

## ABSTRACT

LINDBERG, JENNIFER TRICIA. The Relative and Incremental Validity of the Big Five and Maladaptive Personality Characteristics for Predicting Leadership Effectiveness. (Under the direction of S. Bartholomew Craig.)

Although previous research has examined “bright” personality characteristics that impact leadership effectiveness through their presence, there is a growing recognition of the importance of factors that promote leadership effectiveness through their *absence* (e.g., Hogan & Hogan, 2001; McCall & Lombardo, 1983). These “dark” or maladaptive personality characteristics have been hypothesized to interact with the length of time that an observer has been exposed to a given manager (Hogan & Hogan, 1997, 2001). In the current study, the relative and incremental validity of the Big Five and maladaptive personality characteristics in predicting leadership effectiveness was examined, as well as the moderating effect of leader-subordinate relationship length. Although previous research has examined “bright” and “dark” personality characteristics in the prediction of leadership effectiveness (e.g., Fecteau & Van Landuyt, 2005; Judge, Bono, Illies, & Gerhardt, 2003), this study was the first attempt to examine both types of personality characteristics in the prediction of leadership effectiveness, in addition to the moderating role of relationship length. Personality data were collected from a sample of supervisors ( $N = 134$ ), and their direct reports ( $N = 330$ ) provided concurrent ratings of their supervisors’ effectiveness. The multiple regression analyses revealed that the Big Five and maladaptive personality characteristics did not predict leadership effectiveness. In addition, the Big Five personality dimensions did not demonstrate incremental validity over and above the maladaptive characteristics, nor did the maladaptive characteristics demonstrate incremental validity over and above the Big Five personality dimensions in the prediction of leadership effectiveness. Finally, the relation

between the maladaptive personality characteristics and leadership effectiveness did not vary as a function of leader-subordinate relationship length, contrary to the predictions of previous theoretical work (Hogan & Hogan, 2001).

The Relative and Incremental Validity of the Big Five and Maladaptive Personality  
Characteristics for Predicting Leadership Effectiveness

by

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## DEDICATION

This body of work is dedicated, in loving memory, to my Grandpa, John W. Lindberg, who taught me the value of hard work and the importance of being dedicated to one's vocation.

## BIOGRAPHY

Jennifer Tricia Lindberg was born November 11, 1980 in Bloomsburg, PA. She lived in Nescopeck, PA until her family moved to Huntersville, NC in 1995. Jennifer graduated from North Mecklenburg High School in Huntersville, NC in 1999 and began her undergraduate studies at Peace College in the fall of that year. She graduated summa cum laude in 2003 with Bachelor of Art degrees in Psychology and Leadership Studies and a minor in Human Resources.

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## TABLE OF CONTENTS

LIST OF TABLES .....	vii
Section I: Literature Review .....	1
<i>The Big Five Dimensions of Personality</i> .....	1
<i>The Dark Side</i> .....	3
<i>Leader-subordinate Relationship Length</i> .....	12
<i>Research Questions and Hypotheses</i> .....	13
Section II: Method .....	14
<i>Participants</i> .....	14
<i>Measures</i> .....	15
<i>Procedure</i> .....	18
Section III: Results .....	19
Section VI: Discussion .....	24
<i>Limitations</i> .....	27
<i>Directions for Future Research</i> .....	28
Section V: References .....	30
Section VI: Appendix .....	37
Appendix: Leadership Effectiveness Questionnaire .....	38

## LIST OF TABLES

	Page
Table 1. Overlapping Themes from the Hogan Development Survey (HDS) and <i>DSM IV</i> , Axis 2 Personality Disorders.....	41
Table 2. Description of Seven Primary Scales of the Hogan Personality Inventory (HPI).....	44
Table 3. Descriptive Statistics for the Big Five Personality Characteristics (HPI) .....	45
Table 4. Descriptive Statistics for the Maladaptive Personality Characteristics (HDS).....	46
Table 5. Correlations between HPI and HDS Scales.....	47
Table 6. Descriptive Statistics for Leadership Effectiveness by Scale Item.....	48
Table 7. Factor Loadings for Leadership Effectiveness Items.....	49
Table 8. Summary of Regression Analysis for the HPI and HDS Predicting Ratings of Leadership Effectiveness.....	50
Table 9. Summary of Hierarchical Regression Analysis for Incremental Validity of the Big Five .....	51
Table 10. Summary of Hierarchical Regression Analysis for Incremental Validity of the Maladaptive Characteristics.....	52
Table 11. Summary of Moderated Regression Analyses Predicting Leadership Effectiveness by Leader-Subordinate Relationship Length.....	53

## Section I: Literature Review

*The Big Five Dimensions of Personality*

Although there has been some controversy regarding the validity of using personality instruments for organizational practices such as personnel selection (see Guion & Gottier, 1963), the use of personality measures as predictors of a wide range of organizational phenomena such as performance has become more generally accepted in recent years (R. Hogan, J. Hogan, & Roberts, 1996; Mount, Barrick, & Strauss, 1994). Further, many researchers now agree that there are five robust personality factors that can be used to classify personality attributes (Digman, 1990). This “Big Five” model of normal human personality, also referred to as the Five-Factor model (FFM) of personality, includes the following factors and personality characteristics: (1) agreeableness (good-natured, cooperative, and trusting); (2) conscientiousness (responsible, dependable, organized, persistent, and achievement-oriented); (3) emotional stability (calm, secure, and not nervous); (4) extraversion (sociable, talkative, assertive, ambitious, and active); and (5) openness to experience (imaginative, artistically sensitive, and intellectual). However, it should be noted that the FFM of personality is not without controversy. For example, Block (1995) has argued that the five factors were derived by lexical methods that are based on questionable conceptual and methodological assumptions.

Meta-analytic research (e.g., Barrick & Mount, 1991; Hough, Eaton, Dunnette, Kamp, & McCloy, 1990) has suggested that only one Big Five factor, conscientiousness, is a valid predictor for all occupational groups and job-related criteria studied (i.e., job proficiency, training proficiency, and personnel data). In contrast, the other Big Five factors were valid predictors for only some occupations and criteria. For example, extraversion was

a valid predictor of two occupations involving social interactions, managers and sales (Barrick & Mount, 1991). Despite the variability of the Big Five in predicting job performance criteria for a variety of occupational groups, Mount and Barrick (1998) maintained that previous research findings regarding the Big Five have numerous implications for research and practice in personnel psychology, such as the prediction of leadership effectiveness.

*Leadership effectiveness.* According to R. Hogan, Raskin and Fazzini (1990), the success of any organization is often contingent on the effectiveness of organizational leaders. Thus, examining the link between personality characteristics and leadership effectiveness is necessary for a complete understanding of the role of personality in organizational outcomes. Previous research (i.e., Bentz, 1985; House, 1977; Howard & Bray, 1988; Stogdill, 1948) has explored the link between leader personality and effectiveness. For example, in a recent meta-analysis examining 78 studies of the relation between personality and leadership, Judge, Bono, Ilies, & Gerhardt (2002) found evidence to suggest that all five of the Big Five factors of personality were related to overall leadership emergence and effectiveness. Leadership emergence refers to whether or not and to what degree an individual is perceived to be a leader by other individuals who typically have limited information about the individual's performance (Judge et al., 2002). In contrast, leadership effectiveness is described as a leader's performance in influencing and guiding a unit's activities toward goal achievement (see Stogdill, 1950). Judge et al. found true correlations of at least .24 for each of the five factors with the exception of agreeableness ( $r = .08$ ). Furthermore, Judge et al. determined that the five factors collectively explained 53% of the variance in leadership emergence and 39% of the variance in leadership effectiveness.

Thus, based on previous research regarding the relation between personality and leadership, it seems clear that leader personality is predictive of various measures of leadership effectiveness (R. Hogan & Kaiser, 2005). However, past research has tended to focus on positive or “bright” aspects of personality that increase effectiveness by their presence. There is a growing recognition of the importance of negative or “dark” personality characteristics that increase effectiveness by their *absence* (R. Hogan & J. Hogan, 2001). But, interestingly, only limited empirical research has been conducted with regard to the maladaptive side of personality in predicting leadership effectiveness. Therefore, although the current study will examine both the normal and maladaptive sides of personality in predicting leadership effectiveness, the primary contribution of this study lies in its emphasis on the maladaptive side of personality. Furthermore, it should be noted that the terms “leader,” “supervisor,” and “manager” will be used interchangeably in the paragraphs that follow.

### *The Dark Side*

In general, the limited number of empirical investigations regarding the dark side of managerial behavior has fallen along five lines of research: managerial incompetence, career derailment, the dark side of charismatic leadership, the dark side of transformational leadership, and maladaptive leader personality.

*Managerial incompetence.* Previous research has suggested that managerial incompetence is salient in organizations. For example, estimates of the base rate for managerial incompetence ranged from 30% to 75%, with a recent review by DeVries and Kaiser (2003) reporting that the base rate for managerial incompetence in the corporate world was, on average, 50%. Historically, managerial incompetence has been conceptualized in

terms of performance-related deficits or lacking the characteristics necessary for success (R. Hogan & Kaiser, 2005). However, R. Hogan and Kaiser postulated that managerial incompetence may also be related to the presence of undesirable qualities, perhaps more so than performance-related deficits.

*Career derailment.* In addition to research regarding incompetence, previous research has examined the prevalence of managerial failure or derailment, terms used to describe an individual who is demoted, involuntarily leaves the organization (i.e., is terminated), or is unable to attain an expected level of success (Leslie & Van Velsor, 1996). For example, Bentz (1985) pioneered a 30-year longitudinal study of the factors associated with managerial success by interviewing both successful and failed managers at Sears & Roebuck. Interestingly, Bentz identified a series of characteristics that were common to successful managers and in addition, articulated a different series of performance-related deficits and factors that were common among the derailed managers. The successful managers demonstrated characteristics such as social assuredness, ambition, persuasiveness, and needs for money, power, and status. On the other hand, the failed managers displayed the following seven performance-related deficits: (1) inability to delegate or prioritize tasks; (2) being reactive rather than proactive; (3) inability to maintain relationships with an extensive network of individuals; (4) inability to build a team; (5) exercising poor judgment; (6) being a slow learner; and (7) demonstrating some type of personality defect.

Numerous researchers from the Center for Creative Leadership (CCL) replicated and extended Bentz's original research to identify a series of antecedents and consequences associated with managerial derailment. McCall and Lombardo (1983) interviewed approximately 20 successful senior managers and 20 derailed senior managers in their study

of performance-related deficits and leadership effectiveness. The researchers found that the derailed managers suffered from numerous performance problems, were insensitive to others, failed to delegate or build a team, and were overly dependent on a particular mentor (McCall & Lombardo, 1983). Thus, McCall and Lombardo confirmed similar themes of managerial derailment from the Bentz (1985) research and provided additional support for the notion that managerial derailment was perhaps a function of lacking positive personality characteristics while also displaying negative personality characteristics. However, leader personality was not examined directly in the McCall and Lombardo study.

Given that the previous study included only male participants, Morrison, White, and Van Velsor (1987) replicated the McCall and Lombardo (1983) study to identify characteristics associated with the derailment of female managers. Morrison et al. were able to identify four themes associated with the derailment of the female managers in their study. These themes included: (1) inability to adapt to new changes in the workplace; (2) performance problems such as the inability to meet the expectations of supervisors and making costly errors; (3) being overly ambitious by continuously searching for promotions or salary increases; and (4) other factors including the inability to lead subordinates, lack of strategy, and having poor working relationships with other individuals (Morrison et al., 1987).

In an additional derailment study from researchers at CCL, Lombardo and McCauley (1988) conducted a factor analysis of performance ratings from the superiors of the managerial participants using the questionnaire from the McCall and Lombardo (1983) study. The original themes identified by McCall and Lombardo were grouped into the following six categories using factor analysis: (1) problems with interpersonal relationships; (2) difficulty

in organizing a staff of individuals; (3) problems with strategizing; (4) lack of follow-through; (5) overdependence on certain individuals; and (6) strategic differences with management (Lombardo & McCauley, 1988).

Lastly, Leslie and Van Velsor (1996) conducted an additional replication study to determine if the themes derived from previous derailment studies would emerge in a sample of U.S. and European managers. Leslie and Van Velsor identified 10 factors that contributed to managerial derailment in both samples of managers. In general, the themes identified in the current study overlapped with the themes of managerial derailment identified in the previous CCL derailment studies. Furthermore, Leslie and Van Velsor determined that poor working relations and the inability to develop or adapt to change were cited in over 50% of the cases in both samples of participants as the leading factors associated with managerial derailment. Thus, Leslie and Van Velsor were able to summarize the previous research on managerial derailment in terms of the following four themes: (1) problems with interpersonal relationships that might be due to being cold or overly ambitious; (2) failure to meet business objectives by demonstrating poor performance or not following through; (3) inability to build a team; and (4) inability to adapt to a transition (i.e., conflict with upper management). Although previous research on managerial derailment has focused on performance-related deficits that may be rooted in leader personality traits, including some deficits that are political in nature, the aforementioned CCL derailment studies did not directly examine the dark side of leader personality.

*Dark side of charismatic leadership.* Research in the area of charismatic leadership has also examined the dark side of managerial behavior. Howell and Avolio (1992) examined the behavioral differences evidenced by ethical and unethical charismatic leaders by

surveying more than 150 managers in 25 large Canadian organizations and identifying 25 charismatic leaders for participation in their study. Based on their interviews with the charismatic leaders, Howell and Avolio were able to distinguish between ethical charismatics and unethical charismatics.

Ethical charismatics were characterized by the following seven behaviors: (1) uses power to serve others; (2) aligns vision with followers' needs and aspirations; (3) considers and learns from criticism; (4) stimulates followers to think independently and to question the leader's view; (5) uses open, two-way communication; (6) coaches, develops, and supports followers and shares recognition with others; and (7) relies on internal moral standards to satisfy organizational and societal interests. In contrast, unethical charismatics displayed the following seven behaviors: (1) uses power only for personal gain or impact; (2) promotes own personal vision; (3) censures critical or opposing views; (4) demands own decisions be accepted without question; (5) uses one-way communication; (6) is insensitive to followers' needs; and (7) relies on convenient external moral standards to satisfy self-interests (Howell & Avolio, 1992). Howell and Avolio noted that the differences in the behavioral displays between ethical and unethical charismatics had differential effects on the leaders' followers; thus, in their opinion, charismatic leaders should be carefully selected and promoted. In addition to Howell and Avolio, Popper (2002) found empirical support for the distinction between socialized charismatic leaders (SCL; i.e., ethical charismatics) and personalized charismatic leaders (PCL; i.e., unethical charismatics). He determined that narcissism was a major personality variable that distinguished between SCLs and PCLs.

*Dark side of transformational leadership.* Bass and Steidlmeier (1999) distinguished between authentic transformational leadership and pseudo-transformational leadership in

their theoretical manuscript on the morality of transformational leadership behavior. The authors argued that in order to be a truly transformational leader, one's leadership must be based on moral foundations. According to Bass and Steidlmeier, both authentic and pseudo-transformational leaders utilized the following four components of transformational leadership: (1) idealized influence (or charisma); (2) inspirational motivation; (3) intellectual stimulation; and (4) individualized consideration. However, the authors noted that pseudo-transformational leaders frequently used the four components in a deceptive and manipulative manner.

*Maladaptive personality traits.* Recent empirical research (e.g., Babiak, 2000; Gustafson & Ritzer, 1995) has investigated the prevalence of personality disorders such as psychopathy in managers. Psychopathy is a personality disorder characterized by two factors (Harpur, Hare, & Hakstian, 1989, p. 7). Factor one is described as the “selfish, callous, and remorseless use of others.” This factor reflects the personality characteristics at the core of psychopathy such as grandiosity, pathological lying and deception, superficial charm, lack of empathy, guilt, or remorse, failure to accept responsibility, and shallow affect (Harpur et al., 1989). In contrast, Factor two is characterized as a “chronically unstable and antisocial lifestyle.” The second factor of psychopathy describes socially deviant behavior, such as sensation seeking, parasitic lifestyle, poor behavioral controls, impulsivity, and a lack of realistic plans for the future (Harpur et al., 1989).

Additional research on the maladaptive side of managerial personality has focused on identifying subclinical forms of psychopathy in the workplace. The purpose of this research has been to close the conceptual gap between clinical psychopaths, who frequently interact with the mental health and legal systems, and subclinical psychopaths who function

'normally' in the workplace (Gustafson & Ritzer, 1995). Subclinical psychopaths are not severely disordered enough to be classified as clinical psychopaths. As a result, subclinical psychopaths may come into contact with the therapeutic community or the criminal justice system intermittently, if at all, making this group of individuals more difficult to study empirically (Gustafson & Ritzer, 1995). For example, Gustafson and Ritzer examined a subclinical form of psychopathy referred to as aberrant self-promotion (ASP). ASPs are similar to psychopaths in kind but are less severe than psychopaths in the degree of their psychopathy. They are characterized by a narcissistic personality configuration in combination with antisocial behavior and exhibit characteristics such as exploitativeness, entitlement, grandiosity, superficial charm, manipulativeness, need for dominance, lack of empathy, and lack of guilt (Gustafson & Ritzer, 1995).

In their study of undergraduates, Gustafson & Ritzer (1995) were able to support "the validity of aberrant self-promotion as a distinct psychological syndrome similar to psychopathy" (p. 178). Not only did the ASPs in their study not meet the overall criterion score for a clinical diagnosis of psychopathy, but they also did not exhibit as severe a degree of antisocial behavior on Factor two as did clinical psychopaths. The researchers noted that the negative aspects of the ASP profile must not be minimized because these individuals are often able to use charm or intimidation in the context of interviews or, in this case, academic settings to achieve personal goals. Thus, ASPs are not unlike other individuals who evidence maladaptive personality characteristics that are initially difficult to detect in the workplace, as the discussion below indicates.

In addition to Gustafson and Ritzer (1995), Babiak (2000) has examined psychopathic manipulation in the workplace. Babiak noted that industrial psychopaths, an additional

perspective on the notion of subclinical psychopaths, scored extremely high on Factor one, the psychopathic personality component, but, in contrast, scored only moderately high on Factor two or the socially deviant or nomadic lifestyle component of psychopathy. These individuals exhibited the personality traits of clinical psychopaths but did not engage in antisocial acts to the same degree.

Based on the managerial derailment literature and research conducted on subclinical forms of psychopathy, one may conclude that the maladaptive side of managerial leadership is often associated with lacking positive qualities, in addition to demonstrating negative personality characteristics (R. Hogan & J. Hogan, 2001; R. Hogan & Kaiser, 2005). In addition to studies that have examined factors associated with derailment and explored subclinical forms of psychopathy in the workplace, other research has explicitly focused on methods for assessing maladaptive characteristics.

*Assessing the maladaptive side of leader personality.* Hare (1985, 1991) developed the Psychopathy Checklist (PCL), an innovative instrument used by individuals who conduct research on psychopaths. The PCL is a measure that involves an in-depth structured interview following a detailed interview protocol and an examination of a participant's history of antisocial acts, typically in the form of a criminal record (Babiak, 2000). The interviewer completes the PCL after conducting an interview with the participant and calculating a total psychopathy score, a Factor 1 (i.e., psychopathic personality component) score, and a Factor 2 (i.e., deviant lifestyle component) score. Although Harpur and Hare (1989) later developed the Self-Report of Psychopathy II (SRP II), the revised version of the PCL (PCL-R) is still the most widely accepted instrument and interview for diagnosing psychopathy, having also been used in research on ASPs (Gustafson & Ritzer, 1995).

However, in settings where the unwieldiness of the PCL-R interview and its emphasis on clinical diagnosis are problematic, the SRP II enables researchers to use a paper instrument to assess psychopathy in normal populations without excessive difficulty.

More recently, R. Hogan and J. Hogan (1997) developed a measure of maladaptive personality called the Hogan Development Survey (HDS). The HDS is based on the Diagnostic and Statistical Manual of Mental Disorders (*DSM-IV*), Axis 2 personality disorders (APA, 1994), on the 11 reoccurring themes in the managerial derailment literature, and on subordinate evaluations of their first-line supervisors (see Millikin-Davies, 1992, as cited in R. Hogan & J. Hogan, 1997). Table 1 displays the 11 dimensions of the HDS, which overlap substantially with the *DSM-IV*, Axis 2 personality disorders but have been couched in less clinical language to facilitate their use in organizations. The HDS will be used in the current study to assess maladaptive personality traits; thus, more extensive information regarding the reliability and validity of this measure is described in the Method section.

Focusing more on managers' observed behavior, Craig and Gustafson (1998) assessed subordinates' global perceptions of their immediate supervisors' integrity in organizational settings with the creation of the Perceived Leader Integrity Scale (PLIS). The PLIS measures observers' global integrity perceptions through discrete, destructive behaviors in which a leader might engage, with 83.9% of the variance in global integrity perceptions accounted for by the mean of the behavioral items. In both a student sample and an organizational sample, the internal consistency of the PLIS was high and stable ( $\alpha = .97$ ). Furthermore, evidence of convergent validity for the PLIS was found in the instrument's correlation with a measure of job satisfaction ( $r = .54, p < .05$ ). Thus, the PLIS demonstrates another method of examining leadership effectiveness through followers' perceptions of the

integrity of their leaders. Clearly then, some empirical research has been conducted to determine methods of identifying, diagnosing, and measuring the darker side of leadership in the workplace.

### *Leader-subordinate Relationship Length*

Interestingly, the maladaptive side of managerial leadership has been hypothesized to interact with the length of time that an observer has been exposed to a given manager to produce undesirable outcomes. As R. Hogan and J. Hogan (1997, 2001) and R. Hogan and Kaiser (2005) note, the 11 themes of managerial derailment can co-exist with well-developed social skills that tend to make positive impressions on other individuals. As a result, these maladaptive facets of a manager's personality may be difficult, if not impossible, to detect during a job interview or in an assessment center (R. Hogan & J. Hogan, 2001). Therefore, in the short-term, facets of the maladaptive side of managerial leadership may be perceived as strengths, whereas after extended exposure these characteristics become more likely to be perceived as weaknesses (R. Hogan & Kaiser, 2005). For example, the Excitable dimension of the HDS (R. Hogan & J. Hogan, 1997) is likely manifested in terms of strengths such as energy and enthusiasm in the short-term. However, in the long-term, those managers who are "excitable" will likely display emotional outbursts and volatility to their employees (R. Hogan & Kaiser, 2005), resulting in increasingly negative evaluations.

As a result, coworkers may not detect managers' maladaptive personality characteristics—or may not evaluate them negatively—until a period of time has elapsed. R. Hogan and J. Hogan (2001) speculated that a manager's subordinates will be the first to detect the maladaptive personality characteristics of their manager when the manager lets his guard down in the presence of his staff (R. Hogan & J. Hogan, 2001). However, no previous

empirical investigations have examined these claims regarding the detection of managers' maladaptive personality characteristics over a period of time by the managers' subordinates. Although Fecteau and Van Landuyt (2005) determined that leader maladaptive personality characteristics, as assessed by the HDS (R. Hogan & J. Hogan, 1997), accounted for 10% to 21% of the variance in leaders' performance, their study did not examine the incremental validity of maladaptive leader personality above and beyond normal leader personality nor did their study examine the interaction between maladaptive leader personality and leader-subordinate relationship length. Thus, in order to explore the relation between the maladaptive side of personality and leader-subordinate relationship length, the current study will examine the interaction between the maladaptive characteristics of managers and the length of the subordinates' relationships with their managers.

#### *Research Questions and Hypotheses*

The proposed study seeks to determine the relative and incremental validity of both the Big Five and maladaptive personality characteristics in predicting ratings of leadership effectiveness. In addition, the moderating effect of leader-subordinate relationship length was examined. I expected that the maladaptive characteristics would become more predictive of leadership effectiveness as leader-subordinate relationship length increased. Thus, the current study addressed the following research questions:

Question 1: What is the relative validity of the Big Five and maladaptive personality characteristics in predicting subordinates' ratings of leadership effectiveness?

Question 2: Do maladaptive personality characteristics contribute incrementally to the prediction of leadership effectiveness above the Big Five personality traits?

As mentioned previously, prior theoretical work suggests that maladaptive characteristics are initially more difficult to detect and take on greater importance in relationships over time (R. Hogan & J. Hogan, 1997, 2001; R. Hogan & Kaiser, 2005). Thus, I expected a moderating effect for the length of subordinates' relationships with their managers.

Hypothesis 1: Leader-subordinate relationship length will interact with leaders' maladaptive personality characteristics such that maladaptive characteristics will be more strongly (i.e., negatively) related to effectiveness ratings as relationship length increases.

## Section II: Method

### *Participants*

Participants in this study were 134 supervisors employed by a variety of organizations. The supervisors were recruited to participate from the line, middle, and senior management levels of their respective organizations. Of the total number of supervisory participants, 79 (59%) were supervisors of students in introductory psychology courses at a large, southeastern university. The introduction to psychology students received course credit for their own participation in this study and for the participation of their supervisors and co-workers. Of the supervisory participants who reported their gender, 91 (67.9%) were males and 41 (30.6%) were females. Two participants did not report their gender. The supervisors ranged in age from 18 years to 62 years ( $M = 38.49$ ). Sixty (44.8%) supervisors did not report their age. With regard to ethnicity, 39.6% were White, with Black (5.2%), Asian (4.5%), Hispanic (3.7%), and "Other" (1.5%) also represented. Sixty-one (45.5%) of the supervisory participants did not report their ethnicity.

In addition to the supervisory participants, the subordinates (i.e., direct reports) of each participating supervisor were asked to evaluate their supervisors' leadership effectiveness. A total of 330 subordinates participated in this study, with an average of 2.46 subordinate raters for each participating supervisor. The mean relationship length for subordinates and their supervisors was 28.61 months ( $SD = 42.46$ ; Med = 14.95). Of the total number of subordinate participants, 79 (23.9%) were introduction to psychology students and 123 (37.3%) were co-workers of the students mentioned previously. The participating students' co-workers were supervised by the same individuals as the introduction to psychology students. The subordinate participants were not asked to report any demographic information.

### *Measures*

In the current study, each supervisory participant completed the Hogan Personality Inventory (HPI; R. Hogan & J. Hogan, 1995) and the HDS (R. Hogan & J. Hogan, 1997). Further, each participating subordinate was asked to report the length of the relationship (in years, months, and weeks) with his or her current supervisor and to evaluate the supervisor's leadership effectiveness using a 12-item measure developed for use in this study.

*Big Five personality dimensions.* The Big Five personality characteristics of the participants were assessed using the HPI, a 206-item true-false self-report inventory that is designed to predict occupational performance (J. Hogan & Holland, 2003; R. Hogan & J. Hogan, 1995). The supervisory participants' scores on the scales of the HPI represented a series of predictors in the present study. As noted by R. Hogan and J. Hogan, the seven primary scales of the HPI, presented in Table 2, are composed of 41 "homogenous item clusters" (HICs), short scales of homogenous clusters of items that reflect facets of the

primary scales of the inventory. The seven scales of the HPI are aligned with unipolar adjective markers of the Big Five (Goldberg, 1992) as follows: Emotional Stability correlates with the HPI Adjustment scale ( $r = .70$ ); Surgency correlates with the HPI Ambition ( $r = .55$ ) and Sociability scales ( $r = .44$ ); Agreeableness correlates with the HPI Likeability scale ( $r = .56$ ); Conscientiousness correlates with the HPI Prudence scale ( $r = .36$ ); and Intellect correlates with the HPI Intellectance ( $r = .33$ ) and School Success scales ( $r = .35$ ).

The internal consistency (i.e., coefficient alpha; Cronbach, 1951) of the HPI scales has been reported as follows: Adjustment = .89, Ambition = .86, Sociability = .83, Likeability = .71, Prudence = .78, and Intellectance = .78 (R. Hogan & J. Hogan, 1995). Test-retest reliabilities for the scales over a time period of at least four weeks were as follows: Adjustment = .86, Ambition = .83, Sociability = .79, Likeability = .80, Prudence = .74, and Intellectance = .83 (R. Hogan & J. Hogan, 1995).

In the current study, participants' scores on the HPI Ambition and Sociability scales were averaged in order to provide an assessment of participants' extraversion. The School Success scale was not utilized in this study because it mainly concerns one's academic performance and has only minimal interpersonal implications (R. Hogan & J. Hogan, 1995).

*Maladaptive leader personality traits.* The maladaptive personality characteristics of the participating supervisors were assessed using the HDS (R. Hogan & J. Hogan, 1997). In addition to their scale scores on the HPI, the supervisors' scale scores on the HDS represented a second series of predictor variables in the present study. The HDS contains 168 items scored for 11 scales, each containing 14 items. The respondents were asked to either agree or disagree with each item (R. Hogan & J. Hogan, 1997).

According to R. Hogan and J. Hogan (1997) and Fico, R. Hogan, and J. Hogan (2000), the coefficient alphas (Cronbach, 1951) for the HDS scales ranged from .50 (Dutiful) to .78 (Excitable), with an average coefficient alpha of .67. In addition, test-retest reliabilities for a sample of 60 graduate students over a three-month time interval ranged from .58 (Leisurely) to .87 (Excitable), with an average coefficient alpha of .68. Finally, Fico et al. reported that in an archival sample ( $N = 10,305$ ), the average HDS scale scores were similar between men and women, between different racial and ethnic groups, and between younger and older individuals.

R. Hogan and J. Hogan (1997) provided evidence of the construct validity of the HDS by correlating the 11 scales of the HDS with other measures of personality and motivation such as the HPI (R. Hogan & J. Hogan, 1995), the Minnesota Multiphasic Personality Inventory (MMPI; Morey, Waugh, & Blashfield, 1985), and the Motives, Values, Preferences Inventory (MVPI; J. Hogan & R. Hogan, 1996). In general, R. Hogan and J. Hogan were able to demonstrate an appropriate pattern of external correlations for each scale.

*Leader-subordinate relationship length.* Leader-subordinate relationship length represented the moderator variable in the present study. Leader-subordinate relationship length was operationalized as the number of months each subordinate directly reported to his or her current supervisor. The participating subordinates were asked to respond to the following item: "How many years, months, and weeks have you reported to your current supervisor?" The numbers of years, months, and weeks reported by each subordinate were converted to the number of months.

*Leadership effectiveness.* The mean leadership effectiveness rating for each participating supervisor represented the criterion variable in the analyses. Overall leadership

effectiveness was operationalized as the mean response across the items on the effectiveness measure.

A 12-item leadership effectiveness measure was developed by the researcher for use in the current study. The measure was constructed based on the lower-order factor structure derived by Scullen, Mount, and Judge (2003) in their study on the factor structure of developmental ratings of managerial performance. Scullen et al. determined that four performance factors, Technical Skills, Administrative Skills, Human Skills, and Citizenship Behaviors, were conceptually and empirically distinguishable rating factors and found that these four lower-order factors generalized across rater perspectives (i.e., supervisor, peer, subordinate, and self) and rating instruments. Thus, the measure of leadership effectiveness developed for the present study utilized the four lower-order factors derived by Scullen et al. (2003) as its conceptual basis. A description of the response scale, questionnaire directions, and the managerial performance factors and their corresponding items can be found in the Appendix.

### *Procedure*

Data collection began in September 2005 and continued until September 2006. Cross-sectional data were collected concurrently and via the Internet from both supervisors and their subordinates. All of the participants were contacted to participate via e-mail, in which instructions were provided for accessing a website to complete the study questionnaires. In an effort to maximize response rate, each participant was contacted multiple times via e-mail during the data collection period (Dillman, 2000).

For the non-student sample, the participating supervisors were asked to provide the names and contact information for at least two subordinates who could be contacted to

provide ratings of the supervisors' effectiveness. In the student sample, the students themselves provided the name and contact information for at least one additional subordinate who could be contacted to provide ratings of the supervisor's effectiveness. Informed consent was obtained for both supervisory and subordinate participants prior to completing subsequent questionnaires. For the supervisory participants, Hogan Assessment Systems, Inc. provided access to their Internet testing site in order to allow the supervisory participants to complete the HPI and HDS in one administration period or across several administration periods based on the supervisors' discretion. A random user identification number and password was allocated to each supervisor to enable them to access the HPI and HDS online. For the subordinate participants, a website was developed by the researcher to collect data regarding the length of the relationship between each subordinate and his or her current supervisor and the subordinate's ratings of his or her supervisor's leadership effectiveness. Identification numbers were assigned to subordinates in such a manner that each subordinate's data could be linked to the data for his or her supervisor.

### Section III: Results

#### *Descriptive Statistics*

*The Big Five.* Means, standard deviations, coefficient alpha reliability estimates, and inter-scale correlation coefficients for the scales of the HPI are presented in Table 3. For each of the HPI scales, a higher raw score is indicative of a greater amount of the personality characteristic being measured (R. Hogan & J. Hogan, 1995). In this sample of supervisors, HPI mean scores ranged from 13.99 (Intellectance) to 25.17 (Adjustment). Inter-scale correlations were very low to moderate, with coefficients ranging from .07 to .43. The coefficient alpha reliability statistics for the HPI scales in the current sample were below the

minimum acceptable level of .70 recommended by Nunnally (1978), with the exception of the Ambition/Sociability (.75) and Adjustment (.72) scales. The zero-order correlation coefficients between overall leadership effectiveness and the HPI scales were low, ranging from .01 to .12.

*Maladaptive personality characteristics.* Descriptive statistics and inter-scale correlation coefficients for the scales of the HDS are presented in Table 4. It was not possible to calculate coefficient alpha reliability statistics for the HDS scales because only scale-level data were available. For the HDS scales, higher raw scores are indicative of more dysfunctional tendencies (R. Hogan & J. Hogan, 1997). In this sample of supervisors, HDS mean scores ranged from 3.93 (Cautious) to 9.65 (Diligent). Inter-scale correlations were null to moderate, with coefficients ranging from .00 to .46. In addition, the zero-order correlation coefficients between overall leadership effectiveness and the HDS scales were low, ranging from .03 to .19. The correlations between the HPI and HDS scales are presented in Table 5.

*Leadership effectiveness.* The descriptive statistics and inter-item correlation coefficients for the leadership effectiveness measure are presented in Table 6. For the leadership effectiveness items and the overall effectiveness scale, higher mean scores were indicative of higher leadership effectiveness. In this sample of direct reports, item mean scores ranged from 3.64 (Item 3) to 4.32 (Item 9). Inter-item correlations were moderate to high, ranging from .41 (Items 1 and 12) to .73 (Items 10 and 12). In addition, the coefficient alpha reliability for the overall scale was .93, well above the acceptable level of .70 recommended by Nunnally (1978).

Because the effectiveness measure had not been evaluated previously, an exploratory factor analysis with maximum likelihood estimation and oblique rotation was conducted (see

Table 7). Although multiple leadership performance domains were used to generate items for the measure, a one-factor solution emerged. This finding is consistent with recent meta-analytic research that found evidence of a general factor in ratings of job performance (Viswesvaran, Schmidt, & Ones, 2005). The first eigenvalue of 6.72 accounted for approximately 56.01% of the variance, which greatly exceeds the value of 20% recommended by Reckase (1979) as satisfying the assumption of unidimensionality under item response theory. The second eigenvalue of 1.03 accounted for only 8.61% of the total variance. As such, the leadership effectiveness scale score was computed to be the mean response across the 12 leadership effectiveness items.

### *Regression Analyses*

The current study explored the relative and incremental validity associated with both the Big Five and maladaptive personality characteristics in predicting leadership effectiveness. In addition, the moderating effect of leader-subordinate relationship length in the relation between maladaptive leader personality and leadership effectiveness was examined. As such, a series of multiple regression analyses were conducted.

In order to conduct the regression analyses at the supervisor level, the relationship length data and the mean effectiveness ratings were aggregated across the subordinate raters within target. Prior to aggregating the effectiveness data, the level of agreement between the subordinates of each supervisor was assessed using the  $r_{wg(j)}$  index. The  $r_{wg(j)}$  index is a measure of interrater agreement that is useful for determining the appropriateness of aggregating data for higher levels of analysis (see Castro, 2002; James, Demaree, & Wolf, 1984, 1993). Following James et al., if an acceptable level of agreement was obtained from the  $r_{wg(j)}$  index (i.e.,  $r_{wg} > .70$ ), then averaging the effectiveness ratings across the

subordinates of each supervisor was supported. The median  $r_{wg(j)}$  index for the overall effectiveness variable in the current study was .94 ( $M = .87$ ,  $Max = 1.00$ ,  $Min = .08$ ); thus, aggregating subordinates' effectiveness ratings within target was supported.

*Research question one.* To assess the relative validity of the 16 traits in predicting subordinate ratings of their supervisors' effectiveness, all of the Big Five variables and all of the 11 maladaptive characteristics were entered into a single regression model. The  $N$ -to- $k$  (i.e., participants-to-predictors) ratio (Nunnally, 1978) in this analysis was 8.38 to 1, slightly below Nunnally's recommendation of at least 10 to 1. The omnibus test of the regression model was not significant in predicting subordinate ratings of supervisors' effectiveness [ $R^2 = .15$ ,  $F(16,121) = 1.32$ ,  $p = .19$ ]. A summary of the results of this analysis is presented in Table 8.

*Research question two.* Incremental validity was assessed using hierarchical regression analyses. To test the incremental validity of the Big Five over and above the maladaptive personality characteristics in the prediction of leadership effectiveness, the 11 maladaptive characteristics were entered in Step 1 of the model and the Big Five were entered in Step 2 of the model. The findings indicated that the Big Five personality characteristics did not explain variance over and above that accounted for by the maladaptive personality characteristics in the prediction of leadership effectiveness,  $\Delta R^2 = .07$  ( $p = .09$ ; see Table 9).

To test the incremental validity of the maladaptive personality characteristics over and above the Big Five in the prediction of leadership effectiveness, the Big Five were entered in Step 1 of the model and the maladaptive personality characteristics were entered in Step 2 of the model. The findings indicated that the maladaptive personality characteristics

did not explain variance over and above that accounted for by the Big Five in the prediction of leadership effectiveness,  $\Delta R^2 = .09$  ( $p = .29$ ; see Table 10).

*Hypothesis one.* The final set of analyses concerned the moderating role of leader-subordinate relationship length in the relation between the maladaptive personality characteristics and subordinate ratings of their supervisors' leadership effectiveness. Recall that maladaptive characteristics are expected to be more strongly (i.e., negatively) related to effectiveness as exposure time increases. In the absence of a sound theoretical basis for predicting precisely how much exposure time is "enough," the leader-subordinate relationship length variable was treated as a continuous variable.

The moderating effect of relationship length was tested by examining the regression coefficient for the term containing the interaction of each maladaptive trait with relationship length. During this stage of the analysis, each maladaptive trait and its interaction term was examined separately from other predictors. This alternative approach to testing moderation suggested by Villa, Howell, Dorfmann, and Daniel (2003) tests each interaction in a separate regression equation that involves only the main effects included in the interaction and the interaction term itself. As such, this approach investigates the significance of each interaction term without accounting for the influence of other variables.

Prior to forming the interaction term of each maladaptive trait with relationship length, the continuous predictors in the regression analyses were mean-centered in order to eliminate excessive multicollinearity between first-order predictors and predictors that carry their interaction with other predictors (J. Cohen, P. Cohen, West, & Aiken, 2003).

The results of the moderated regression analyses indicated that the relation between each maladaptive personality characteristic and leadership effectiveness did not vary as a

function of leader-subordinate relationship length (see Table 11). Thus, Hypothesis 1 was not supported for any of the maladaptive personality characteristics examined in the study.

#### Section VI: Discussion

The purpose of the current study was to examine the relative and incremental validity of the Big Five and maladaptive personality characteristics in predicting subordinate ratings of leadership effectiveness. In addition, the moderating role of leader-subordinate relationship length in the relation between maladaptive personality characteristics and leadership effectiveness was also investigated. Although previous research (i.e., Fecteau & Van Landuyt, 2005; Judge et al., 2002) found support for the relative and incremental validity of the Big Five and maladaptive characteristics in the prediction of leadership effectiveness, evidence of these relationships was not found in the current study.

The results indicated that neither the Big Five nor the maladaptive personality characteristics explained a significant amount of variance in subordinate ratings of leadership effectiveness when entered in a single regression model. Furthermore, the Big Five did not explain a significant amount of variance in leadership effectiveness over and above the variance explained by the maladaptive characteristics. Similarly, the maladaptive personality characteristics did not explain a significant amount of variance in leadership effectiveness over and above the variance explained by the Big Five. Finally, the interaction of each maladaptive personality characteristic with leader-subordinate relationship length on subordinate ratings of leadership effectiveness was not significant. As such, the effect of each maladaptive personality characteristic on leadership effectiveness did not vary as a function of leader-subordinate relationship length.

The non-significant zero-order correlations found in this study between the Big Five personality traits and leadership effectiveness were surprising given previous meta-analytic research in this area. In their meta-analysis, Judge et al. (2002) found that the estimated corrected correlations for the relations between neuroticism, extraversion, openness to experience and leadership effectiveness had 95% confidence intervals that excluded zero. In addition, agreeableness and conscientiousness had 80% confidence intervals that excluded zero. Thus, significant zero-order correlations of the Big Five personality traits and leadership effectiveness are not uncommon. As such, perhaps the null findings in the current study can be partially attributed to the use of a heterosource design (i.e., supervisory ratings of personality and direct report ratings of leadership effectiveness), which typically results in weaker relations and less explained variance than when a common source design is utilized (see Fuller, Patterson, Hester, & Stringer, 1996; Gerstner & Day, 1997; Lowe, Kroeck, & Sivasubramaniam, 1996; Podsakoff, MacKenzie, Paine, & Bachrach, 2000; Wagner & Gooding, 1987).

In order to determine if haphazard or dishonest responding in the student sample contributed to the non-significant findings in the current study, the analyses were repeated using only the field data. The results of these analyses revealed similar, non-significant findings. As such, the inclusion of a student sample in the current study did not appear to contribute to the non-significant relations among study variables.

The restriction of range on the leadership effectiveness criterion may have contributed to the null findings in the current study. Across the 12 items included on the leadership effectiveness measure, the number of direct reports that selected the lowest response option when rating their supervisors' leadership effectiveness ranged from one to

nine. Thus, less than 10 direct reports selected the lowest response option for any leadership effectiveness item. In their study of maladaptive leader personality characteristics predicting leadership effectiveness, Fecteau and Van Landuyt (2005) determined that maladaptive leader personality accounted for a significant proportion of the variance in leadership performance depending on the rater group and the performance criterion included in the analyses. In the current study, maladaptive leader personality accounted for a non-significant proportion of the variance in subordinate ratings of leadership effectiveness. As such, the restriction of range on the leadership effectiveness criterion may have made it difficult to detect significant relations between maladaptive leader personality characteristics and leadership effectiveness.

One final consideration concerns the number of supervisory participants who had high HDS scores and long relationship lengths with their direct reports. It seemed possible that subordinates of leaders with highly maladaptive personality characteristics might be unlikely to accrue long relationship lengths due to selection out of the relationships (voluntary or otherwise) by direct reports. Of the 134 supervisors who participated in the current study, 10 had HDS raw scores that were at least one standard deviation above the mean for any one of the HDS scales and also had relationships with their direct reports that were at least one standard deviation above the mean in length. Assuming multivariate normality, eight supervisors would have been expected to exhibit this pattern, leading to the conclusion that highly maladaptive leaders were no less likely to have long-tenured subordinates than less maladaptive leaders. However, 10 is still a small number in absolute terms, perhaps making it unlikely that there were enough supervisory participants with high

HDS scores and long relationship lengths with their direct reports to detect significant interaction effects.

### *Limitations*

There were several limitations in the current study. First, conducting the analyses at the supervisor level may have reduced the statistical power necessary to detect significant relations between the variables of interest in the current study. The regression analyses that were conducted had participant-to-predictor ratios of 8.38 to 1, which is less than the  $N$ -to- $k$  ratio of 10 to 1 recommended by Nunnally (1978). As such, it would have been preferable to conduct the analyses at the subordinate level to maximize statistical power; however, conducting the analyses in this manner would have violated regression's assumption of independent observations. Other statistical analyses such as hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992) could be utilized to evaluate relationships at multiple levels of analysis and model the relations among the variables of interest across these different levels with greater statistical power than was afforded by the aggregation method used here.

An additional limitation concerns the accuracy of the leader-subordinate relationship length data reported by the participating subordinates. In the current study, it was not possible to corroborate the relationship length data reported by each subordinate with organizational personnel records. As such, the accuracy of this data is contingent upon the respondents' ability to recall the length of the reporting relationships with their supervisors. Thus, for some respondents, particularly those who have reported to their supervisors for extended time periods, the accuracy of these data may be questionable. In the future, efforts should be made to corroborate the relationship length data provided by respondents with

organizational personnel records. In addition, future research in this area should ask both subordinates and their supervisors to report the length of their employment relationships.

#### *Directions for Future Research*

Future research on personality and leadership effectiveness should examine the effect of the Big Five and maladaptive characteristics on specific facets of managerial performance. Although attempts were made to develop a measure of leadership effectiveness that would address both task- and relationship-oriented aspects of the managerial role, an exploratory factor analysis supported a single-factor model of leadership effectiveness in the current study. As such, differential relationships between the aforementioned personality characteristics and specific facets of leadership effectiveness were not found. Thus, future research should use leadership effectiveness measures that effectively assess the different components of the managerial role more specifically.

In addition, future research on personality and leadership effectiveness should use both self-ratings and other-ratings of managerial performance. In the current study, ratings of the supervisors' effectiveness were collected only from their subordinates. Thus, future empirical research in this area should consider additional perspectives (e.g., peers and superiors) to examine the relation between leader personality and effectiveness and the moderating role of relationship length.

Finally, although an attempt was made in the current study to account for varying relations between maladaptive leader personality and leadership effectiveness as a function of leader-subordinate relationship length, future research should consider additional moderating variables. For example, the frequency and duration of the interactions between supervisors and their subordinates could potentially moderate the relations between

maladaptive leader personality characteristics and leadership effectiveness. Future research in this area should examine a three-way interaction between interaction frequency, nature of the work performed (e.g., degree of task interdependence), and leader-subordinate relationship length when examining the relation between maladaptive leader personality and leadership effectiveness.

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Section VI: Appendix

## Appendix

### Leadership Effectiveness Questionnaire

#### *Response Scale and Directions*

The response scale for each leadership effectiveness item was as follows: 1 = Not at all, 2 Somewhat, 3 = Well, 4 = Very well, 5 = Perfectly. The participants provided their ratings in response to the following directions: “Please indicate how well these statements describe your immediate superior (boss).”

#### *Questionnaire Items*

*Technical skills.* The Technical Skills lower-order factor is described as a manager’s ability to perform the core substantive and technical tasks that pertain directly to the function of the organization. Examples of technical skills include specialized knowledge, skills, and analytical abilities, as well as proficiency in financial, quantitative, and other types of data analysis (Scullen et al., 2003). The following items were constructed to assess the technical skills of the supervisory participants:

Item 1: Has the core technical skills needed to do his or her job.

Item 2: Has the specialized knowledge needed to do his or her job.

Item 3: Knows the job well.

*Administrative skills.* The Administrative Skills lower-order factor is described as the ability to think and act in terms of the particular organizational system in which the manager operates. In addition, this factor includes planning, programming, and organizing work with an understanding of how the people, structures, procedures, and policies operate in the organization (Scullen et al., 2003). The following items were constructed to assess the administrative skills of the supervisory participants:

Item 4: Effectively organizes the resources (people, structures, procedures, and policies) needed to get the job done.

Item 5: Has the administrative skills necessary to effectively help his or her work group achieve its goals.

Item 6: Maintains a high performing team by hiring and keeping capable people.

*Human skills.* The Human Skills lower-order factor refers to a manager's ability to work with and through people to accomplish goals. This factor also encompasses the ability to work effectively as a group member and the ability to elicit effort from other individuals (Scullen et al., 2003). The following items were constructed to assess the human skills of the supervisory participants:

Item 7: Is able to elicit the appropriate level of work effort from his or her employees.

Item 8: Maintains good working relationships with his or her employees.

Item 9: Communicates effectively with his or her employees.

*Contextual performance.* The Contextual Performance lower-order factor includes references to the interpersonal performance, organizational performance, and job task conscientiousness of a manager. Interpersonal performance includes behaviors such as assisting, supporting, developing, and cooperating. Organizational performance includes demonstrations of commitment, loyalty, allegiance, and compliance to the organization. Lastly, job task conscientiousness includes persistence, dedication to one's job, and a desire to perform well (Scullen et al., 2003). Based on these three dimensions of contextual performance, three items were constructed to measure the interpersonal performance, organizational performance, and job task conscientiousness of the supervisory participants:

Item 10: Goes above and beyond the call of duty.

Item 11: Does more than the bare minimum to fulfill the job requirements.

Item 12: Is dedicated to his or her job.

Table 1

*Overlapping Themes from the HDS and DSM IV, Axis 2 Personality Disorders*

HDS themes		DSM-IV personality disorders themes	
Excitable	Moody and hard to please; intense but short lived enthusiasm for people, projects, or things.	Borderline	Inappropriate anger; unstable and intense relationships alternating between idealization and devaluation.
Skeptical	Cynical, distrustful, and doubting others' true intentions.	Paranoid	Distrustful and suspicious of others; motives are interpreted as malevolent.
Cautious	Reluctant to take risks for fear of being rejected or negatively evaluated.	Avoidant	Social inhibition, feelings of inadequacy, and hypersensitivity to criticism or rejection.
Reserved	Aloof, detached, and uncommunicative; lacking interest in or awareness of the feelings of others.	Schizoid	Emotional coldness and detachment from social relationships; indifferent to praise and criticism.

Table 1 continued

*Overlapping Themes from the HDS and DSM IV, Axis 2 Personality Disorders*

HDS themes		DSM-IV personality disorders themes	
Leisurely	Independent; ignoring people's requests and becoming irritated or argumentative if they persist.	Passive-Aggressive*	Passive resistance to adequate social and occupational performance; irritated when asked to do something he/she does not want to do.
Bold	Unusually self-confident; feelings of grandiosity and entitlement; over-evaluation of one's capabilities.	Narcissistic	Arrogant and haughty behaviors or attitudes; grandiose sense of self-importance and entitlement.
Mischievous	Enjoying risk taking and testing the limits; needing excitement; manipulative, deceitful, cunning, and exploitative.	Antisocial	Disregard for the truth; impulsivity and failure to plan ahead; failure to conform with social norms.
Colorful	Expressive, animated, and dramatic; wanting to be noticed and needing to be the center of attention.	Histrionic	Excessive emotionality and attention seeking; self-dramatizing, theatrical, and exaggerated emotional expression.

Table 1 continued

*Overlapping Themes from the HDS and DSM IV, Axis 2 Personality Disorders*

	HDS Themes		DSM-IV personality disorders themes
Imaginative	Acting and thinking in creative and sometimes odd or unusual ways.	Schizotypal	Odd beliefs or magical thinking; behavior or speech that is odd, eccentric, or peculiar.
Diligent	Meticulous, precise, and perfectionistic; inflexible about rules and procedures; critical of others' performance.	Obsessive-Compulsive	Preoccupations with orderliness, rules, perfectionism, and control; overconscientious and inflexible.
Dutiful	Eager to please and reliant on others for support and guidance; reluctant to take independent action or go against popular opinion.	Dependent	Difficulty making everyday decisions without excessive advice and reassurance; difficulty expressing disagreement out of fear of loss or support or approval.

*Note:* \*From DSM-III-R. From *Hogan Development Survey Manual* (p. 5), by R. Hogan and J. Hogan, 1997, Tulsa, OK: Hogan Assessment Systems.

Table 2

*Description of Seven Primary Scales of the Hogan Personality Inventory (HPI)*


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HPI scale	Description
Adjustment	The degree to which a person appears calm and self-accepting or, conversely, self-critical and tense.
Ambition	The degree to which a person seems socially self-confident, leader-like, competitive, and energetic.
Sociability	The degree to which a person seems to need and/or enjoy interacting with others.
Likeability	The degree to which a person is seen as perceptive, tactful, and socially sensitive.
Prudence	The degree to which a person seems conscientious, conforming, and dependable.
Intellectance	The degree to which a person is perceived as bright, creative, and interested in intellectual matters.
School Success	The degree to which a person seems to enjoy academic activities and to value educational achievement for its own sake.

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*Note.* From *Hogan Personality Inventory Manual* (p. 12), by R. Hogan and J. Hogan, 1995,

Tulsa, OK: Hogan Assessment Systems.

Table 3

*Descriptive Statistics for the Big Five Personality Characteristics (HPI)*

Scale	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Adjustment	25.17	6.18	.72					
2. Ambition/Sociability	19.34	3.82	.15	.75				
3. Likeability	18.90	2.69	.29**	.17	.59 (133)			
4. Prudence	19.38	4.28	.43**	-.11	.34**	.56		
5. Intellectance	13.99	4.66	.19*	.41**	.07	-.07	.65	
6. Overall effectiveness	3.96	0.53	-.10	.01	.05	.11	-.12	.93

*Note.*  $N = 134$  unless otherwise noted in parentheses.  $M$  = mean;  $SD$  = standard deviation. Coefficient alpha reliability statistics are presented on the diagonal.

\* $p < .05$ . \*\* $p < .01$ .

Table 4

*Descriptive Statistics for the Maladaptive Personality Characteristics (HDS)*

Scale	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
1. Excitable	3.78	3.08	-											
2. Skeptical	5.40	2.72	.38**	-										
3. Cautious	3.93	2.66	.39**	.06	-									
4. Reserved	4.57	2.46	.34**	.16	.25**	-								
5. Leisurely	5.98	2.59	.25**	.45**	.29**	.34**	-							
6. Bold	7.84	2.92	.05	.44**	-.16	-.10	.22*	-						
7. Mischievous	6.41	2.85	.04	.41**	-.30**	-.10	.13	.57**	-					
8. Colorful	7.87	3.19	-.08	.17*	-.33**	-.26**	.01	.51**	.51**	-				
9. Imaginative	5.85	2.67	.14	.42**	-.05	-.04	.23**	.46**	.50**	.37**	-			
10. Diligent	9.65	2.33	.02	-.01	.01	-.16	.00	.13	-.02	-.02	.09	-		
11. Dutiful	7.83	2.40	.08	.02	.29**	-.19*	.12	.07	-.06	.01	-.04	.21*	-	
12. Overall effectiveness	3.96	0.53	.08	.10	.04	-.03	.03	.15	.07	.06	.11	.19*	-.05	.93

*Note.*  $N = 134$ ;  $M$  = mean;  $SD$  = standard deviation. The coefficient alpha reliability statistic for overall leadership effectiveness is presented on the diagonal.

\* $p < .05$ . \*\* $p < .01$ .

Table 5

*Correlations between HPI and HDS Scales*

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Adjustment	-															
Ambition/Sociability	.15	-														
Likeability	.29**	.17	-													
Prudence	.43**	-.11	.34**	-												
Intellectance	.19*	.41**	.07	-.07	-											
Excitable	-.71**	-.23**	-.29**	-.31**	-.15	-										
Skeptical	-.47**	-.05	-.37**	-.51**	-.10	.38**	-									
Cautious	-.45**	-.54**	-.01	.08	-.30**	.39**	.06	-								
Reserved	-.19*	-.44**	-.55**	-.19*	-.10	.33**	.16	.24*	-							
Leisurely	-.38**	-.07	-.21*	-.28**	-.11	.25**	.45**	.29**	.34**	-						
Bold	-.23**	.38**	-.16	-.19*	.17	.06	.44**	-.16	-.09	.22**	-					
Mischievous	-.10	.47**	-.15	-.41**	.45**	.04	.41**	-.30**	-.10	.13	.57**	-				
Colorful	-.09	.65**	.06	-.24**	.25**	-.07	.17	-.33**	-.26**	.01	.50**	.51**	-			
Imaginative	-.30**	.27**	-.16	-.30**	.34**	.14	.42**	-.05	-.03	.23**	.46**	.50**	.37**	-		
Diligent	-.04	.03	.07	.37**	-.01	.02	-.01	.01	-.16	.00	.13	-.02	-.02	.09	-	
Dutiful	-.15	-.09	.28**	.11	-.18*	.10	.02	.30**	-.18*	.13	.05	-.06	-.01	-.05	.21*	-

Note.  $N = 133$ . \* $p < .05$ . \*\* $p < .01$ .

Table 6

*Descriptive Statistics for Leadership Effectiveness by Scale Item*

Item number	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
1	4.05	0.77	–											
2	3.76	0.86	0.47	–										
3	3.64	0.99	0.47	0.54	–									
4	3.87	1.00	0.50	0.53	0.50	–								
5	4.13	0.82	0.59	0.46	0.42	0.50	–							
6	3.84	0.91	0.47	0.60	0.51	0.53	0.49	–						
7	3.71	0.90	0.44	0.51	0.58	0.50	0.43	0.52	–					
8	4.03	0.96	0.46	0.44	0.44	0.69	0.44	0.48	0.44	–				
9	4.32	0.76	0.60	0.47	0.40	0.51	0.71	0.53	0.44	0.50	–			
10	4.03	0.91	0.46	0.53	0.55	0.60	0.42	0.55	0.52	0.49	0.48	–		
11	4.20	0.77	0.50	0.47	0.43	0.63	0.59	0.49	0.43	0.57	0.58	0.53	–	
12	3.73	0.95	0.41	0.57	0.53	0.55	0.38	0.58	0.57	0.44	0.44	0.73	0.48	–

*Note.* See Appendix for item descriptions.  $N = 330$ .  $M$  = mean;  $SD$  = standard deviation.  $M$  for overall scale = 3.96;  $SD$  for overall scale = 0.53; coefficient alpha for overall scale = .93. All inter-item correlation coefficients were significant at  $p < .01$ .

Table 7

*Factor Loadings for Leadership Effectiveness Items*

Item number	Factor
1	.68
2	.69
3	.71
4	.71
5	.73
6	.67
7	.68
8	.76
9	.73
10	.77
11	.69
12	.73

*Note.* See Appendix for item descriptions.

Table 8

*Summary of Regression Analysis for the HPI and HDS Predicting Ratings of Leadership Effectiveness*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
Adjustment	-.00	.01	-.09
Ambition/Sociability	-.00	.02	-.01
Likeability	.03	.02	.19
Prudence	.03	.02	.20
Intellectance	-.03	.01	-.24*
Excitable	.01	.02	.06
Skeptical	.01	.03	.06
Cautious	.00	.02	.02
Reserved	.01	.03	.09
Leisurely	-.01	.02	-.06
Bold	.01	.02	.06
Mischievous	.03	.03	.15
Colorful	.00	.02	.03
Imaginative	.02	.02	.10
Diligent	.03	.02	.13
Dutiful	-.04	.02	-.18

*Note.* *B* = unstandardized coefficient; *SE B* = standard error of the unstandardized coefficient;  $\beta$  = standardized coefficient. \* $p < .05$ .

Table 9

*Summary of Hierarchical Regression Analysis for Incremental Validity of the Big Five*

Variable	Step 1			Step 2		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Excitable	.01	.02	.07	.01	.02	.06
Skeptical	.00	.02	.05	.01	.03	.06
Cautious	.02	.02	.10	.00	.02	.02
Reserved	-.00	.02	-.04	.02	.03	.09
Leisurely	-.00	.02	-.04	-.01	.02	-.06
Bold	.02	.02	.10	.01	.02	.06
Mischievous	-.00	.02	-.03	.00	.03	.15
Colorful	.00	.02	.04	.00	.02	.03
Imaginative	.00	.02	.02	.02	.02	.10
Diligent	.04	.02	.20*	.03	.02	.13
Dutiful	-.03	.02	-.15	-.04	.02	-.18
Adjustment				-.00	.01	-.09
Ambition/Sociability				-.00	.02	-.00
Likeability				.03	.02	.19
Prudence				.03	.02	.20
Intellectance				-.03	.01	-.24*

*Note.* *B* = unstandardized coefficient; *SE B* = standard error of the unstandardized coefficient;  $\beta$  = standardized coefficient.  $R^2 = .08$

for Step 1;  $R^2 = .15$  for Step 2;  $\Delta R^2 = .07$  ( $p = .09$ ). \* $p < .05$ .

Table 10

*Summary of Hierarchical Regression Analysis for Incremental Validity of the Maladaptive Characteristics*

Variable	Step 1			Step 2		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Adjustment	-.02	.01	-.18	-.00	.01	-.09
Ambition/Sociability	.01	.01	.09	-.00	.02	-.00
Likeability	.00	.02	.05	.03	.02	.19
Prudence	.02	.01	.17	.03	.02	.20
Intellectance	-.02	.01	-.13	-.03	.01	-.24*
Excitable				.01	.02	.06
Skeptical				.01	.03	.06
Cautious				.00	.02	.02
Reserved				.02	.03	.09
Leisurely				-.01	.02	-.06
Bold				.01	.02	.06
Mischievous				.03	.03	.15
Colorful				.00	.02	.03
Imaginative				.02	.02	.10
Diligent				.03	.02	.13
Dutiful				-.04	.02	-.18

*Note.* *B* = unstandardized coefficient; *SE B* = standard error of the unstandardized coefficient;  $\beta$  = standardized coefficient.  $R^2 = .06$  for Step 1;  $R^2 = .15$  for Step 2;  $\Delta R^2 = .09$  ( $p = .29$ ). \* $p < .05$ .

Table 11

*Summary of Moderated Regression Analyses Predicting Leadership Effectiveness by Leader-Subordinate Relationship Length*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
Excitable x Relationship Length	-.00	.001	-.05
Skeptical x Relationship Length	-.00	.001	-.02
Cautious x Relationship Length	.00	.000	.08
Reserved x Relationship Length	-.00	.001	-.00
Leisurely x Relationship Length	.00	.000	.07
Bold x Relationship Length	-.00	.000	-.09
Mischievous x Relationship Length	.00	.000	.02
Colorful x Relationship Length	-.00	.000	-.02
Imaginative x Relationship Length	.00	.001	.04
Diligent x Relationship Length	-.00	.001	-.07
Dutiful x Relationship Length	-.00	.001	-.02

*Note.* Each interaction term was examined separately from other predictors (see Villa et al., 2003).