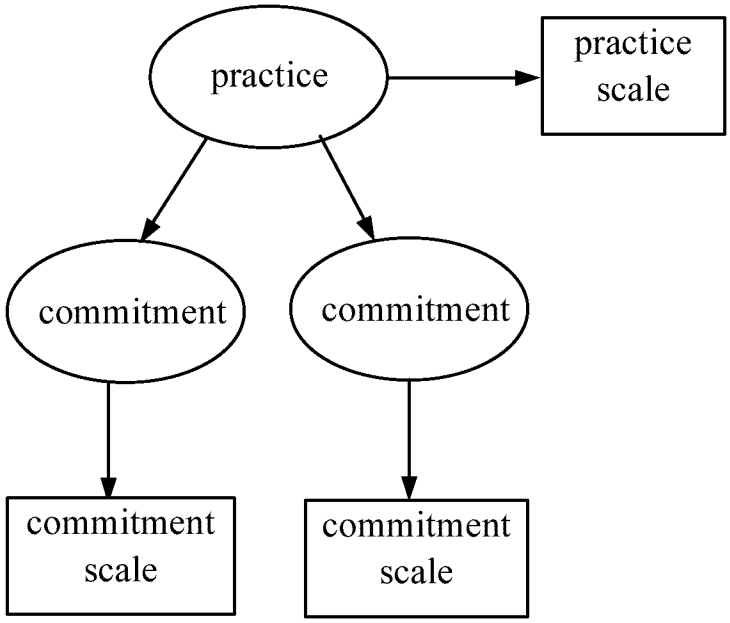

Figure 1. Theoretical Relationship Between LPI Practices and UFI Commitments.

The Upward Feedback Instrument

In Kouzes and Posner's *The Leadership Challenge* (1997) the five successful leadership behavior constructs are presented with an underlying structure of ten leadership commitments (two commitments for every practice). Kouzes and Posner's theoretical framework suggested that the commitments might be modeled as measurable variables. Given that the practical value of upward feedback instruments is to give supervisors specific and detailed behavioral feedback, it appeared that developing an instrument utilizing Kouzes and Posner's theoretical framework at the commitment level might increase the utility of the feedback for supervisor development. Scale items may be written to assess more specific behaviors and thereby decrease the need for the supervisor and subordinates to interpret item content. Also, increased specificity of the feedback decreases the supervisor's need to interpret what behaviors are actually being critiqued. Additionally, measuring successful leader behaviors at the commitment level offers the opportunity to test the LPI theoretical framework against competing leadership theories using structural equation modeling.

Kouzes and Posner's (1997) ten commitments and corresponding leadership practices are: seek out challenges to innovate and improve, and try ideas, take risks and learn from mistakes (Challenge); create a vision, and attract others to a common purpose (Inspire); encourage trust and cooperation, and share information and power (Enable); set the example, and motivate and build commitment through small victories (Model); and recognize and reward individual performance, and celebrate team accomplishments (Encourage).

Seek Out Challenges to Innovate and Improve

Kouzes and Posner (1997) describe their first Challenge commitment, Search for opportunities, as "confronting and changing the status quo" (p.35). Table 3 depicts the items developed to measure the corresponding UFI commitment, Seek out challenges to innovate and improve. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Search for opportunities commitment. Leaders should not wait for opportunities to improve their products or services to fall into their lap, but rather seek out challenges and encourage their subordinates to seek challenges as well, both inside and outside their personal work group. Finally, leaders need to devote sufficient time to consider new ideas that may result in an improved product or service.

Table 3. *Observer and Self Items For UFI Commitment 1*

Challenge	
Commitment 1. Seek out challenges to innovate and improve (C1)	
Encourages us to look outside our work group to find better ways of doing things.	I encourage my people to look outside our work group to find better ways of doing things.
Finds opportunities to expand and improve our products and services.	I find opportunities to expand and improve our products and services.
Challenges us to find ways to improve our performance.	I challenge my people to find ways to improve our performance.
Challenges processes—asks, "why do we do it this way?"	I challenge our processes—I ask, "why do we do it this way?"
Devotes time to consider improvement ideas.	I devote time to consider improvement ideas.

Try Ideas, Take Risks, and Learn from Mistakes

Kouzes and Posner (1997) describe their second Challenge commitment, Experiment and take risks, as "learning from mistakes and successes" (p. 62). Table 4 depicts the items developed to measure the corresponding UFI commitment, Try ideas, take risks, and learn from mistakes. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Experiment and take risks commitment. Leaders should promote new ideas that might increase workgroup effectiveness, but shouldn't forego calculating the risk involved based on an assessment of the work group's capabilities. Successful leaders also volunteer their work group for tough assignments that are important to the organization. They recognize that even if the work group is not completely successful accomplishing the task or project, the setback may be turned into a valuable learning experience.

Table 4. *Observer and Self Items For UFI Commitment 2*

Challenge	
Commitment 2. Try ideas, take risks and learn from mistakes (C2)	
Promotes new ways of doing things that might make us more effective.	I promote new ways of doing things that might make us more effective.
Takes calculated risks based on our team's capabilities.	I take calculated risks based on my team's capabilities.
Takes on tough assignments that are important to the organization.	I take on tough assignments that are important to the organization.
Studies every team success and failure for "lessons learned".	I study every team success and failure for "lessons learned".
Finds ways to turn setbacks into learning opportunities.	I find ways to turn setbacks into learning opportunities.

Create a Vision

Kouzes and Posner (1997) describe their first Inspire commitment, Envision the future, as "imagining ideal scenarios" (p. 91). Table 5 depicts the items developed to measure the corresponding UFI commitment, Create a vision. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Envision the future commitment. To create a vision of future unit excellence that has meaning to subordinates, a leader must portray his or her unit as having a unique contribution critical to the success of the parent organization. Similarly, the unit must feel that their efforts are valuable in terms of meeting organizational goals. Communicating why, and how much, the unit's customers value the quality of the unit's products or services underscores both the uniqueness and value of the unit's efforts. Lastly, a clear explanation of the leader's vision to his or her subordinates is critical. Subordinates must clearly understand the leader's vision before it can become their own.

Attract Others to a Common Purpose

Kouzes and Posner (1997) describe their second Inspire commitment, Enlist others, as "attracting people to common purposes" (p. 121). Table 6 depicts the items developed to measure the corresponding UFI commitment, Attract others to a common purpose. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Enlist others commitment. A leader should attempt to set goals that appeal to the subordinates collective values and interests and then show his or her subordinates how the goals are consistent with their values and interests. Similarly, a leader attracts others to a common purpose by promoting common causes that can be

Table 5. *Observer and Self Items For UFI Commitment 3*

Inspire	
Commitment 3. Create a vision (I1)	
Portrays our unit as having a real impact on the organization's future.	I portray our unit as having a real impact on the organization's future.
Clearly explains his or her vision of the team's future.	I clearly explain my vision of the team's future.
Points out our team's unique contribution to the overall mission.	I point out our team's unique contribution to the overall mission.
Conveys the value of our efforts to meet the organization's goals.	I convey the value of our efforts to meet the organization's goals.
Communicates why our customers value the quality of our products and services.	I communicate why our customers value the quality of our products and services.

supported by all members of the work group. Finally, if a leader is successful in the aforementioned acts, the unit goals should appeal to his or her subordinates' intrinsic desire to contribute to the success of the organization.

Encourage Trust and Cooperation

Kouzes and Posner (1997) describe their first Enable commitment, Foster collaboration, as "promoting cooperative goals and mutual trust" (p. 151). Table 7 depicts the items developed to measure the corresponding UFI commitment, Encourage trust and cooperation. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Foster collaboration commitment. To build trusting relationships with his or her subordinates, a successful leader shows respect for a subordinate's ideas and applies them whenever possible. Additionally, showing trust in

Table 6. *Observer and Self Items For UFI Commitment 4*

Inspire	
Commitment 4. Attract others to a common purpose (I2)	
Sets unit goals that appeal to our collective values and interests.	I set unit goals that appeal to my unit's collective values and interests.
Helps us accept unit goals by showing how they are consistent with our own beliefs and values.	I help my people to accept unit goals by showing how they are consistent with their own beliefs and values.
Promotes common causes that can be supported by all members of the work group.	I promote common causes that can be supported by all members of the work group.
Explains how personal goals can be met by attaining the group's goals.	I explain how personal goals can be met by attaining the group's goals.
Appeals to our desire to contribute to the success of the organization.	I appeal to each member's desire to contribute to the success of the organization.

subordinates' judgment increases the trust in the relationship. Another trust building behavior is acting in predictable ways. Consistent behavior and situational responses breed confidence in a leader's intentions. Cooperation among subordinates is encouraged by breaking down the barriers between groups and encouraging interactions across such groups. Lastly, a leader should encourage cooperation between his or her subordinates and others outside of the unit.

Share Information and Power

Kouzes and Posner (1997) describe their second Enable commitment, Strengthen others, as "sharing power and information" (p. 180). Table 8 depicts the items developed to measure the corresponding UFI commitment, Share information and power. These five items represent the operational definition gleaned from Kouzes and Posner's

Table 7. *Observer and Self Items For UFI Commitment 5*

Enable	
Commitment 5. Encourage trust and cooperation (E1)	
Encourages us to work with people outside of our unit.	I encourage my people to work with people outside of our unit.
Breaks down barriers between people by encouraging interactions across groups.	I break down barriers between people by encouraging interactions across groups.
Acts in predictable ways so that we have confidence in his or her intentions.	I act in predictable ways so that my people have confidence in my intentions.
Respects our ideas and applies them whenever possible.	I respect each group member's ideas and apply them whenever possible.
Shows he or she is willing to trust our judgment.	I show my unit that I am willing to trust their judgment.

discussion of their Strengthen others commitment. A leader shares information and power when he or she ensures that subordinates have the information necessary to make good judgments on their own and includes subordinates in decisions whose importance requires the leader's involvement. Doing so ensures that subordinates get the opportunity to develop the skills needed for good decisions. Finally, sharing power means granting subordinates the authority commensurate to the position assigned and thereby, the freedom to make decisions on the most appropriate courses of action.

Table 8. *Observer and Self Items For UFI Commitment 6*

Enable	
Commitment 6. Share information and power (E2)	
Includes us when making important decisions.	I include my people when making important decisions.
Makes sure that we have the information needed to make good judgments on our own.	I make sure that my people have the information needed to make good judgments on their own.
Makes sure we get the chance to develop the skills needed to make good decisions.	I make sure work group members get the chance to develop the skills they need to make good decisions.
Grants us the appropriate authority to do our work.	I grant my people the appropriate authority to do their work.
Allows us to decide the best way to get our jobs done.	I allow my people to decide the best way to get their jobs done.

Set the Example

Kouzes and Posner (1997) describe their first Model commitment, Set the example, as "doing what you say you will do" (p. 209). Table 9 depicts the items developed to measure the corresponding UFI commitment also named Set the example. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Set the example commitment. A successful leader sets priorities that are consistent with the unit's values and then acts in a manner that is consistent with these priorities. He or she also takes time to teach and emphasize the unit's values and then ensures all members of his or her unit are committed to enforcing the stated values. Finally, successful leaders operate in ways that reinforce the unit's fundamental beliefs.

Table 9. *Observer and Self Items For UFI Commitment 7*

Model	
Commitment 7. Set the example (M1)	
Makes sure that all members are committed to enforcing the stated values of the unit.	I make sure that all members are committed to enforcing the stated values of the unit.
Sets priorities that are consistent with our unit's values.	I set priorities that are consistent with my unit's values.
Operates in ways that reinforce the unit's fundamental beliefs.	I operate in ways that reinforce the unit's fundamental beliefs.
Takes time to teach and emphasize the unit's values.	I take time to teach and emphasize the unit's values.
Acts in ways that let everyone know what things are important to our unit.	I act in ways that let everyone know what things are important to our unit.

Motivate and Build Commitment Through Small Victories

Kouzes and Posner (1997) describe their second Model commitment, Achieve small wins, as "building commitment to action" (p. 242). Table 10 depicts the items developed to measure the corresponding UFI commitment, Motivate and build commitment through small victories. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Achieve small wins commitment. Visions of a successful future may appear daunting to subordinates when taken as a whole. Therefore an important component of Model is dividing large, complex tasks into smaller pieces that are more easily understood, accepted, and accomplished. Equally important is defining the less imposing tasks so they provide a natural, direct and automatic source of feedback. Providing clear guidance at the start of each new project

along with setting specific and challenging goals that can be met in a relatively short time enhances subordinates' feelings of efficacy along the path to vision realization. Lastly, successful leaders keep their subordinates focused on the long-term even while reminding them to take things a step at a time.

Table 10. *Observer and Self Items for UFI Commitment 8*

Model	
Commitment 8. Motivate and build commitment through small victories (M2)	
Divides large tasks into smaller pieces that are more easily understood and accepted.	I divide large tasks into smaller pieces that are more easily understood and accepted.
Defines tasks so they provide a natural, direct and automatic source of feedback.	I define tasks so they provide a natural, direct and automatic source of feedback.
Sets specific and challenging goals that can be met in a relatively short time.	I set specific and challenging goals that can be met in a relatively short time.
Provides clear guidance at the start of each new project.	I provide clear guidance at the start of each new project.
Keeps us focused on the long-term goal while reminding us to take things a step at a time.	I keep my people focused on long-term goals while reminding them to take things a step at a time.

Recognize and Reward Individual Performance

Kouzes and Posner (1997) describe their first Encourage commitment, Recognize contributions, as "linking rewards with performance" (p. 269). Table 11 depicts the items developed to measure the corresponding UFI commitment, Recognize and reward individual performance. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Recognize contributions commitment.

Successful leaders realize that their subordinates are human beings and as such, need to be thanked for a job well done and publicly rewarded when appropriate. It is important that leaders realize that only by interacting with their subordinates outside of their office will they fully witness the work and actions deserving of recognition. Also through these interactions, leaders should be capable of tailoring his or her rewards to those things each individual subordinate value. Acting in this manner, leaders show a genuine concern for their subordinates well being and a true appreciation of their work performance.

Table 11. *Observer and Self Items For UFI Commitment 9*

Encourage	
Commitment 9. Recognize and reward individual performance (H1)	
Publicly rewards individual members when they have done a good job.	I publicly reward individual members when they have done a good job.
Tailors rewards to things we each individually value.	I tailor rewards to things each individual values.
Gets out from behind the desk and catches people doing things right.	I get out from behind the desk and catch people doing things right.
Says "thank you" to show his/her appreciation for a job well done.	I say "thank you" to show my appreciation for a job well done.
Lets us know that he or she cares about our work performance.	I let my people know that I care about their work performance.

Celebrate Team Accomplishments

Kouzes and Posner (1997) describe their second Encourage commitment, Celebrate accomplishments, as "valuing the victories" (p. 292). Table 12 depicts the

items developed to measure the corresponding UFI commitment, Celebrate team accomplishments. These five items represent the operational definition gleaned from Kouzes and Posner's discussion of their Celebrate accomplishments commitment. Leaders should cheer team actions that are consistent with achieving unit goals as well as take time to publicly recognize the unit's accomplishments. Celebrating milestones is an effective way to acknowledge progress toward a group goal. Finally, successful leaders ensure that the organization's senior leaders learn of the group's successes.

Table 12. *Observer and Self Items for UFI Commitment 10*

Encourage	
Commitment 10. Celebrate team accomplishments (H2)	
Cheers actions that are consistent with achieving our unit's goals.	I cheer actions that are consistent with achieving our unit's goals.
Celebrates events that are important to the unit's members.	I celebrate events that are important to the unit's members.
Takes time out to publicly recognize our unit's accomplishments.	I take time out to publicly recognize our unit's accomplishments.
Celebrates milestones as a way to acknowledge progress toward group goals.	I celebrate milestones as a way to acknowledge progress toward group goals.
Makes sure senior leadership knows about our unit's successes.	I make sure senior leadership knows about our unit's successes.

A Five-Dimension Leadership Model

The theoretical five-dimensional leadership model suggested by Kouzes and Posner's (1997) is depicted in Figure 2. The commitments Seek out challenges to innovate and improve and Try ideas, take risks and learn from mistakes will measure the

construct Challenge. Create a vision and Attract others to a common purpose will measure Inspire. The Enable construct will be operationally defined by Encourage trust and cooperation and Share information and power. Model will consist of Set the example and Motivate and build commitment through small victories. Finally, Recognize and reward individual performance and Celebrate team accomplishments will measure Encourage.

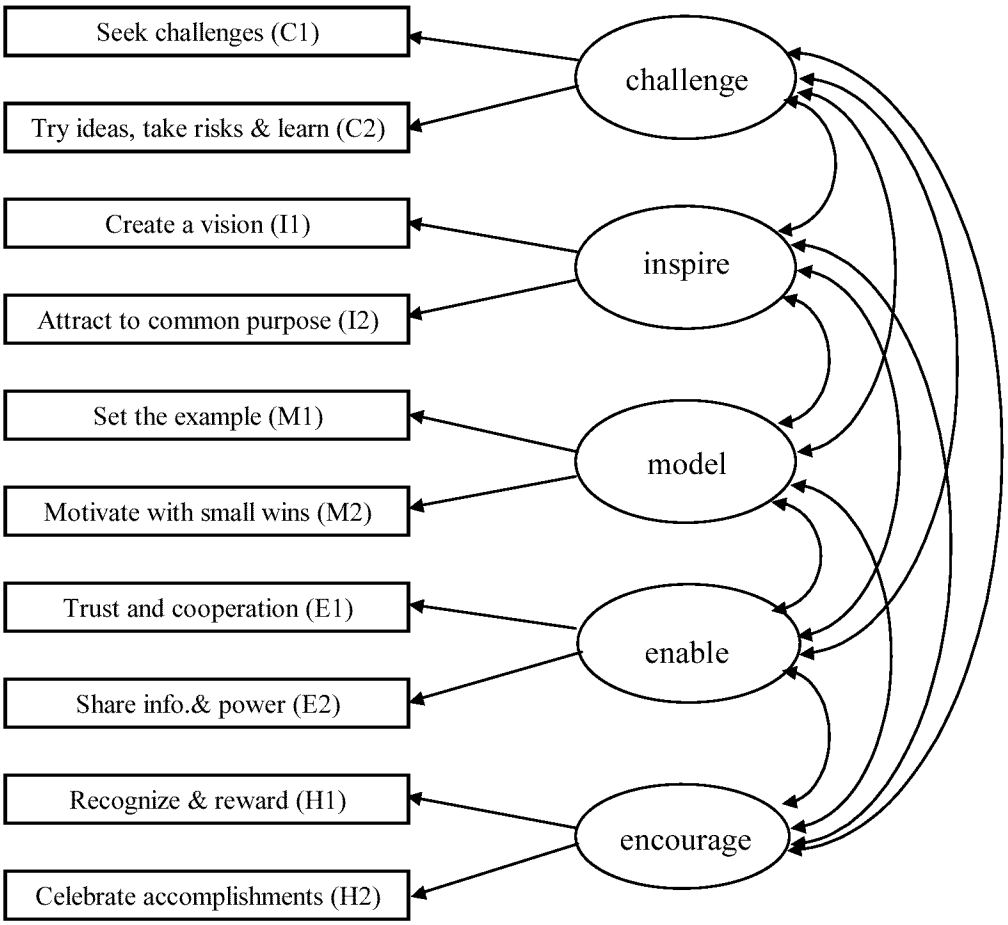

Figure 2. A Five-Dimension Leadership Behavior Taxonomy.

Competing Leadership Behavior Theories

Yukl (1998) observes that a major problem with leadership behavior research is the existence of "a bewildering variety of behavior concepts pertaining to managers and leaders" (p. 57). Similarly, Yukl points out that behavior categories are "abstractions rather than tangible attributes of the real world" and are therefore subject to individual researcher interpretation (p. 57). Another source of diversity among leadership behavior models results from the fact models are created utilizing constructs "formulated at different levels of abstraction or generality" (Yukl, p. 58).

As previously mentioned, one of the significant advantages of designing the UFI to measure leader behavior at the commitment level rather than the practice level is that it allows testing of the UFI theoretical framework against competing theories. The rule of parsimony states that when two competing theories are equally successful explaining the data of interest, the theory with the simplest underlying framework is supported (Dooley, 2001). Structural equation modeling will be discussed in more detail in chapter 3, but a simple explanation of its utility is that it allows testing of a model versus more parsimonious alternative models. When models with more constructs are nested within more simpler models structural equation modeling analysis reveals whether or not the additional constructs explain more variance at a statistically significant level. A statistically significant improvement suggests that the additional explained variance provided by any added constructs and paths is worth the corresponding loss of parsimony. Following is a brief presentation of the leadership behavior models that will be utilized as competing theoretical frameworks and the proposed categorization of the 10 leadership commitments into said model's existing taxonomy.

A Two-Dimension Leadership Model

A landmark research effort on effective leadership behavior began at Ohio State University in the early 1950's (Yukl, 1998), chap. 3). Factor analysis of questionnaire responses revealed that respondents viewed leadership behavior in two broad categories: consideration and initiating structure. "Consideration is the degree to which a leader acts in a friendly and supportive manner, shows concern for subordinates, and looks out for their welfare" (Yukl, 1998, p. 47). "Initiating structure is the degree to which a leader defines and structures his or her own role and the roles of subordinates toward attainment of the group's formal goals" (Yukl, 1998, p. 47). These two leadership constructs are now commonly referred to as task and relations behavior and will be referred as such for the remainder of this thesis. While not a perfect fit, the UFI leadership commitments may be reasonably assigned to one of the two categories of task or relations behavior based on operational definition overlap.

Task Behavior Related UFI Constructs. The operational definitions of the Challenge (C1 & C2), Inspire (I1 & I2) and Model (M1 & M2) commitments incorporate many behaviors that are attributable to the task behavior category. Yukl (1998, chap. 3) provides as an example of task behaviors, planning and scheduling work and, offering new approaches to problems. These behaviors are incorporated within the Challenge commitment behaviors that suggest when leaders plan and schedule work they continuously evaluate the processes involved with the intent of possibly improving the process. Assigning subordinates to tasks is another task behavior described by Yukl. Challenge commitment content suggests that leaders not be afraid of taking on tough

assignments for the workgroup that are important to the organization. Finally, Yukl describes as a task behavior, guiding subordinates to set high performance goals. The Challenge commitments include the related leader behavior of challenging subordinates to find ways to improve their performance.

The Inspire commitments also incorporate planning and scheduling work, but additionally incorporate another Yukl (1998, chap. 3) designated task behavior, defining and structuring roles to attain group goals. The Inspire commitments advocate that leaders also concentrate their planning efforts at a high, strategic level. It then suggests that leaders share this strategic vision with his or her subordinates and help them clearly understand their role in making the leaders vision come true. Yukl mentions another important task behavior that has not been mentioned previously, setting standards for performance. This behavior and the guide subordinates to set high performance goals behavior are well represented in the Inspire operational definition by three suggested behaviors that relate to goal setting.

The Model commitment content reflects the task behavior of setting and enforcing standards of performance. Model behaviors include ensuring all workgroup members are committed to enforcing the stated values of the unit and setting priorities that are consistent with unit values. The task behavior of planning and scheduling work is also reflected in the Model operational definition. Dividing large tasks into smaller more manageable tasks is a Model behavior. Additionally, defining tasks to provide natural and automatic feedback and, providing clear guidance at the start of new projects are Model behaviors that incorporate aspects of planning and scheduling work.

Relations Behavior Related UFI Constructs. The operational definitions of the Enable (E1 & E2) and Encourage (H1 & H2) commitments incorporate many behaviors that are attributable to the relations behavior category. Yukl (1998, chap. 3) describes as relations behaviors, showing appreciation for subordinate ideas and, showing trust and confidence in subordinates. The Enable commitments incorporate these behaviors by suggesting that leaders respect and apply subordinate ideas whenever possible and also those leaders show they are willing to trust their subordinates' judgment. Keeping subordinates informed and consulting them on important matters are more relations behaviors described by Yukl. These behaviors are incorporated in the Enable commitment behaviors; ensuring subordinates have the information needed to make good judgments and, including subordinates when making important decisions. Yukl also lists helping to develop subordinates and further their careers as a relation behavior. Ensuring subordinates get the chance to develop the skills needed to make good decisions is a corresponding Enable behavior.

The Encourage commitments also incorporate several relations behaviors. Providing recognition for subordinates' contributions and accomplishments is a behavior defined by Yukl (1998, chap. 3) as relations. Corresponding behaviors found as part of the Encourage commitment content are; publicly rewarding individuals when they have done a good job, publicly recognizing the workgroup's accomplishments, and ensuring senior leadership knows about the workgroup's successes. Yukl describes acting friendly and considerate as a relations behavior. Saying "thank you" to show appreciation and letting subordinates know that he or she cares about their work performance are

Encourage commitment leader behaviors that closely correspond. Figure 3 depicts the two-dimension leadership model as it will be tested.

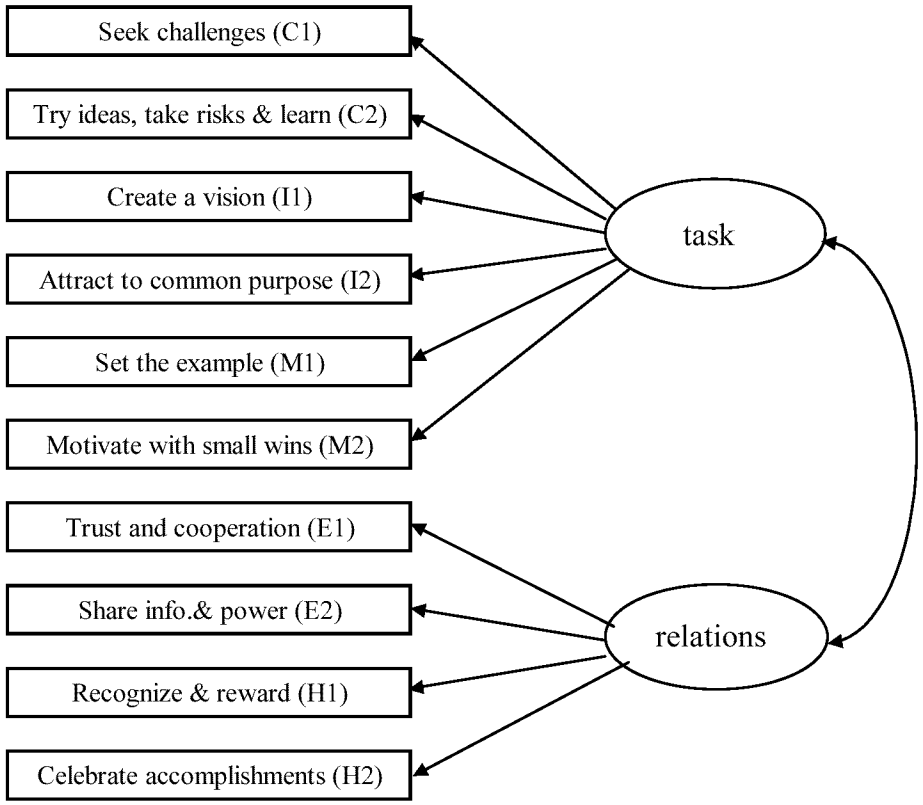

Figure 3. A Two-Dimension Leadership Behavior Taxonomy.

A Three-Dimension Leadership Model

Approximately the same time the Ohio State University research effort was developing the two-dimensional model of effective leadership behavior the University of Michigan was developing a three dimensional model (Yukl, 1998, chap. 3). The Michigan research found that task and relations were two categories of effective leader behavior, but they also proposed their data

supported a third category they named participative leadership. Participative leadership proposed that effective leaders made "extensive use of group supervision instead of supervising each subordinate separately" (Yukl, p. 52). Additionally, a leader exhibiting participative leadership behavior assumed more of a role of coach and mentor. Since the Michigan study, participative leadership has grown to incorporate empowering subordinates through various degrees of delegation.

A current definition of the participative leadership construct provided by Yukl (1998, chap. 6) describes the leader behaviors involved as that of incorporating subordinates at four different levels of participative decision-making. In the first level, autocratic decision-making, the leader does not involve the subordinates in the process. When a leader uses the second level of participation, consulting, the leader consults his or her subordinates to obtain their ideas or suggestions and then makes the decision alone. An example of consulting behavior incorporated within the Enable commitments is, respecting subordinates' ideas and applying them whenever possible. The third level is joint decision-making and in this case the leader actually involves the subordinates in making the decision. Including subordinates when making important decisions is an example of corresponding Enable commitment leader behaviors. The final participative decision-making level is delegation. When the leader delegates the process to subordinates the leader is absent from the decision-making process altogether. Two Enable commitment behaviors that relate directly to delegation

are; granting subordinates the appropriate authority to do their work, and allowing subordinates to decide the best way to accomplish their work.

While the Enable operational definition contains leader behaviors outside the participative leadership construct definition, it has sufficient overlap to reasonably assume the role of the participative leadership construct in the three-dimension model. This categorization leaves the Encourage construct to represent the remaining relations construct. The Challenge, Inspire, and Model commitments will once again be categorized as measuring task behavior as designated in the two-dimension model. See Figure 4 for an illustration of the three-dimension leadership model as it will be tested.

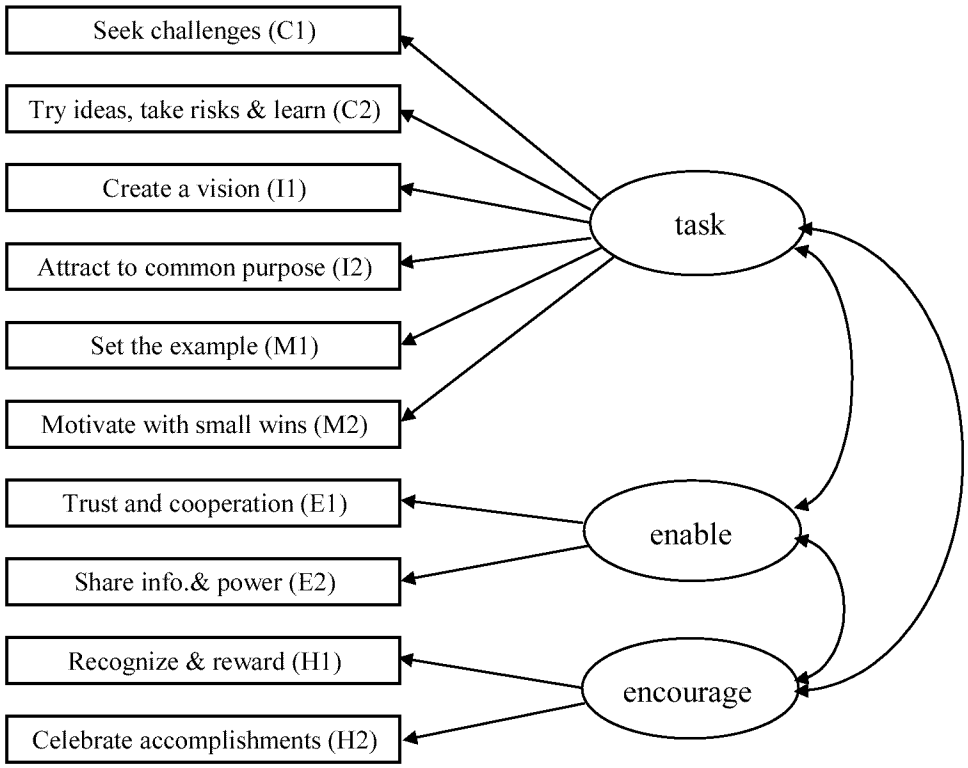

Figure 4. A Three-Dimension Leadership Behavior Taxonomy.

A Four-Dimension Leadership Model

Yukl (1998, chap. 3) describes recent research that proposes a three-dimensional model that offered a theoretical rationale for a fourth UFI related construct. The model is comprised of task-oriented behavior, relations-oriented behavior, and change-oriented behavior. Analysis of the operational content of the change-oriented behavior construct suggested sufficient operational definition overlap to justify splitting the UFI Challenge construct from the original task behavior construct.

Yukl provides the following examples of change-oriented leader behaviors, scanning and interpreting external events, proposing innovative strategies, and encouraging and facilitating experimentation. Challenge construct behaviors that correspond to scanning and interpreting external events are, encouraging subordinates to look outside the workgroup to find better ways of doing business and, finding opportunities to expand and improve the groups products and services. The Challenge construct behavior of promoting new ways of doing business that might make the unit more effective corresponds very closely to the proposing innovative strategies behavior. The clearest example of content overlap between the change-oriented construct and the Challenge construct relates to Yukl's example, encouraging and facilitating experimentation. The very essence of the Challenge construct is the leadership behavior of challenging the status quo, either directly or through subordinates encouraged to do the same.

The four-dimension model suggested by separating the Challenge construct from the task behavior construct is one where Challenge represents a change-oriented construct and Inspire and Model remain categorized as a task construct. The Enable and

Encourage constructs remain as previously identified. See Figure 5 for an illustration of the four-dimension leadership model as it will be tested.

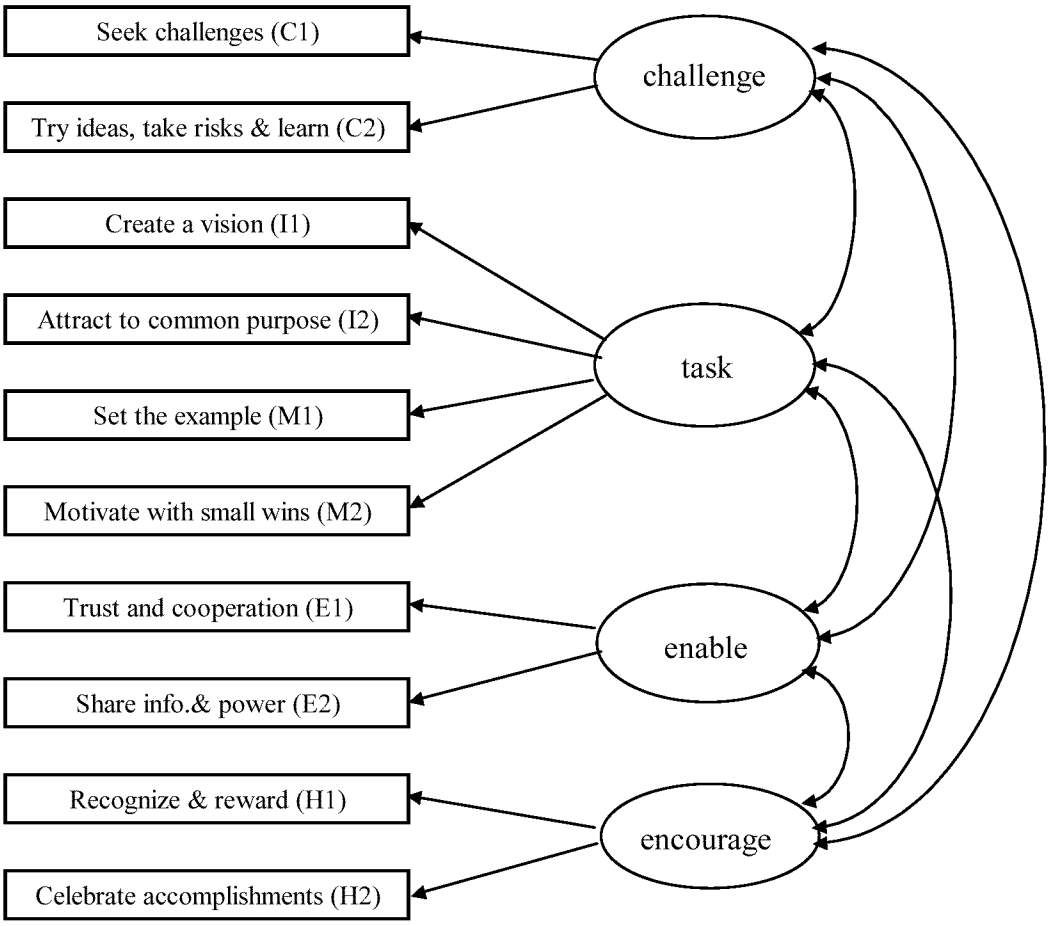

Figure 5. A Four-Dimension Leadership Behavior Taxonomy.

This section began with a brief discussion on the rationale for conducting a nested model structural equation modeling analysis utilizing leadership theories of various degrees of parsimony. Proposed theories that suggest a more complex structure than existing theories are supported only if they provide a better fit to the data. The five factor

leadership model proposed by K&P will find support only if it provides a better explanation than the more parsimonious two, three, and four factor models.

Hypothesis 2. Kouzes and Posner's (1997) five dimensions of leadership provide a better explanation of successful leadership behavior than alternative theoretical frameworks with fewer dimensions.

The Have Fun Leadership Practice

As previously mentioned, in addition to adopting Kouzes and Posner's (1997) five leadership practices, ASC identified a sixth leadership practice, Have Fun. Creating fun in the workplace is a subject drawing increasing attention in the commercial sector and has been a popular topic in industry periodicals for several years. Human Resource trade magazines now contain numerous articles on building a fun workplace. Similarly, leadership magazines, books and websites are riddled with references to Herb Kelleher, and the culture of fun he has developed at Southwest Airlines as founder and CEO. Kelleher states, "Fun is taken very seriously at Southwest Airlines, and the company's recruiting and hiring practices are built on the idea that humor can help people thrive during change, remain creative under pressure, work more effectively, play more enthusiastically, and stay healthier in the process" (Freiberg & Freiberg, 1996, p. 64). Of significance, Kelleher does not promote fun in the workplace just for fun's sake. the leadership of Southwest believes that fun "counterbalances the stress of hard work and competition" (Freiberg & Freiberg, 1996, p. 66). This thesis' sponsoring organizations share these same beliefs about the importance of fun in the workplace.

To investigate the content of the Have Fun dimension, the researchers surveyed a sample of ASC and AFSAC employees using critical incident questionnaires. Employees were asked to describe their perceptions of what Have Fun might encompass and then describe an experience where a leader exhibited behavior that best represented their concept of Have Fun. Content analysis of the responses by both researchers and the ASC Human Resources leadership team led to an additional commitment that addressed actions a leader could take that allowed humor to reduce stress and boredom, and a second commitment concerning actions that promote fun activities to relax and unwind.

Allow Humor to Reduce Stress and Boredom

The content analysis from the critical incident questionnaires suggested that one of the more important Have Fun behaviors is a leader who shows a willingness to laugh at himself or herself. The sample respondents indicated that leaders should encourage non-offensive humor and show a willingness to laugh and have fun with others. A leader who exhibits these behaviors sets the tone for a friendly and fun workplace that reduces stress and boredom. Finally, respondents suggested that leaders should allow the use of humor as a way to diffuse particularly tense moments. Importantly, the respondents repeatedly stressed that the leader did not have to "be funny", only allow those who are the freedom to use their ability to make others laugh. Table 13 depicts the items developed to measure the Allow humor to reduce stress and boredom commitment.

Table 13. *Observer and Self Items For UFI Commitment 11*

Have Fun	
Commitment 11. Allow humor to reduce stress and boredom (F1)	
Not afraid to laugh at himself/herself.	I'm not afraid to laugh at myself.
Willing to laugh and have fun with others.	I am willing to laugh and have fun with others.
Encourages non-offensive humor as a way to make the workplace more fun.	I encourage non-offensive humor as a way to make the workplace more fun.
Sets the tone for a friendly, supportive and fun workplace.	I set the tone for a friendly, supportive and fun workplace.
Allows humor to break through during tense moments.	I allow humor to break through during tense moments.

Promote Fun Activities to Relax and Unwind

While the first Have Fun commitment focused on using humor to make the workplace more fun, another method for lightening the workplace atmosphere is partaking in fun activities. Leaders should take advantage of any lull in the schedule and encourage simple, quick and fun activities. Just as importantly, even when the schedule does not appear to have any lulls, leaders need to be willing to take time out from a busy schedule and do something fun as a unit. A last significant behavior leaders can utilize to improve the workplace atmosphere is to also take part in activities that are organized by other members of the unit. Table 14 depicts the items developed to measure the Allow humor to reduce stress and boredom commitment.

Table 14. *Observer and Self Items For UFI Commitment 12*

Have Fun	
Commitment 12. Promote fun activities to relax and unwind	
Takes advantage of lulls in the schedule for relaxing and fun activities.	I take advantage of lulls in the schedule for relaxing and fun activities.
Finds way to offset hardships caused by work with some fun outcome or activity.	I find ways to offset hardships caused by work with some fun outcome or activity.
Encourages simple, quick and fun activities that lift spirits at work.	I encourage simple, quick and fun activities that lift spirits at work.
Takes part in social activities organized by unit members.	I take part in social activities organized by unit members.
Willing to take a time-out during busy periods to do something fun as a unit.	I am willing to take a time-out during busy periods to do something fun as a unit.

A Six-Dimension Leadership Model

A comparison of content across commitments suggests that Have Fun may exist as a unique dimension of leadership behavior. A reasonable alternative theoretical conclusion is that the Have Fun behaviors defined by the Allow humor to reduce stress and boredom and the Promote fun activities to relax and unwind commitments are simply a sub-dimension of the Encourage the Heart leadership construct. Given Kouzes and Posner's (1997) five-dimension model proves to be the best explanation of leadership behavior, the uniqueness of Have Fun will be tested using a nested model structural equation modeling analysis. See Figures 6 and 7 for the five- and six-dimension model taxonomies respectively.

Hypothesis 3. Have Fun exists as a unique dimension of leadership behavior and is operationally defined by the commitments Allow humor to reduce stress and boredom and Promote fun activities to relax and unwind.

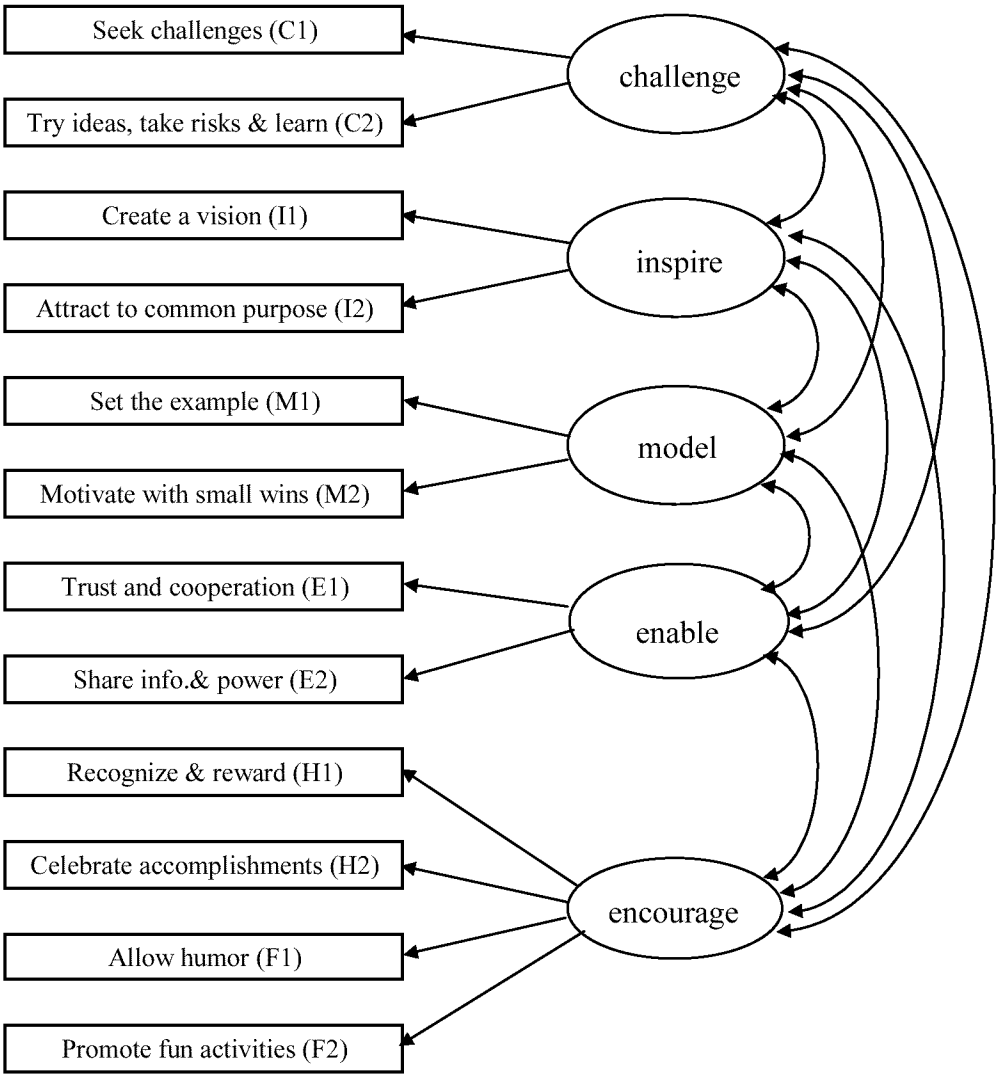

Figure 6. Five-Dimension Leadership Behavior Taxonomy with Have Fun Commitments.

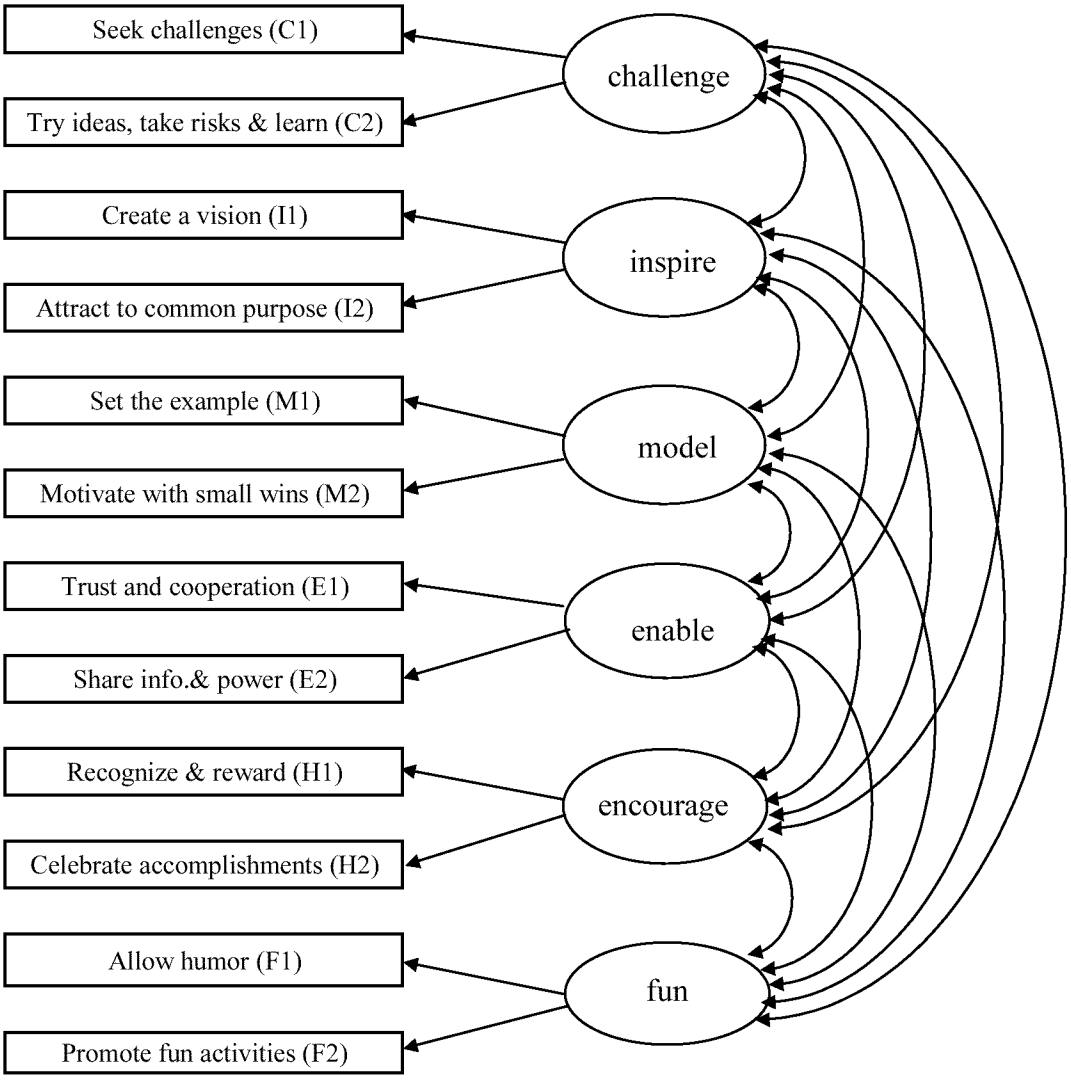

Figure 7. Six-Dimension Leadership Behavior Taxonomy with Have Fun Dimension.

Chapter Summary

Despite their high cost, multi-rater feedback assessment programs have become extremely popular in the corporate sector. They unlink feedback from appraisal programs and as a result, provide supervisors with more accurate feedback that enhances their ability to develop their leadership ability. Multi-rater feedback programs also

provide an excellent platform for the organization to present the leadership behaviors it deems most important.

Kouzes and Posner (1997) developed a five-dimension leadership theory adopted by this thesis' sponsoring organization as a partial framework for the Upward Feedback Instrument. Kouzes and Posner's five dimensions were presented along with the corresponding UFI commitments. A successful replication of Kouzes and Posner's research establishes external validity for the Leadership Practices Inventory and provides a benchmark against which the UFI results may be measured.

Adaptation of the UFI commitments to more parsimonious leadership models creates an opportunity to evaluate the UFI theoretical framework. A nested model comparison utilizing the structural equation modeling technique will determine if the UFI theoretical framework provides a sufficient improvement in fit to offset the loss in parsimony.

Lastly, the Have Fun leadership behavior dimension was presented. A continuation of the nested model analysis will determine if the Have Fun dimension explains enough additional variance to warrant acceptance as a new leadership behavior construct.

III. Methodology

Upward Feedback Instrument Development

Development of the instrument began with a content analysis of the leadership practices commitments detailed in Kouzes and Posner's (1997), *The Leadership Challenge.* From Kouzes and Posner's (1997) discussion, a five-item scale was constructed for each commitment for a total of 10 commitment scales, two per practice. As mentioned previously, the sponsoring organization felt that Have Fun was an important leader behavior ignored by Kouzes and Posner. An analysis of the critical incident responses used to explore the content of a Have Fun dimension led to the construction of five-item scales for the resulting two Have Fun commitments.

Upon completion of the 12 commitment scales the items were reassessed for content validity, as well as examined for possible bias or errors. This iterative process was accomplished through several cycles of item analysis by the individual research team members followed by group analysis and discussion. Lastly, items were assessed for grade level reading difficulty using the Microsoft Word™ Flesch-Kincaid Grade Level assessment tool and rewritten to correspond to an eighth grade level or lower. A limited number of items could not be simplified to the eighth grade reading level without removing words that the team judged critical to content validity.

Participants and Sample Design

171 military and civilian supervisors of all levels from the sponsoring Air Force organizations volunteered to participate in the upward feedback pilot program. The

supervisors were randomly assigned to two groups. Half of the supervisors (n= 86) and their subordinates (n= 620) subordinates received the Leadership Practices Inventory (self-rating and observer forms). The remaining supervisors (n=85) and their subordinates (n=641) received the Leader Self-Assessment and the Upward Feedback Instrument. Randomly dividing the sample in two and administering the LPI allows the researchers to attempt to replicate Kouzes and Posner's (1997) results within this sample and provides an opportunity to show convergent validity between the developed UFI and proven LPI.

Organizational representatives delivered to each member in the LPI group a survey package containing self-assessment instructions, a copy of the LPI self-assessment, observer instructions, copies of the LPI observer form for direct reports, code sheets, and return envelopes. Copies of the instructions for the LPI self-assessment and observer assessments are presented in Appendix A. The self-assessment instructions explained the purpose and scope of the pilot program, clarified that participation was voluntary, and assured supervisors that their responses would remain anonymous. Self-addressed envelopes, one for each survey, were included in all packets to ensure anonymity for the observer responses. The instructions directed supervisors to complete and mail the self-rating survey and hand-deliver the observer survey, instructions, code page, and envelope to each of their subordinates. The code sheets directed respondents to create a six character pseudonym based on the first two letters of respondent's Father's first name, first two letters of the respondents Mother's first name, and the day of the respondent's birth (e.g., PAMA10). The instructions included an explanation that the code was for survey validation and reliability analysis purposes and also explained that

some respondents would receive a follow-up survey in the weeks ahead. In the LPI survey group, 59 supervisors responded for a 69% response rate while 346 of their subordinates responded for a 56% response rate.

Organizational representatives also delivered survey packets to each member in the UFI group. Each packet contained a copy of the Leader Self-Assessment, copies of the UFI for direct reports, and return envelopes. Copies of the Leader Self-Assessment and UFI are presented in Appendix B. Self-assessment instructions and observer instructions, similar to those included in the LPI group, were incorporated in each of the surveys. Participation was similar to the LPI group with 60 UFI supervisors responding for a 71% response rate and 352 of their subordinates responding for a 55% response rate.

For LPI/UFI content validity and test-retest reliability analysis, the sample was further divided into subsets for administration of follow-up surveys. 103 observers originally administered the LPI were administered the LPI once again with 27 responding for a response rate of 26%. 112 observers originally administered the UFI were administered the UFI a second time with 28 responding for a 25% response rate. 111 observers were administered the alternate survey from that they were originally administered with 31 responding for a 28% response rate. Re-test survey packets were identical to the original survey packets and were sent to subjects approximately four weeks after the initial surveys were distributed. Retest responses were matched to original responses using the previously discussed code.

Leadership Practices Inventory Replication

Reliability Estimates of LPI Practice Scales

Scale reliability of the LPI practice scales was estimated by calculating the internal consistency of each 6-item scale as indexed by Cronbach's coefficient alpha (α). All scale measures of α are well above the .70 limit suggested for research designed to make decisions affecting groups (Nunnally and Bernstein, 1974). In fact, Table 15 shows all of the practice scales had reliabilities equal to or greater than .92; a degree of reliability in excess of Kouzes and Posner's (1997) reported range of .81 to .91.

Table 15. *Comparison of Scale and Mean Item Statistics for 5 Scales of Leadership Practices*

Scale	*M*	*SD*	α	*skew*	*kurt*
Challenging the Process (Challenge)	7.20	1.95	.92	-.846	.248
Inspiring a Shared Vision (Inspire)	6.79	2.12	.93	-.509	-.540
Enabling Others to Act (Enable)	8.15	1.82	.93	-1.617	2.483
Modeling the Way (Model)	7.92	1.82	.92	-1.243	1.288
Encouraging the Heart (Encourage)	7.52	2.19	.95	-1.038	.424

Note: The scale mean (M) has been transformed back to the original metric by dividing the sum by the number of items, (SD) is the standard deviation of the transformed scale values, (skew) and (kurt) are the skewness and kurtosis are relative measures of scale data normality.

The LPI Likert item measurement scale ranges from 1 to 10 representing behavior frequencies from almost never to almost always. To reference the scale means found in Table 15, a score of 7 references to exhibiting the practice behaviors fairly often, while a score of 8 references to exhibiting the practice behaviors usually. From the scale means, it appears that supervisors in our sample were observed utilizing Enabling Others to Act behaviors to a greater extent than any other practice behaviors at approximately a frequency rate of usually.

LPI Construct Validity Analysis

To replicate Kouzes and Posner's (1997) LPI construct validity analysis, a principle factor analysis with varimax rotation was conducted on the LPI survey data. Kouzes and Posner do not report whether they utilized a principle components or principle axis methodology so both methods were attempted. The results of both methodologies were virtually identical so the principle components factor analysis results are reported here for a sample size of $N = 417$. The sample is comprised of observer and self-rating surveys as well as observer surveys from the sample of test-retest subjects that originally completed the UFI. Table 16 displays the factor loadings for a principle components analysis with varimax rotation and factor extraction criterion of eigenvalues greater than one. Only two factors emerged with factor 1 having an eigenvalue of 19.166 and explaining 63.88%, while factor 2's eigenvalue was 1.688 and explained 5.63% of the variance. Factors 3-5, which did not meet the criteria, had eigenvalues ranging from .930 to .658. Kouzes and Posner (1997) do report finding five factors with eigenvalues greater than one.

Table 16. *Principle Components Factor Analysis of LPI items With Varimax Rotation.*

Item #/Practice	**Factor 1**	Factor 2	Item #/Practice	Factor 1	**Factor 2**
13 Enable	**.814**	.260	07 Inspire	.227	**.863**
03 Enable	**.800**	.340	12 Inspire	.329	**.821**
18 Enable	**.799**	.327	11 Challenge	.347	**.789**
14 Model	**.792**	.304	17 Inspire	.360	**.775**
05 Encourage	**.766**	.397	02 Inspire	.289	**.755**
30 Encourage	**.749**	.458	01 Challenge	.349	**.700**
08 Enable	**.748**	.378	27 Inspire	.453	**.693**
04 Model	**.743**	.400	06 Challenge	.492	**.672**
23 Enable	**.730**	.219	22 Inspire	.501	**.670**
10 Encourage	**.701**	.500	16 Challenge	.498	**.657**
29 Model	**.683**	.525	21 Challenge	.460	**.642**
15 Encourage	**.662**	.465			
28 Enabling	**.656**	.513			
19 Model	**.644**	.445			
26 Challenge	**.638**	.554			
20 Encourage	**.628**	.534			
25 Encourage	**.616**	.595			
24 Model	**.587**	.544			
09 Model	**.544**	.434			

Note. $N = 417$

While five factors failed to emerge, the item factor loadings did group by practice scale. Additionally, the emergence of two factors suggested a two construct theoretical framework. Content analysis of the practice scales does indeed seem to suggest that the two factors correspond to task-oriented and relations-oriented behavioral dimensions. As previously discussed in chapter two, the Enable and Encourage scales appear to correspond to relations-oriented behaviors while the Challenge and Inspire scales represent seemingly task-oriented behaviors. Interestingly, it appears that Kouzes and Posner's (1997) operational definition for the Model construct corresponds more closely with the relations oriented construct.

In an attempt to at least partially replicate Kouzes and Posner's (1997) research, a second attempt at a principle factor analysis was made using a factor extraction criterion of five factors. Again, there was a negligible difference in the results from attempting the principle components and principle axis techniques so the principle components results are presented. Forcing a five-factor solution did not change the eigenvalues. The factor loadings for the forced five-factor solution are displayed in Table 17.

When five-factor solution is forced, the item factor loadings do begin to suggest an underlying five-dimensional behavioral theoretical framework. The notable exception is the group of three Challenge items that load on what would appear to be an Inspire construct. The remaining three Challenge items do load on the fifth factor as a separate group. The single other exception is an Enable scale item, item 28, that loads on what appears to be a Model construct. While Kouzes and Posner (1997) were able to extract five factors with eigenvalues greater than one, their reported item factor loadings, previously shown in Table 2, showed cross loading. Given the significant cross loadings,

it would be of academic interest to know the intercorellations between practices, but Kouzes and Posner do not report these values.

Table 17. *Forced Five-Factor Principle Components Factor Analysis of LPI items With Varimax Rotation.*

Item #/Practice	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
07 Inspire	**.828**	.118	.233	.225	.180
12 Inspire	**.788**	.220	.314	.184	.172
17 Inspire	**.737**	.202	.341	.251	.129
27 Inspire	**.663**	.302	.339	.280	.104
02 Inspire	**.643**	.251	.034	.282	.424
11 Challenge	**.641**	.235	.257	.191	.448
16 Challenge	**.604**	.355	.270	.347	.163
22 Inspire	**.600**	.421	.368	.116	.271
06 Challenge	**.469**	.258	.275	.427	.444
23 Enable	.139	**.779**	.272	.016	.342
13 Enable	.262	**.750**	.274	.327	.039
18 Enable	.226	**.743**	.304	.226	.314
08 Enable	.355	**.683**	.211	.370	.124
03 Enable	.298	**.663**	.319	.397	.091
15 Encourage	.297	.272	**.737**	.276	.167
20 Encourage	.365	.257	**.729**	.244	.201
30 Encourage	.304	.415	**.716**	.252	.191
05 Encourage	.238	.395	**.676**	.360	.155
35 Encourage	.458	.318	**.660**	.208	.208
10 Encourage	.337	.383	**.488**	.452	.240

(table continues)

Table 17 (continued)

Item #/Practice	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
09 Model	.255	.158	.205	**.783**	.186
04 Model	.314	.480	.334	**.569**	.084
14 Model	.216	.531	.356	**.549**	.073
24 Model	.405	.283	.346	**.543**	.196
19 Model	.293	.376	.304	**.525**	.246
28 Enable	.298	.314	.456	**.480**	.342
29 Model	.361	.404	.417	**.453**	.283
21 Challenge	.392	.293	.370	.143	**.622**
01 Challenge	.457	.175	.198	.303	**.599**
26 Challenge	.356	.423	.357	.362	**.435**

Note. $N = 417$.

LPI Test-Retest Reliability

The test-retest reliability of the LPI was calculated using Pearson's correlation coefficients for all test-retest sub-sample practice scales, original and retest. As seen in Table 18, the LPI practice scales show a high degree of stability over time. These results suggest that the stability of the LPI instrument was replicated with our sample. Table 18 also identifies extremely high correlations among the five constructs. The high degree of correlation between the five constructs does not suggest highly distinctive constructs.

Table 18. *LPI Practice Scales Test-Retest Pearson's Correlation Coefficients*

	Practice Scales				
	Challenge	Inspire	Enable	Model	Encourage
Challenge retest	**.98**	.96	.92	.86	.92
Inspire retest	.96	**.98**	.87	.86	.89
Enable retest	.89	.87	**.98**	.90	.94
Model retest	.86	.87	.89	**.97**	.88
Encourage retest	.94	.93	.95	.90	**.97**

Note. $N = 27$.

Upward Feedback Instrument Analysis

Reliability Estimates of UFI Commitment Scales

Perceptions of the frequency of use of the commitment scale behaviors was measured using a Likert scale ranging from 0 to 7, representing frequencies of not observed to almost always. Scale reliability of the UFI commitment scales was estimated by calculating the internal consistency of each 5-item scale as indexed by Cronbach's coefficient alpha (α). The acceptable scale reliability limit was determined to be .70 as suggested by Nunnally and Bernstein (1994) who recommended such for research designed to make decisions affecting groups. As illustrated in Table 19, all commitment scale alpha coefficients were .87 or higher, ranging up to a reliability index of .91. The relatively high alpha coefficients suggest a high degree of internal consistency for all commitment scales.

Table 19. *Comparison of Scale and Mean Item Statistics for 12 Scales of Leadership Commitments*

Scale	*M*	*SD*	α	*skew*	*kurt*
Seek out challenges to innovate & improve (C1)	4.95	1.65	.91	-1.039	.415
Try ideas, take risks, learn from mistakes (C2)	4.79	1.68	.88	-.910	.049
Create a vision (I1)	5.00	1.63	.89	-.945	.167
Attract others to a common purpose (I2)	4.36	1.76	.89	-.660	-.416
Encourage trust and cooperation (E1)	5.34	1.49	.89	-1.311	1.376
Shares information and power (E2)	5.54	1.34	.89	-1.509	2.272
Set the example (M1)	4.94	1.60	.89	-1.064	.691
Motivate, build commitment with small wins (M2)	4.73	1.60	.89	-.841	.106
Recognize & reward individual performance (H1)	4.96	1.65	.87	-.850	-.061
Celebrate team accomplishments (H2)	4.70	1.79	.88	-.775	-.297
Allow humor to reduce stress & boredom (F1)	5.48	1.53	.90	-1.389	1.462
Promote fun activities to relax and unwind (F2)	4.54	1.86	.90	-.577	-.694

Note: The scale mean (M) has been transformed back to the original metric by dividing by the number of items, (SD) is the standard deviation of the transformed scale values, (skew) and (kurt) are the skewness and kurtosis are relative measures of scale data normality.

Similar to the LPI replication attempt, the behaviors most commonly exhibited by supervisors, as perceived by sample subjects, were those participative or empowering type behaviors encompassed by the Encourage trust and cooperation and Shares information and power commitments (M = 5.34 and M = 5.54 respectively). Additionally, the commitment measuring the Allow humor to reduce stress and boredom aspects of the proposed construct of Have Fun also had a high mean score, (M = 5.48). Interestingly, the second Have Fun commitment, Promote fun activities to relax and unwind, has a scale mean score nearly a full point lower, (Δ = .94). This would appear to suggest that the sponsoring organization's supervisors usually (5 = usually on the Likert measurement scale) display or encourage humor in the workplace, but do not often attempt to organize fun activities. This is not surprising given that this type of leadership behavior has only recently gained popularity in the corporate sector and is virtually nonexistent in leadership behavior research.

UFI Test-Retest Reliability

The test-retest reliability of the UFI was calculated using Pearson's correlation coefficients for all test-retest sub-sample commitment scales, original and retest. As illustrated in Table 20, the UFI commitment scales did not show a high degree of stability over time. The retest commitment scale means for Create a vision (I1) correlated only at .51 with the original scale means and four other commitments were in the .50 to .60 range. The commitment that correlated highest was Share information and power, and that was only at .80. Retest correlations at this level may indicate that the instrument may have measurement error problems and may not be particularly reliable. On the other

hand, the very low retest response rate (25%) resulted in a sample size of only 28. While the correlation coefficients are not mathematically sensitive to sample size, the probability of sampling error increases with smaller sample sizes.

An examination of the test-retest sample responses revealed three responses that had highly inconsistent initial and retest scale means. Table 21 contains the test-retest correlations after removing the three sample responses. With the exception of 4 scales, the correlations improved by at least .15. The correlations now range from a low of .60 for Setting the example (M1) to a high of .93 for Sharing information and power (E2). Most significantly, 8 of 12 scales are at or near the acceptable level of .80.

To further explore the possibility of the presence of sampling error in the UFI test-retest results, internal reliabilities were calculated for the initial and follow-on scales in the UFI sample with three responses removed and compared with internal reliabilities from the LPI test-retest sample. Chronbach's alpha coefficients for the LPI initial and follow-on scales were consistent with the scale reliabilities for the complete LPI sample. Alpha values ranged from a low of .94 to a high of .98. The consistency between LPI scale reliabilities indicates the LPI test-retest sub-sample is representative of the total sample.

Unlike the LPI internal reliabilities, the UFI initial scale reliabilities were significantly lower than the UFI total sample alphas even with the three inconsistent responses removed. Internal reliabilities for the total UFI sample were all above .87, but 4 of the 12 test-retest initial scales had alphas below .70 and three more were between .70 and .80. The H1 commitment scale had the lowest reliability with an alpha of only .48. The UFI follow-on scale reliabilities were higher, .75 to .90, but still averaged less than

the total sample alphas that ranged from .87 to .91. Such large discrepancies between the UFI total sample internal reliabilities and the test-retest internal reliabilities suggest that the low UFI commitment scale test-retest correlations could be a result of sampling error. At this point however, no conclusion can be drawn. It will be necessary to conduct an UFI test-retest analysis on a larger sample before determining if the commitment scales are unreliable over time or in this case were simply subject to sampling error.

Table 20. *UFI Commitment Scales Test-Retest Pearson's Correlation Coefficients*

	Commitment Scales											
	C1	***C2***	***I1***	***I2***	***E1***	***E2***	***M1***	***M2***	***H1***	***H2***	***F1***	***F2***
C1 retest	**.53**	.46	.36	.30	.29	.51	.39	.50	.41	.40	.33	-.09
C2 retest	.49	**.74**	.45	.47	.36	.32	.61	.56	.64	.50	.16	.04
I1 retest	.50	.68	**.51**	.52	.22	.22	.68	.54	.49	.49	.21	-.04
I2 retest	.66	.81	.57	**.66**	.50	.37	.58	.66	.65	.62	.20	.18
E1 retest	.77	.51	.55	.55	**.74**	.60	.01	.63	.58	.62	.27	.33
E2 retest	.58	.36	.25	.25	.43	**.80**	.30	.47	.36	.26	.45	-.03
M1 retest	.55	.57	.51	.43	.34	.29	**.55**	.42	.45	.53	.17	.05
M2 retest	.55	.61	.43	.51	.29	.42	.47	**.62**	.48	.53	.32	.05
H1 retest	.23	.53	.16	.15	.19	.25	.56	.27	**.53**	.27	.12	-.12
H2 retest	.53	.64	.42	.50	.45	.36	.48	.42	.60	**.66**	.28	.28
F1 retest	.54	.34	.36	.28	.39	.71	.38	.45	.35	.33	**.57**	.00
F2 retest	.59	.36	.39	.55	.62	.49	-.09	.43	.33	.64	.39	**.74**

Note: See Table 19 for commitment variable to commitment name relationship. *N = 28.*

Table 21. *UFI Commitment Scales Test-Retest Pearson's Correlation Coefficients with Three Responses Removed*

	Commitment Scales											
	C1	***C2***	***I1***	***I2***	***E1***	***E2***	***M1***	***M2***	***H1***	***H2***	***F1***	***F2***
C1 retest	**.77**	.51	.55	.55	.55	.74	.27	.74	.48	.44	.46	.06
C2 retest	.66	**.90**	.64	.79	.58	.54	.67	.94	.75	.53	.36	.08
I1 retest	.73	.85	**.79**	.89	.48	.38	.73	.87	.61	.63	.39	.08
I2 retest	.76	.86	.66	**.86**	.59	.54	.63	.92	.62	.57	.36	.11
E1 retest	.77	.48	.53	.58	**.76**	.72	.05	.79	.48	.59	.45	.20
E2 retest	.73	.43	.38	.41	.89	**.94**	.18	.59	.47	.43	.58	.24
M1 retest	.81	.66	.78	.79	.58	.53	**.60**	.79	.43	.60	.40	.08
M2 retest	.78	.73	.64	.84	.61	.63	.40	**.94**	.57	.70	.52	.26
H1 retest	.42	.79	.34	.50	.57	.56	.64	.67	**.79**	.28	.38	-.05
H2 retest	.67	.71	.55	.80	.59	.62	.53	.75	.58	**.71**	.60	.37
F1 retest	.65	.42	.49	.42	.76	.79	.32	.55	.44	.55	**.72**	.25
F2 retest	.55	.32	.32	.53	.52	.58	.00	.53	.19	.61	.55	**.72**

Note. See Table 19 for commitment variable to commitment name relationship. *N = 28.*

Confirmatory Factor Analysis

Nested confirmatory factor analysis was performed using the LISREL (Jöreskog and Sörbom, 1993) structural equation modeling program. The nested comparison of the proposed leadership behavior models provided a test of the hypothesis concerning the relationships of the twelve commitment variables to the underlying latent leadership

dimensions. The hypothesized 5-factor model based on Kouzes and Posner's (1997) leadership taxonomy was compared with several plausible alternative models to determine the factor structure that best described the covariance patterns in the data.

Structural equation modeling methodology analyzes the observed covariance matrix of a set of variables in reference to a hypothesized structure. The analysis produces several fit indices that reflect the hypothesized model's ability to reproduce the original variance and covariance matrices given the constraints of proposed variable-construct relationships. The fit index Chi-square (X^2) measures the discrepancy between the observed and predicted matrices and is directly proportional to the amount of discrepancy. Additionally, the X^2 is reported with the number of degrees of freedom associated with the model. The degrees of freedom are a function of the number of covariances provided and the number of paths specified: $df = \frac{1}{2}(p+q)(p+q+1) - t$ where p is the number of observed independent variables, q is the number of observed dependent variables and t is the number of independent parameters estimated (Jöreskog and Sörbom, 1993). For a confirmatory factor analysis, all the observed variables are considered independent (p).

The properties of the X^2 allow nested models to be directly compared. A more specified model (fewer degrees of freedom) is nested in another less specified model if it contains all paths of the more parsimonious model. For each additional path proposed by the researcher and estimated by the structural equation modeling program, a degree of freedom is lost. In general, for a given model, the more parameters estimated, the more closely the structural equation modeling methodology can reproduce the observed

covariance matrix (Jöreskog and Sörbom, 1993). The nested model with fewer degrees of freedom will have a lower X^2 (Jöreskog and Sörbom, 1993). If the reduction in X^2 due to the additional paths is sufficiently large given the loss of degrees of freedom, then the revised model provides a better fit. A statistically reliable reduction in the value of the model X^2 given the loss of the degrees of freedom implies that the alternative model provides a statistically reliable improvement over the comparison model. Five different plausible leadership behavior models were compared in nested fashion to determine the model with the best relative fit. If Kouzes and Posner's (1997) five-dimension model provides the best relative fit, the uniqueness of Have Fun will be tested using a nested comparison of a five-dimension and six-dimension model.

The maximum likelihood estimation technique used in the LISREL (Jöreskog and Sörbom, 1993) assumes that the measured variables are continuous and have a multivariate normal distribution. However, LISREL is quite robust when dealing with data that only moderately violates the assumption of normality. The range of skewness and kurtosis found in the commitment variable distributions fall well within the LISREL program's level of robustness.

Leadership Commitment Scale Content Validity

The content validity of the UFI commitment scales was analyzed from two different aspects. The first analysis compared the content of the UFI commitment scales to the content of the corresponding LPI practice scales by correlating the scale means from the sub-sample of respondents that was administered both instruments. Since the commitment scales were created to measure behaviors categorized by Kouzes and

Posner's leadership practices, high correlations are expected and should indicate a high degree of content commonality. Additionally, as the LPI is an instrument with established validity, high correlations would infer that the commitment scales are also valid.

Another measure of commitment scale content validity is the degree to which the supervisor's self-ratings correlate to those of his or her observers' ratings. Even though self and observer ratings will not agree exactly, it is reasonable to expect that valid, easily comprehended scale content should result in most of scales correlating to a level of statistical significance. Once again, the LPI will serve as a comparative reference, but in this case the sample will consist of all matched respondents that were administered the respective instrument.

Chapter Summary

This chapter began with a description of the UFI development process and continued with a description of the instrument administration and sample design. The LPI replication results were next presented. The five practice scales proved to be reliable, but factor analysis of the response data resulted in only two unforced factors. Forcing five factors resulted in scale item groupings that closely resembled the LPI underlying latent structure. Test-retest correlations for the LPI practice scales were satisfactory.

UFI commitment scales showed a high degree of internal reliability, but test-retest correlations were below satisfactory levels. Subsequent analysis of the test-retest sub-sample indicated that the small sample size resulted in sampling error. Removing several

of the least consistent responses indicated that UFI test-retest correlations might reach or approach satisfactory levels given a larger, more representative sub-sample. The chapter concludes with a description of the methods used to assess the validity of the UFI underlying constructs.

IV. Results and Analysis

Overview

This research began with the objective of developing a reliable and valid upward feedback instrument for use by the sponsoring organizations to further supervisor development. The analysis and results presented in this chapter are an attempt to confirm the underlying latent structure of the commitment scales that comprise the Upward Feedback Instrument and thusly establish the validity of the instrument. In order to confirm the UFI commitment scales measure the five leadership practices (factors) proposed by Kouzes and Posner (1997) as well as a sixth practice, Have Fun, a nested model confirmatory factor analysis was accomplished in two phases.

The first analysis compares the five-factor model with alternative single-, two-, three-, and four-factor models utilizing the corresponding commitment scales. The second analysis compares the five-factor model with the Have Fun commitments added as additional measures of the Encouraging the Heart practice and a six-factor model that incorporates a Have Fun practice. Relatively good model fit indices and statistically significant improvements in fit over the alternative models provided evidence of the validity of the UFI hypothesized latent structure, however, modification indices in both phases suggested that the practices are not very distinct for this sample.

The final analysis consisted of an attempt to show convergent validity between the LPI and UFI using two correlational comparisons between the UFI commitment scale means and the LPI practice scale means from the sub-sample of respondents that was administered both instruments. The first correlational analysis compared corresponding

LPI and UFI scales for all respondents, self and observer. The second analysis compared self and observer scales means within each sub-sample of LPI responses and UFI responses.

Results of the Phase 1 Confirmatory Factor Analysis

Table 22 presents the results of the nested model confirmatory factor analysis for a sample of 391 employees from the sponsoring organizations. The alternative two-factor (B) and three-factor (C) models were a statistically significant improvement in fit over the single-factor leadership model. Furthermore the four-factor proved to be a statistically significant improvement over the three-factor model as indicated in Table 22 (D to C).

The hypothesized five-factor model (E) also proved to be a statistically significant better fit ($X^2_{diff}(4) = 17.93$, $p < .05$, $\Delta GFI = .02$) compared to the four-factor model. The results of all comparisons suggest that Kouzes and Posner's five-factor leadership practice theoretical framework does indeed provide the best explanation of the proposed models for the underlying latent structure of the 10 corresponding commitment scales.

The statistically reliable model X^2 for the five-factor model suggests that the specified paths did not provide a perfect fit to the data. Jaccard and Wan (1996) describe three additional classes of fit scales (absolute, parsimonious, and relative) that should be considered when evaluating the fit of a structural equation model. Absolute fit compares the predicted and observed covariance matrices. Both the goodness of fit index (GFI = .95) and standardized root mean square residual (Standardized RMR = .014) indicated satisfactory absolute fit to the model. The second category of fit scales also considers

absolute fit, but penalizes the model based on its complexity. The more paths specified, the lower the models' parsimony. The Root Mean Square Error of Approximation (RMSEA) of .095 is relatively close to the acceptable threshold of .08 for adequate

Table 22. *Comparisons of Nested Models of Five UFI Leadership Practices*

Model	*df*	X^2	*p*	*Std RMR*	*GFI*	*RMSEA*	*CFI*
A. One—Factor	35	472.4	.00	.034	.80	.18	.91
B. Two—Factor	34	327.2	.00	.026	.84	.16	.94
C. Three—Factor	32	216.8	.00	.021	.89	.13	.96
D. Four—Factor	29	138.6	.00	.016	.93	.10	.98
E. Five—Factor	25	120.6	.00	.014	.95	.10	.98
Nested Model Comparisons	*df*	X^2_{diff}	*p*				
1. B to A	1	145.2	.000				
2. C to B	2	110.4	.000				
4. D to C	3	78.27	.000				
4. E to D	4	17.93	.001				

Note. $N = 391$; Standardized Root Mean Square Residual (*Std RMR*), Goodness of Fit Index (*GFI*); Root Mean Square Error of Approximation (*RMSEA*), Comparative Fit Index (*CFI)*

parsimonious fit. The third category of fit scales compares the absolute fit to an alternative model. The value for the comparative fit index (CFI = .98) indicates that the five-factor model has a good fit compared to a null model that posits no correlations between the observed variables. An inspection of the fitted and standardized residuals as well as the modification indices revealed numerous areas of ill fit. Of the 40 residuals, 11 residuals were statistically significant. A percentage that greatly exceeds the recommended guideline of five percent.

The LISREL standardized and unstandardized path coefficients for the ten leadership commitment scales of perceptions of effective leadership practices and correlations among the five latent constructs are depicted in Figure 8. The correlations among the five leadership practices were very high. The high construct correlations in conjunction with the numerous statistically significant residuals and unpredicted suggested paths cast doubt as to the true distinctiveness of the constructs as measured by the UFI commitment scales for our sample.

Results of the Phase 2 Confirmatory Factor Analysis

Table 23 presents the results of the five- to six-factor nested model confirmatory factor analysis for the same sample of 391 employees utilized in the phase one analysis. The hypothesized six-factor model (B) was a statistically significant improvement in fit over the five-factor leadership model (X^2_{diff} (5) = 66.06, $p < .001$, $\Delta GFI = .02$). However, the statistically reliable X^2 model for the six-factor model suggests that the specified paths did not provide a perfect fit to the data. Both the goodness of fit index

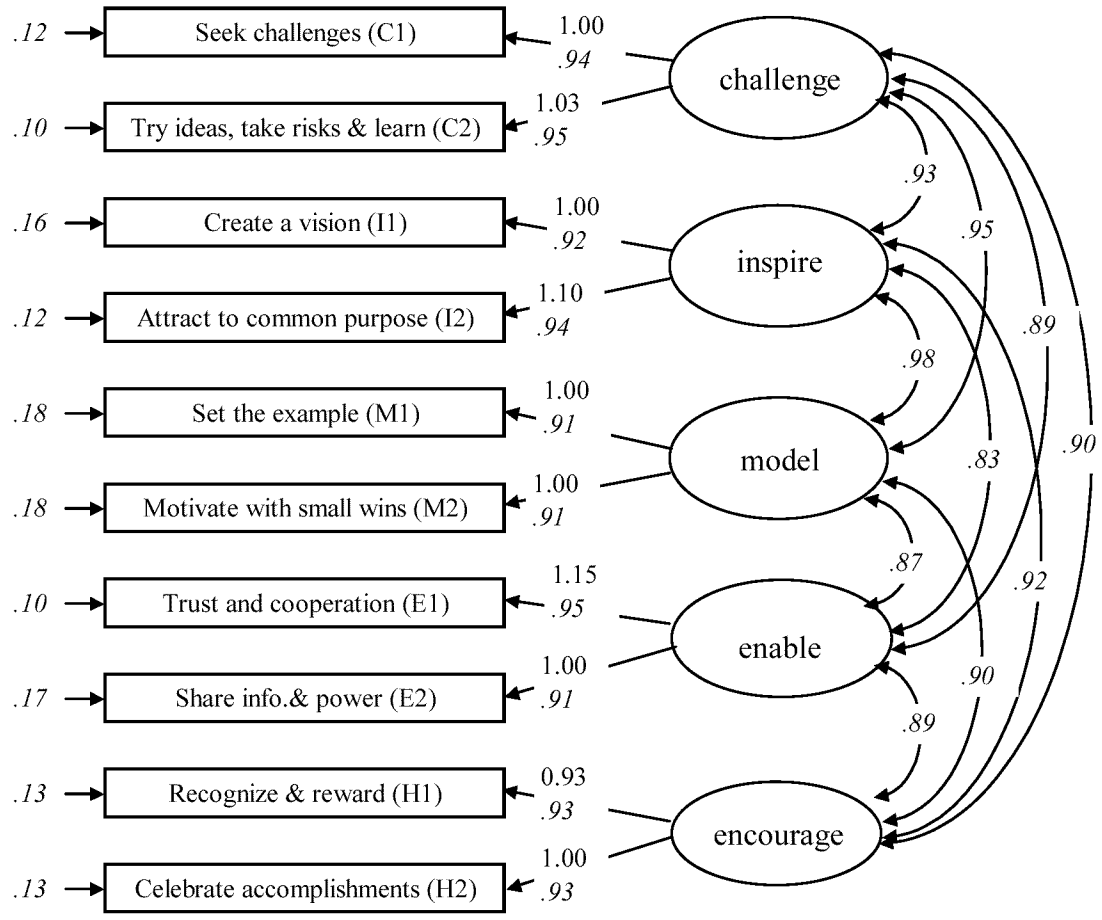

Figure 8. Confirmatory factor structure of 10 leadership commitment scales corresponding to Kouzes & Posner's (1997) five-factor leadership behavior taxonomy. All paths are statistically reliable at $p < .001$, standardized paths appear in italics.

$N = 391$, $X^2 (25) = 120.6$, *CFI* = .98.

(GFI = .92) and standardized root mean square residual (Standardized RMR = .019) indicated satisfactory absolute fit to the model. The Root Mean Square Error of Approximation (RMSEA) of .10 is not as close to the acceptable threshold of .08 for adequate parsimonious fit as would be expected of a model with good fit. The value for

the comparative fit index (CFI = .97) indicates that the six-factor model has a good fit compared to a null model that posits no correlations between the observed variables.

Table 23. *Comparisons of Nested Models of Six UFI Leadership Practices*

Model	*df*	X^2	*p*	*Std RMR*	*GFI*	*RMSEA*	*CFI*
A. Five—Factor	44	264.9	.00	.028	.90	.11	.96
B. Six—Factor	39	198.9	.00	.019	.92	.10	.98

Nested Model Comparisons	*df*	X^2_{diff}	*p*
1. B to A	5	66.1	.000

Note. $N = 391$; Standardized Root Mean Square Residual (*Std RMR*), Goodness of Fit Index (*GFI*); Root Mean Square Error of Approximation (*RMSEA*), Comparative Fit Index (*CFI*)

Not surprisingly, given the results of the phase one analysis, an inspection of the fitted and standardized residuals and the modification indices revealed numerous areas of ill fit. Of the 60 residuals, 21 were statistically significant. A percentage that greatly exceeds the recommended guideline of five percent.

The LISREL standardized and unstandardized path coefficients for the 12 leadership commitment scales of perceptions of effective leadership practices and

correlations among the six latent constructs are depicted in Figure 9. Once again, the correlations among the latent leadership practices were very high. The high construct correlations in conjunction with the numerous statistically significant residuals and unpredicted suggested paths again casts doubt as to the true distinctiveness of the constructs as measured by the 12 UFI commitment scales for our sample.

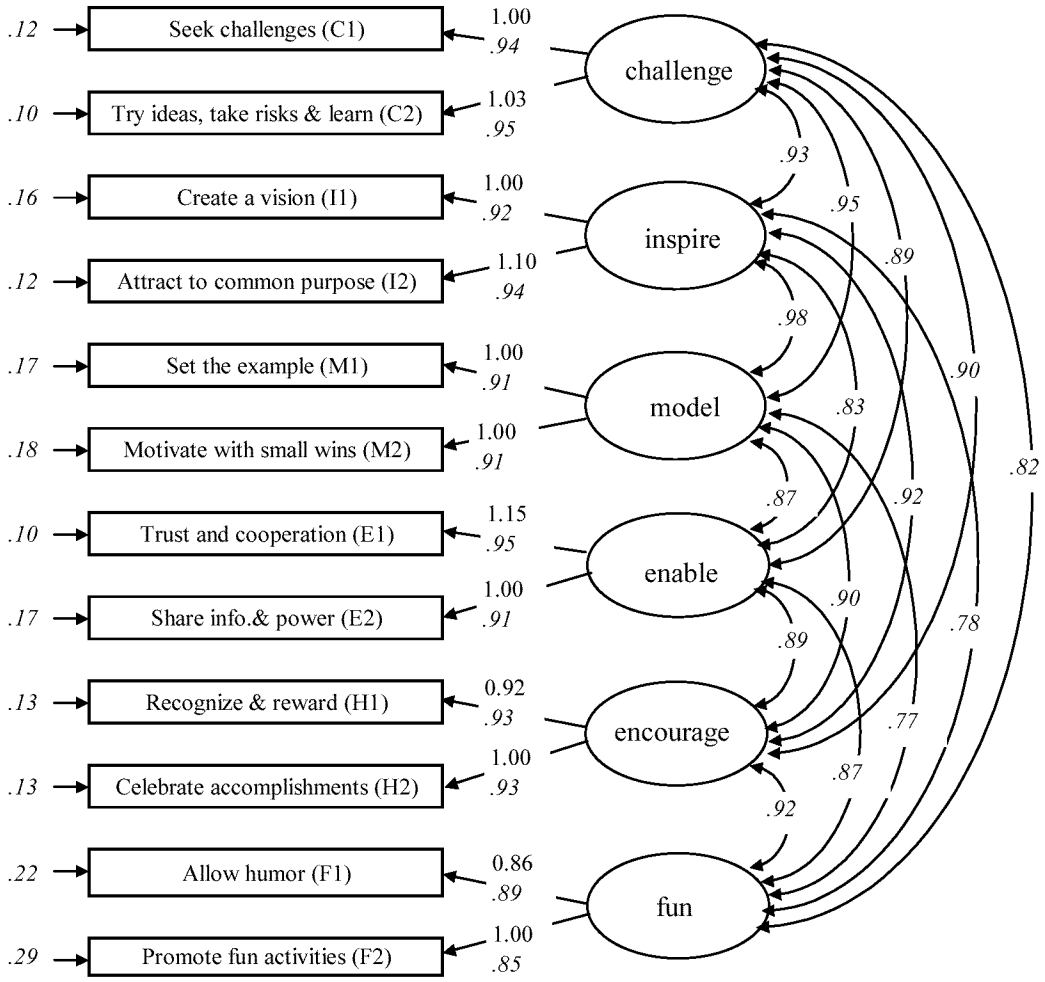

Figure 9. Confirmatory factor structure of 12 UFI leadership commitments.

All paths are statistically reliable at $p < .001$, standardized paths appear in italics.

$N = 391$, X^2 (25) = 120.6, *CFI* = .98.

Convergent Validity Results

The final analysis of the UFI validity analysis consisted of two correlational comparisons between the UFI commitment scale means and the LPI practice scale means. The results from the first analysis were obtained from a sub-sample of respondents that were administered both instruments. The correlation coefficients are displayed in Table 24. Four of the Kouzes and Posner (1997) LPI practice scale and UFI commitment scale pairings reflect a relatively high degree of content commonality with coefficients above .81. The notable exception is the Model practice and commitments scales which have coefficients of .69 and .53. The low correlations suggest that the two Model commitment scales capture different behavioral content than the LPI.

Similar to the undesired cross loadings found in the first two phases, Table 24 also contains high correlations between commitment scales and non-corresponding practice scales. The Model commitments cross load across all the LPI practice scales suggesting that the content does not represent a unique leadership behavior factor. Additionally, the Challenge commitment scales correlate higher with the Inspire practice scale than with the corresponding practice scale. In general, the correlational patterns among the commitment scales suggest only partial support for the contention that the scales measure five distinct latent constructs.

Table 24. *LPI Practice Scale Mean and UFI Commitment Scale Mean Pearson's Correlation Coefficients*

UFI	**LPI Practices**				
Commitments	Challenge	Inspire	Enable	Model	Encourage
C1	**0.83**	0.91	0.60	0.63	0.78
C2	**0.86**	0.90	0.49	0.55	0.76
I1	0.62	**0.81**	0.49	0.63	0.79
I2	0.74	**0.84**	0.60	0.67	0.81
E1	0.72	0.68	**0.84**	0.82	0.73
E2	0.64	0.54	**0.89**	0.74	0.60
M1	0.74	0.78	0.69	**0.69**	0.76
M2	0.46	0.59	0.31	**0.53**	0.63
H1	0.49	0.67	0.53	0.75	**0.83**
H2	0.72	0.77	0.52	0.71	**0.89**

Note. $N = 31$.

The second analysis compared self and observer scale means of the LPI practice scales and the UFI commitment scales. As indicated in Table 25, 3 of 5 LPI practice scales (60%) proved to be significantly correlated. Additionally, the Inspire and Encourage self-rating scales were significantly correlated with the Challenge and Model observer scales respectively. As shown in Table 26, 8 of 12 UFI commitment scale correlations (67%) were significant. In addition, 3 of the UFI commitment scale correlations were significant to $p < .01$. The higher percentage of statistically significant UFI commitment scale correlations supports the notion that measuring leadership

behavior at the commitment level versus the practice level has practical benefits. In other words, from these results one can infer that the more specific behavioral category decreases the likelihood that supervisors and observers will interpret the meaning of items differently.

Table 25. *LPI Self and Observer Practice Scale Mean Pearson's Correlation Coefficients*

Self	**Observer**				
	Challenge	Inspire	Enable	Model	Encourage
Challenge	**.18**	.19	.10	.08	.11
Inspire	.23*	**.25***	.10	.14	.17
Enable	.08	.08	**.25***	.20	.14
Model	.07	.04	.11	**.16**	.16
Encourage	.11	.14	.17	.24*	**.28***

Note: $N = 59$. $*p < .05$.

The self and observer scale means of the UFI commitment scales do have a higher incidence of off-diagonal statistically significant correlations. In particular, the C1 and H2 self-rating scales correlate with numerous observer scales. However, the C1 and H2 observer scales do not show the same pattern. In general, the remaining off-diagonal statistically significant correlations reflect the patterns of cross loadings found in the LPI and UFI factor analysis. The I1 observer scale correlates significantly with the two self-rating Challenge commitments and the I2 self-rating commitment. The M1 observer

scale correlates significantly with the Challenge and Inspire self-rating commitments. Finally, the Fun and Encourage commitments show significant correlations.

Table 26. *UFI Self and Observer Commitment Scale Mean Pearson's Correlation Coefficients*

						Observer						
Self	C1	C2	I1	I2	E1	E2	M1	M2	H1	H2	F1	F2
C1	**.35****	.37**	.36**	.38**	.35**	.32*	.47*	.33*	.23*	.21	.14	.10
C2	.14	**.21***	.23*	.18	.12	.10	.27*	.17	.02	.00	-.02	-.10
I1	.06	0.15	**.29***	.17	.07	.05	.25*	.18	.00	.07	-.05	-.12
I2	.17	.20	.27*	**.22***	.17	.12	.28*	.19	.09	.10	-.03	.00
E1	.03	.08	.11	.11	**.09**	.00	.11	.06	.05	.01	-.06	-.08
E2	-.01	.06	.03	.07	.08	**.08**	.12	.09	.12	.06	.03	.01
M1	.08	.18	.22	.17	.12	.13	**.27***	.15	.04	.05	-.11	-.15
M2	-.02	.11	.11	.06	.01	-.01	.19	**.10**	-.09	-.10	-.17	-.22
H1	.11	.15	.20	.13	.19	.15	.23*	.17	**.11**	.11	.07	.03
H2	.28*	.26*	.32*	.26*	.32*	.28*	.34**	.27	.27*	**.31****	.21	.24*
F1	.09	.07	.12	.12	.14	.16	.15	.14	.21	.22	**.23***	.22*
F2	.08	.06	.11	.09	.11	.12	.14	.07	.18	.23*	.28*	**.41****

Note. $N = 59$. $*p < .05$. $**p < .01$.

Chapter Summary

Chapter IV presented the results from the attempt to confirm the underlying latent structure of the commitment scales that comprise the Upward Feedback

Instrument and establish the validity of the instrument. In the first analysis, a nested confirmatory factor analysis confirmed that the five-factor model provided a better fit to the data than any of the alternative models. This result supported the second hypothesis that predicted the five-factor model would provide the best fit. However, numerous fit indices suggested many areas of ill fit and suggested variable-to-construct relationships outside the intended theoretical framework. The numerous areas of ill fit and the unintended commitment and practice relationships do not provide support for hypothesis 1 and cast doubt on the validity of the UFI.

The second analysis results were virtually identical to those of the first phase nested model confirmatory factor analysis. The proposed six-factor model provided a better fit than the alternative five-factor model but fit indices revealed the same problems as those that resulted from the first phase analysis. These results partially support the contention of the third hypothesis that Have Fun is a unique dimension of leadership behavior, but do not provide complete support.

In the convergent validity analysis, the generally high correlations somewhat confirmed the content validity of all but the Modeling the Way commitment scales. However, relatively high correlations among non-corresponding scales appear to confirm the lack of construct distinctiveness apparent in the confirmatory factor analysis results. Additionally, the UFI commitment self and observer scales showed a slightly higher degree of agreement than the LPI scales, but both instruments had significant cross loadings across scales.

V. Discussion

Overview

This research was initiated with the intent to develop a reliable and valid upward feedback instrument for the sponsoring organizations' use in supervisor development programs. The Upward Feedback Instrument was constructed utilizing Kouzes and Posner's (1997) five factor underlying theoretical framework along with a sixth leadership practice construct, Have Fun. This chapter discusses the results of the statistical analyses performed in Chapter IV that tested the reliability and validity of Kouzes and Posner's Leadership Practices Inventory upward feedback instrument as well as the developed Upward Feedback Instrument. These analyses are discussed in reference to the three hypotheses posited in Chapter II and conclusions regarding this research are drawn. Additionally, this chapter discusses the limitations of the research as well as the theoretical and practical implications of the research results. The final section of this chapter suggests further research focusing on the Upward Feedback Instrument.

Hypothesis 1

Hypothesis 1 proposed that Kouzes and Posner's five leadership practices were distinct leadership behavior constructs. To test Hypothesis 1 and provide an example of convergent validity for the Upward Feedback Instrument theoretical framework, the Leadership Practices Inventory was administered to a randomly selected portion of our sample roughly corresponding to fifty percent. The LPI practice scales proved to be highly reliable both internally and over time. Conversely, the LPI construct validity results were not nearly so conclusive.

The principle component factor analysis of the LPI responses provided only limited support for Hypothesis 1. When the factor criterion was set to eigenvalues of greater than one, only two factors emerged that could reasonably be interpreted as task and relations oriented constructs. However when five factors were forced, Kouzes and Posner's (1997) five-factor framework began to emerge. The notable nonconformity was three Challenge the Process items loading with all six of the Inspire a Shared Vision items. In general, this research effort was only partially successful at replicating Kouzes and Posner's research and the factor analysis results only provided weak support for Hypothesis 1 with respect to our sample.

Hypothesis 2

Hypothesis 2 posited that a five-factor model would provide a better explanation of successful leadership behavior than alternative theoretical frameworks with fewer dimensions. This research tested Hypothesis 2 by performing a nested model confirmatory factor analysis of the Upward Feedback Instrument responses. Confirmatory factor analysis is possible only because the UFI utilizes two measures per construct. In this researcher's opinion, confirmatory factor analysis is preferable to exploratory or standard factor analysis because it allows the researcher to test the response data against an a priori theoretical framework.

The UFI commitment scales proved to be internally reliable. The scales did not prove to be nearly as reliable over time. The extremely small retest sample size, N = 28, makes it difficult to interpret the test-retest reliability of the UFI. A sample of only 28 is extremely susceptible to the effects of sampling error. In fact, after removing three

subjects with obvious test-retest discrepancies, the correlation coefficients improved significantly. Even so, five of the twelve commitment scales still had correlations well below the desired .80 level suggesting possible instability of the scales over time.

The hypothesized five-factor model clearly provided the best explanation of the UFI underlying latent structure when compared to alternative models with fewer constructs. This demonstrates to a certain extent instrument validity as the five-factor model was the underlying latent structure that the ten corresponding commitment scales were created to measure. Additionally, this result provides limited support for Hypothesis 2. However, while the five-factor model provided the best explanation it was far from a perfect fit. Numerous fit indices and modification indices indicated areas of ill fit and suggested alternative paths that were not suggested in the a priori structure. Additionally, all five latent constructs were very highly correlated.

Analyzing the cause of the five-factor model's ill fit is a complicated task with no definitive answer. One possible explanation is that the five leadership constructs do not actually exist as distinct entities. However, the success of Kouzes and Posner's (1997) research efforts appear to indicate that while highly correlated, the five practices are distinct entities. Another possible explanation for the ill fit is an overlap, or insufficiency, in the operational definitions of the constructs as measured by the commitment scale items. Considering this was a pilot test of the UFI, it is very possible that an evaluation and edit of scale content would reduce some areas of ill fit. Conversely, the fact that the LPI factor analysis results also showed a significant amount of cross loading tempers somewhat the idea that the UFI scale content is solely to blame for the model's ill fit. Given the results for both the LPI and UFI were ambiguous, the

third explanation then addresses possible weaknesses of our sample. This idea will be further explored in this chapter under the limitations section. In general, the nested model confirmatory factor analysis of the Upward Feedback Instrument response data provided only limited support for Hypothesis 2 due to the numerous areas of ill fit and high construct intercorrelations.

Hypothesis 3

Hypothesis 3 proposed that in addition to Kouzes and Posner's (1997) five leadership practices, Have Fun is a distinct leadership construct that can be measured by the two Have Fun commitments, Allow humor to reduce stress and boredom and, Promote fun activities to relax and unwind. Hypothesis 3 was tested by extending the nested model confirmatory factor analysis used to test Hypothesis 2. The six-factor model did provide the best explanation of the Upward Feedback Instrument data and suggests that Have Fun may be a unique leadership behavior construct. Given this analysis was simply an extension of the five-factor model analysis, it was not surprising that the six-factor model suffered from many of the same conditions of ill fit as the five-factor model.

The addition of the sixth construct did, however, introduce new areas of ill fit. The suggested areas of overlap were consistent with what might be expected given established leadership theory. The Have Fun commitment scales appear to overlap the other relations-oriented constructs, Enable Others to Act and Encouraging the Heart. The high correlations between these three constructs also suggest that they are very closely related. Once again, the results of the analysis can only be viewed as providing

limited support for the hypothesis in question, but the Have Fun construct did prove to be the most distinctive of the constructs with regards to intercorrelations.

Limitations

While entering the response data into computer files, it quickly became apparent that the most significant limitation of this research would be the lack of variability in the sample responses. A significant portion of both the LPI and UFI responses showed little or no variability across the items. From the comments accompanying many of the responses, it appears likely that a significant number of our sample subjects took a very cynical view of the upward feedback instruments. As an example, one comment stated that this was a waste of time and probably just another thesis effort by just another graduate student. Simply put, our sample is a poor representation of the population of supervisors. While two organizations were sampled, both were United States Air Force organizations with similar missions and both had been exposed to numerous surveys in the recent past.

Another sample limitation seriously degraded the value of the UFI test-retest research. The low response rate to the UFI retest surveys resulted in a sample size of only 28. With such a small sample it is virtually impossible to interpret the lower than expected commitment scale mean correlations. The scales may have problems with their reliability over time or, a few individuals may have overly biased the small sample. Removing three of the more obviously inconsistent responses significantly raised all but a few of the correlations suggesting the latter explanation has at least a degree of validity. Additionally, the generally high correlations between the LPI practice scale means and

the UFI commitment scale means suggests that the commitment scales are reasonably valid and should be reasonably reliable over time.

Comments accompanying the survey responses suggested two more limitations. The administration of the instruments did not take into account the length of supervision. As the Likert scale was based upon observed frequency of behavior use, subordinates who had only recently been supervised by the supervisor they were asked to rate were put in an awkward situation. They were forced to decide whether to give low ratings to their supervisor or try to rationalize a "fair" rating. Along a similar vein, neither instrument accounts for the limitations placed on a supervisor's actions by his or her organization, department, or next- level supervisor. From the accompanying comments, it again appears that the subordinates were forced to decide whether to rate literally or use their best judgment. In other words, rate the supervisor based on the actual frequency of his or her behaviors or, rate according to their perceptions of what the supervisor would do if unfettered.

A final limitation in this study is the lack of concurrent validity analysis. It is reasonable to expect that an individual supervisor's subordinate ratings should correlate to ratings from the boss, peers, and customers. Similarly, subordinate ratings might be expected to correlate with their level of job satisfaction.

Theoretical Implications

While neither the factor analysis of the LPI response data nor the confirmatory factor analysis of the UFI response data definitively confirmed the five-factor underlying latent structure of both instruments, the results did suggest their existence as distinct

constructs. Given the lack of variability in a significant portion of the responses, these results are still somewhat impressive. Similarly, the results of this research seem to indicate the very real possibility of a distinct sixth leadership construct that relates to making the workplace a fun environment. Having fun in the workplace has been a popular topic in industry periodicals for several years and appears to be a leadership behavior valued by many in the corporate sector. Hopefully this research will encourage the theoretical study of Having Fun as a leadership behavior construct.

Another theoretical first for this research is the testing of Kouzes and Posner's (1997) leadership theory against competing theoretical models. The theoretical study of leadership has led to a dizzying array of competing theories. It is often difficult for those who wish to improve their leadership abilities and practically apply their knowledge to choose one among the many competing models for study. Too simple a model only provides general suggestions. A model that is too complex may hide meaningful information among a deluge of insignificant information. While the six-factor model incorporating Kouzes and Posner's five leadership constructs did not perfectly fit the response data it most definitely provided the best fit. This result suggests that the six-factor model may be a reasonable balance between parsimony and sufficient sophistication.

Practical Implications

The development of the Upward Feedback Instrument provides organizations and individual supervisors with an alternative instrument to Kouzes and Posner's (1997) Leadership Practices Inventory. Most significantly, it provides an instrument that

measures leadership behavior at a lower, more specific level. The higher percentage of significant correlations between UFI self and observer scale means suggests the possibility that the more specific commitment scales require less rater interpretation and therefore provide more accurate and meaningful feedback.

Measuring leader behaviors at the commitment level should also enhance the ability of supervisors to act upon their feedback. The participating supervisors of the sponsoring organizations all received copies of Kouzes and Posner's *The Leadership Challenge* (1997) to facilitate their self-development efforts. In *The Leadership Challenge*, the behavioral content of the practices is presented in chapters relating to the corresponding commitments. Correspondingly, since the Upward Feedback Instrument measures the practices at the commitment level, supervisors received feedback reports that compiled the ratings at both the commitment and practice level. As such, supervisors should find it relatively easy to cross-reference their results with the corresponding chapter. Given the sponsoring organizations' stated purpose of utilizing upward feedback to enhance supervisor development, the development of an instrument whose results are more easily interpreted and cross-referenced with accompanying products provides a very real practical value.

Suggestions for Further Research

The recommendations for further research are fourfold. The Upward Feedback Instrument commitment scales should be reevaluated for content validity with the results of this research serving as guide. Specifically, the Modeling commitments appeared not to have adequately explained a distinct leadership construct. Similarly, cross loadings

between commitment scales indicate that certain scale items may need revision or replacement. In general, an iterative process similar to that used by Kouzes and Posner (1997) to develop the Leadership Practices Inventory should enhance the validity of the Upward Feedback Instrument. As a final suggestion for improving the validity of the UFI, I suggest that further administrations incorporate a length of supervision criteria and a measure of organizational interference with respect to the supervisor's ability to utilize the suggested leadership behaviors.

To better evaluate the validity of the UFI, the research should be expanded to include a larger, more diverse sample. It appears that more Air Force organizations may be planning to adopt the UFI as a supervisor development tool thereby greatly expanding the sample size. However, increasing the sample size does not necessarily better represent the supervisor population as a whole. The UFI needs to be administered to a sample of supervisors and subordinates from diverse organizations to better evaluate the external validity of any findings.

Research should also be initiated to measure the impact of the Upward Feedback Instrument administration on supervisor development. Related research efforts have focused on longitudinal studies that measure the improvement in a supervisor's observer ratings over subsequent administrations. Finally, a related research objective that warrants further study is an analysis of possible supervisor self-development actions taken in response to individual feedback reports. Considering the UFI is a tool designed to provide information to supervisors that identifies areas for self-development, it would also be beneficial to determine which self-developmental actions result in the greatest improvements.

Appendix A. LPI Instructions

(Mr/Ms Supervisor)
Position Title
Organization

Dear

Thank you for participating in the pilot Upward Feedback Program. Upward Feedback is another step in the center's continuing effort to provide tools that can help you develop your leadership ability. My goal is to provide you with all of the support I can so that you can reach your full potential as a leader. I strongly endorse getting feedback from your subordinates as an important component of leadership development. I want to emphasize that this program is strictly for your development. No one in the leadership chain will ask for or see any supervisor's feedback.

Assessment by subordinates can be extremely informing. Subordinates have a unique, and often essential, perspective on the effectiveness of their supervisors. Your people observe your interactions with your boss, your customers, your peers, and most importantly with them. Subordinate assessment of supervisors can also be controversial. There is often great reluctance, even fear, concerning implementation of this type of feedback. These fears occur equally in subordinates (fear of future retribution) and in supervisors (fear that negative feedback will move up the authority chain). In addition, assessment programs can generate much disinterest due to their irrelevance to day-to-day problems in the unit, and the long delays between data collection and feedback.

The Upward Feedback program was developed to emphasize the benefits and avoid the negative aspects of assessment programs. The Upward Feedback instrument is based on behaviors that all supervisors can do, and can learn to do better. You will not be given feedback on things that you cannot change. You can learn more about these behaviors by reading enclosed copy of Kouzes and Pozner's book *The Leadership Challenge*. As you distribute the surveys to the members of your unit, please encourage them to give you honest feedback. Let them know that their anonymity is assured. You will get personalized report based on your subordinates' feedback in the next few weeks based on a composite of their answers. Also let them know that when you get your personalized Upward Feedback that you will spend some time making sense of it, and then share your feedback and action plans with them. You will be given a workbook to help guide you through the process. Taking a few minutes up front to share your views and encouragement on Upward Feedback will give your employees the confidence that that their opinions matter.

Most of us do not understand the impact that our actions have on others, and we are not always sure our work is appreciated. Upward Feedback is one way to get some of this information. The pilot program will not address all of the issues involved in being a supervisor, but it is a great start. The challenges are enormous. However, I believe that it will bring each of us one step closer to what ASC and the Air Force expect of us as today's supervisors.

LEONARD KRAMER, Director
Human Resources Directorate

Leaders often want to know which behaviors they should concentrate on first. We would like to help point your supervisor to the behaviors that his or her people consider to be the most important. Please review your responses and list below the numbers of the five most important behaviors that you want your supervisor to perform more often.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Another way to help leaders focus their attentions is to show that their behaviors are related to specific outcomes. Please use the scale below to indicate the extent you agree with the following statements of outcomes.

Strongly Disagree	**Moderately Disagree**	**Slightly Disagree**	**Neither Agree nor Disagree**	**Slightly Agree**	**Moderately Agree**	**Strongly Agree**
1	**2**	**3**	**4**	**5**	**6**	**7**

____ 1. Overall, I am satisfied with my supervisor.

____ 2. Overall, I am satisfied with my unit.

____ 3. My supervisor is one of the best leaders I have ever known.

____ 4. My unit is one of the best places I have ever worked.

____ 5. Members of my unit work together very well.

____ 6. I have a very good relationship with my supervisor.

____ 7. Other members of my unit have a very good relationship with my supervisor.

____ 8. My supervisor has a very good relationship with the customers of our products and services.

____ 9. My unit has a very good relationship with the customers of our products and services.

____ 10. Leaders in our organization think my supervisor is quite effective.

____ 11. Leaders in our organization think my unit is quite effective.

To establish the validity and reliability of this survey we need to match your responses to surveys that you will complete in the next few weeks or months. One way to do this is to ask for your name, social security number or some other identifying characteristic that we could track over time. Doing this, however, would spoil the anonymity promised you.

To facilitate our need to match information while maintaining your anonymity, we want you to create a code name. We'll tell you how to create it, so you won't have to commit it to memory.

Your code should be the first two letters of your father's first name followed by the first

two letters of your mother's first name followed by the day of the month your were born.

For example: If your father's first name is **Jim** your mother's first name is **Carole**, and your birthday falls on the **20th** of June, then your code would be **JICA20**. Please write your code name in the spaces provided below.

First two letters of Father's first name		First two letters of Mother's first name		Birth Day (do not include the month or year)	

This completes the Upward Feedback questionnaire.

THANK YOU FOR YOUR PARTICIPATON!

Do you have any suggestions on ways to improve this survey?

Please write any comments you have below.

Appendix B. Leader Self-Assessment and Upward Feedback Instrument

Leader Self Assessment

(put label here)

Please read each statement carefully and indicate the extent you engage in each of the behaviors. Answer in terms of how you typically act with and on behalf of your unit. Use the blank space at the beginning of each statement to record the number of your choice.

Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 1. I seek out suggestions from our customers, suppliers and peers.

____ 2. I willingly try new ideas.

____ 3. I portray our unit as having a real impact on the organization's future.

____ 4. I find out what aspirations, goals and interests my unit members have in common.

____ 5. I assign tasks that require my people to communicate with each other.

____ 6. I allow my people to take risks and fail without negative consequences.

____ 7. I keep my people up to date on critical issues facing the unit.

____ 8. I grant my people the appropriate authority to do their work.

____ 9. I make sure that all members are committed to enforcing the stated values of the unit.

____ 10. I divide large tasks into smaller pieces that are more easily understood and accepted.

____ 11. I publicly reward individual members when they have done a good job.

____ 12. I cheer actions that are consistent with achieving our unit's goals.

____ 13. I take my work seriously, but I don't take myself too seriously.

____ 14. I take advantage of lulls in the schedule for relaxing and fun activities.

____ 15. I encourage my people to look outside our work group to find better ways of doing things.

____ 16. I promote new ways of doing things that might make us more effective.

Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 17. I clearly explain my vision of the team's future.

____ 18. I set unit goals that appeal to my unit's collective values and interests.

____ 19. I encourage my people to work with people outside of our unit.

____ 20. I act in predictable ways so that my people have confidence in my intentions.

____ 21. I give members of my unit important work to do on critical tasks.

____ 22. I allow my people to decide the best way to get their jobs done.

____ 23. I create symbols that remind everyone about the things that the unit holds important.

____ 24. I define tasks so they provide a natural, direct, and automatic source of feedback.

____ 25. I reward only those who meet or exceed challenging standards.

____ 26. I commemorate times that have significance to the history of our unit.

____ 27. I'm not afraid to laugh at myself.

____ 28. I choose informal and relaxing settings to hold stressful meetings.

____ 29. I find opportunities to expand and improve our products and services.

____ 30. I take calculated risks based on my team's capabilities.

____ 31. I point out our team's unique contribution to the overall mission.

____ 32. I help my people to accept unit goals by showing how they are consistent with their own beliefs and values.

____ 33. I break down barriers between people by encouraging interactions across groups.

____ 34. I share credit for successes with my work group members.

____ 35. I include my people when making important decisions.

____ 36. I give my people discretion to allocate resources.

____ 37. I set priorities that are consistent with my unit's values.

____ 38. I set specific and challenging goals that can be met in a relatively short time.

____ 39. I tailor rewards to things each individual values.

Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 40. I celebrate events that are important to the unit's members.

____ 41. I am willing to laugh and have fun with others.

____ 42. I find ways to offset hardships caused by work with some fun outcome or activity.

____ 43. I challenge my people to find ways to improve our performance.

____ 44. I take on tough assignments that are important to the organization.

____ 45. I convey the value of our efforts to meet the organization's goals.

____ 46. I promote common causes that can be supported by all members of the work group.

____ 47. I convince my people to cooperate by pointing out where they agree rather than disagree.

____ 48. I respect each group member's ideas and apply them whenever possible.

____ 49. I make sure that my people have the information needed to make good judgments on their own.

____ 50. I let others know that I have high confidence in their abilities and judgment.

____ 51. I operate in ways that reinforce the unit's fundamental beliefs.

____ 52. I provide clear guidance at the start of each new project.

____ 53. I get out from behind the desk and catch people doing things right.

____ 54. I take time out to publicly recognize our unit's accomplishments.

____ 55. I encourage non-offensive humor as a way to make the workplace more fun.

____ 56. I encourage simple, quick and fun activities that lift spirits at work.

____ 57. I challenge our processes—I ask, "why do we do it this way?"

____ 58. I study every team success and failure for "lessons learned".

____ 59. I communicate why our customers value the quality of our products and services.

____ 60. I explain how personal goals can be met by attaining the group's goals.

____ 61. I persuade my group to help others to succeed in order to build strong cooperative relationships.

____ 62. I show my unit that I am willing to trust their judgment.

Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 63. I make sure work group members get the chance to develop the skills they need to make good decisions.

____ 64. I create a sense of ownership in each member by making public his or her tasks and responsibilities.

____ 65. I take time to teach and emphasize the unit's values.

____ 66. I keep my people focused on the long-term goal while reminding them to take things a step at a time.

____ 67. I say "thank you" to show my appreciation for a job well done.

____ 68. I celebrate milestones as a way to acknowledge progress toward group goals.

____ 69. I set the tone for a friendly, supportive and fun workplace.

____ 70. I take part in social activities organized by unit members.

____ 71. I devote time to consider improvement ideas.

____ 72. I find ways to turn setbacks into learning opportunities.

____ 73. I envision a future for our unit that goes beyond the ordinary.

____ 74. I appeal to each member's desire to contribute to the success of the organization.

____ 75. I foster collaboration by getting people to meet frequently.

____ 76. I avoid blaming others for failures.

____ 77. I delegate tasks that are important to the unit's performance.

____ 78. I set up meetings so members of my unit can discuss their work with senior people in the organization.

____ 79. I act in ways that let everyone know what things are important to our unit.

____ 80. I give feedback in a positive and supportive way.

____ 81. I let my people know that I care about their work performance.

____ 82. I make sure senior leadership knows about our unit's successes.

____ 83. I allow humor to break through during tense moments.

____ 84. I am willing to take a time-out during busy periods to do something fun as a unit.

Air Force Institute of Technology

Upward Feedback Instrument

A survey of leadership behaviors

observed from the subordinates' perspective.

Conducted for

Aeronautical Systems Center

and

Air Force Security Assistance Center

Privacy Notice

The following information is provided as required by the Privacy Act of 1974:

Purpose: To obtain information regarding employee's perceptions of their supervisors leadership behaviors.

Routine Use: The survey results will be used to provide developmental feedback for individual supervisors, and to indicate trends at the organizational level. A final report will be provided to participating organizations. No analysis of individual responses will be conducted and only members of the Air Force Institute of Technology research team will be permitted access to the raw data.

Participation: Participation is VOLUNTARY. No adverse action will be taken against any member who does not participate in this survey or who does not complete any part of the survey.

INSTRUCTIONS

This questionnaire is part of a pilot leadership development program developed by the Air Force Institute of Technology (AFIT) for supervisors at the Aeronautical Systems and Air Force Security Assistance Centers. The upward feedback instrument provides you the opportunity to give your supervisor specific feedback on his or her work behaviors. Your response to this questionnaire will be combined with the responses of other members of your unit. The AFIT team will provide your supervisor feedback on his or her performance. AFIT will also provide guidance to your supervisor to help him or her interpret the feedback, develop plans to act on the feedback, and then share the action plans with you. You might be randomly selected to complete a second survey in a couple of weeks so that the AFIT team can assess the reliability of this measure. In a few months, you will be asked to complete a questionnaire to assess the extent you believe your supervisor received, interpreted, communicated and acted on the feedback that your unit provided.

Several steps have been taken to protect your anonymity and ensure that your supervisor cannot identify your survey responses. First, you will not be asked to provide any information that could be used to identify you. We will not ask for your name, grade, age, experience, race, or gender at any time. Second, your supervisor will receive an assessment of his or her work behaviors based on the combined scores of all the people in your unit that participated. In order to protect your privacy, a minimum of three people in your unit must respond for your supervisor to receive any feedback at all. Third, no one other than your supervisor will receive a copy of his or her feedback. This protects the supervisor's privacy. Finally, you will mail your response directly to the AFIT survey control point. No one in your organization will see your completed survey.

Although we do not want to know your identity, we do need to be able to match your responses to future surveys. On the last page of this questionnaire, you will be asked to create a code that will help us match your responses over time while ensuring your privacy.

Please contact us if you have any questions about this survey. We thank you for your participation

Upward Feedback for

(put label here)

Please read each statement carefully and indicate the extent you have observed your supervisor doing each of the behaviors. Answer in terms of how your supervisor typically acts with you, with people in your unit, and on behalf of you and your unit. Use the blank space at the beginning of each statement to record the number of your choice.

Not Observed 0	Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 1. Seeks out suggestions from customers, suppliers and peers.

____ 2. Willingly tries new ideas.

____ 3. Portrays our unit as having a real impact on the organization's future.

____ 4. Finds out what aspirations, goals and interests unit members have in common.

____ 5. Assigns tasks that require us to communicate with each other.

____ 6. Allows us to take risks and fail without negative consequences.

____ 7. Keeps us up to date on critical issues facing the unit.

____ 8. Grants us the appropriate authority to do our work.

____ 9. Makes sure that all members are committed to enforcing the stated values of the unit.

____ 10. Divides large tasks into smaller pieces that are more easily understood and accepted.

____ 11. Publicly rewards individual members when they have done a good job.

____ 12. Cheers actions that are consistent with achieving our unit's goals.

____ 13. Takes work seriously, but does not take himself/herself too seriously.

____ 14. Takes advantage of lulls in the schedule for relaxing and fun activities.

____ 15. Encourages us to look outside our work group to find better ways of doing things.

____ 16. Promotes new ways of doing things that might make us more effective.

Not Observed 0	Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 17. Clearly explains his or her vision of the team's future.

____ 18. Sets unit goals that appeal to our collective values and interests.

____ 19. Encourages us to work with people outside of our unit.

____ 20. Acts in predictable ways so that we have confidence in his or her intentions.

____ 21. Gives us important work to do on critical tasks.

____ 22. Allows us to decide the best way to get our jobs done.

____ 23. Creates symbols that remind everyone about the things that our unit holds important.

____ 24. Defines tasks so they provide a natural, direct, and automatic source of feedback.

____ 25. Rewards only those who meet or exceed challenging standards.

____ 26. Commemorates times that have significance to the history of our unit.

____ 27. Not afraid to laugh at himself/herself.

____ 28. Chooses informal and relaxing settings to hold stressful meetings.

____ 29. Finds opportunities to expand and improve our products and services.

____ 30. Takes calculated risks based on our team's capabilities.

____ 31. Points out our team's unique contribution to the overall mission.

____ 32. Helps us accept unit goals by showing how they are consistent with our own beliefs and values.

____ 33. Breaks down barriers between people by encouraging interactions across groups.

____ 34. Shares credit for successes with work group members.

____ 35. Includes us when making important decisions.

____ 36. Gives us discretion to allocate resources.

____ 37. Sets priorities that are consistent with our unit's values.

____ 38. Sets specific and challenging goals that can be met in a relatively short time.

____ 39. Tailors rewards to things we each individually value.

Not Observed 0	Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 40. Celebrates events that are important to the unit's members.

____ 41. Willing to laugh and have fun with others.

____ 42. Finds way to offset hardships caused by work with some fun outcome or activity.

____ 43. Challenges us to find ways to improve our performance.

____ 44. Takes on tough assignments that are important to the organization.

____ 45. Conveys the value of our efforts to meet the organization's goals.

____ 46. Promotes common causes that can be supported by all members of the work group.

____ 47. Convinces us to cooperate by pointing out where we agree rather than disagree.

____ 48. Respects our ideas and applies them whenever possible.

____ 49. Makes sure that we have the information needed to make good judgments on our own.

____ 50. Lets others know that he or she has high confidence in our abilities and judgment.

____ 51. Operates in ways that reinforce the unit's fundamental beliefs.

____ 52. Provides clear guidance at the start of each new project.

____ 53. Gets out from behind the desk and catches people doing things right.

____ 54. Takes time out to publicly recognize our unit's accomplishments.

____ 55. Encourages non-offensive humor as a way to make the workplace more fun.

____ 56. Encourages simple, quick and fun activities that lift spirits at work.

____ 57. Challenges processes—asks, "why do we do it this way"?

____ 58. Studies every team success and failure for "lessons learned".

____ 59. Communicates why our customers value the quality of our products and services.

____ 60. Explains how personal goals can be met by attaining the group's goals.

____ 61. Persuades us to help others to succeed in order to build strong cooperative relationships.

____ 62. Shows he or she is willing to trust our judgment.

Not Observed 0	Almost Never 1	Once in a While 2	Occasionally 3	Sometimes 4	Usually 5	Quite Often 6	Almost Always 7

____ 63. Makes sure we get the chance to develop the skills needed to make good decisions.

____ 64. Creates a sense of ownership in each member by making public our tasks and responsibilities.

____ 65. Takes time to teach and emphasize the unit's values.

____ 66. Keeps us focused on the long-term goal while reminding us to take things a step at a time.

____ 67. Says "thank you" to show his/her appreciation for a job well done.

____ 68. Celebrates milestones as a way to acknowledge progress toward group goals.

____ 69. Sets the tone for a friendly, supportive and fun workplace.

____ 70. Takes part in social activities organized by unit members.

____ 71. Devotes time to consider improvement ideas.

____ 72. Finds ways to turn setbacks into learning opportunities.

____ 73. Envisions a future for our unit that goes beyond the ordinary.

____ 74. Appeals to our desire to contribute to the success of the organization.

____ 75. Fosters collaboration by getting people to meet frequently.

____ 76. Avoids blaming others for failures.

____ 77. Delegates to us tasks that are important to the unit's performance.

____ 78. Sets up meeting so we can discuss our work with senior people in the organization.

____ 79. Acts in ways that let everyone know what things are important to our unit.

____ 80. Gives feedback in a positive and supportive way.

____ 81. Lets us know that he or she cares about our work performance.

____ 82. Makes sure senior leadership knows about our unit's successes.

____ 83. Allows humor to break through during tense moments.

____ 84. Willing to take a time-out during busy periods to do something fun as a unit.

Leaders often want to know which behaviors they should concentrate on first. We would like to help point your supervisor to the behaviors that his or her people consider to be the most important. Please review your responses and list below the numbers of the five most important behaviors that you want your supervisor to perform more often.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Another way to help leaders focus their attentions is to show that their behaviors are related to specific outcomes. Please use the scale below to indicate the extent you agree with the following statements of outcomes.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

____ 1. Overall, I am satisfied with my supervisor.

____ 2. Overall, I am satisfied with my unit.

____ 3. My supervisor is one of the best leaders I have ever known.

____ 4. My unit is one of the best places I have ever worked.

____ 5. Members of my unit work together very well.

____ 6. I have a very good relationship with my supervisor.

____ 7. Other members of my unit have a very good relationship with my supervisor.

____ 8. My supervisor has a very good relationship with the customers of our products and services.

____ 9. My unit has a very good relationship with the customers of our products and services.

____ 10. Leaders in our organization think my supervisor is quite effective.

____ 11. Leaders in our organization think my unit is quite effective.

To establish the validity and reliability of this survey we need to match your responses to surveys that you will complete in the next few weeks or months. One way to do this is to ask for your name, social security number or some other identifying characteristic that we could track over time. Doing this, however, would spoil the anonymity promised you.

To facilitate our need to match information while maintaining your anonymity, we want you to create a code name. We'll tell you how to create it, so you won't have to commit it to memory.

Your code should be the first two letters of your father's first name followed by the first two letters of your mother's first name followed by the day of the month your were born.

For example: If your father's first name is **Jim** your mother's first name is **Carole**, and your birthday falls on the **20th** of June, then your code would be **JICA20**. Please write your code name in the spaces provided below.

First two letters of Father's first name		First two letters of Mother's first name		Birth Day (do not include the month or year)	

This completes the Upward Feedback questionnaire.

THANK YOU FOR YOUR PARTICIPATON!

Do you have any suggestions on ways to improve this survey?

Please write any comments you have below.

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14. ABSTRACT

Recently, organizations have been modifying performance appraisal systems to collect data from multiple sources to guide the development of supervisors. Upward feedback programs focus on development rather than appraisal by supplementing traditional downward feedback with subordinate feedback. The upward feedback instrument developed in this study was designed to measure effective leadership behaviors utilizing an existing five-dimension leadership taxonomy and a new dimension that represents creating a fun workplace.

The developed instrument and a proven commercial instrument utilizing the same theoretical framework were administered to samples of $N = 391$ and $N = 417$ respectively, and tested for reliability and validity. Scale reliability of both instruments was assessed utilizing internal reliability and test-retest analysis. The validity of the commercial instrument was assessed using factor analysis, and the developed instrument validity was assessed using nested model confirmatory factor analysis. The instruments were compared using correlational analysis. Results for the commercial instrument provided limited support for the instrument's external validity. Results for the developed instrument provided limited support for the instrument's ability to validly measure effective leadership behaviors and, limited support for a distinct "Have Fun" dimension. The instruments' scales were generally highly correlated.

15. SUBJECT TERMS: Upward Feedback, Multi-rater Feedback, Supervisor Development, Leadership, Leadership Training, Supervisors, Management Personnel

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Paul W. Thurston, Maj, USAF (LSB)
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