

Personality and Leadership: A Qualitative and Quantitative Review

Timothy A. Judge
University of Florida

Joyce E. Bono
University of Minnesota

Remus Ilies
University of Florida

Megan W. Gerhardt
University of Iowa

This article provides a qualitative review of the trait perspective in leadership research, followed by a meta-analysis. The authors used the five-factor model as an organizing framework and meta-analyzed 222 correlations from 73 samples. Overall, the correlations with leadership were Neuroticism = $-.24$, Extraversion = $.31$, Openness to Experience = $.24$, Agreeableness = $.08$, and Conscientiousness = $.28$. Results indicated that the relations of Neuroticism, Extraversion, Openness to Experience, and Conscientiousness with leadership generalized in that more than 90% of the individual correlations were greater than 0. Extraversion was the most consistent correlate of leadership across study settings and leadership criteria (leader emergence and leadership effectiveness). Overall, the five-factor model had a multiple correlation of $.48$ with leadership, indicating strong support for the leader trait perspective when traits are organized according to the five-factor model.

The great Victorian era historian Thomas Carlyle commented that “the history of the world was the biography of great men” (Carlyle, 1907, p. 18). This “great man” hypothesis—that history is shaped by the forces of extraordinary leadership—gave rise to the trait theory of leadership. Like the great man theory, trait theory assumed that leadership depended on the personal qualities of the leader, but unlike the great man theory, it did not necessarily assume that leadership resided solely within the grasp of a few heroic men. Terman’s (1904) study is perhaps the earliest on trait theory in applied psychology; other discussions of the trait approach appeared in applied psychology in the 1920s (e.g., Bowden, 1926; Kohs & Irle, 1920). Cowley (1931) summarized well the view of trait theorists in commenting that “the approach to the study of leadership has usually been and perhaps must always be through the study of traits” (p. 144).

Despite this venerable tradition, results of investigations relating personality traits to leadership have been inconsistent and often disappointing. Most reviews of the literature have concluded that the trait approach has fallen out of favor among leadership researchers. As Zaccaro, Foti, and Kenny (1991) noted, “trait explanations of leader emergence are generally regarded with little esteem by leadership theorists” (p. 308). The original source of skepticism with the trait approach is often attributed to Stogdill’s (1948) influential review. Although Stogdill did find some consistent relations, he concluded, “The findings suggest that leadership is not a matter of passive status or of the mere possession of some

combination of traits” (Stogdill, 1948, p. 66). As Bass (1990) noted, after Stogdill’s (1948) review, “situation-specific analyses took over, in fact, dominating the field” (p. 59). Indeed, Hughes, Ginnett, and Curphy (1996) and Yukl and Van Fleet (1992) commented that any trait’s effect on leadership behavior will depend on the situation. Even today, with the renewed interest in dispositional explanations of attitudes and behaviors, there remains pessimism about the relationship of personality variables to leadership. Conger and Kanungo (1998) described the trait approach as “too simplistic” (p. 38). House and Aditya (1997) concluded, “It appeared . . . that there were few, if any, universal traits associated with effective leadership. Consequently, there developed among the community of leadership scholars near consensus that the search for universal traits was futile” (p. 410).

Notwithstanding these stark assessments, all of the aforementioned reviews uncovered some traits that appeared to be related to leadership emergence or effectiveness. Table 1 provides the results of previous qualitative reviews of the leader trait perspective. In preparing this table, we took several steps to reduce it to a manageable level. First, several reviews were excluded from presentation in Table 1 (e.g., House & Howell, 1992, was excluded because it focused on charismatic leadership; Stogdill, 1974, was excluded because it was quite similar to reviews completed before [Stogdill, 1948] and since [Bass, 1990; Yukl, 1998]). Second, characteristics that were identified as not being personality traits (motivation, knowledge, intelligence—see below) were excluded. Finally, Bass’s (1990) comprehensive list was shortened to include only those traits that were supported in 10 or more studies in his review.

Several aspects of the results in Table 1 are noteworthy. It is clear there is some overlap in the traits identified by the reviews. For example, self-confidence appears in all but two of the reviews, and other traits (adjustment, sociability, integrity) appear in multiple reviews. On the other hand, despite some agreement, the reviews are not overly consistent. C. R. Anderson and Schreier (1978) commented, “These searches seemed to result in a myriad

Timothy A. Judge and Remus Ilies, Department of Management, University of Florida; Joyce E. Bono, Department of Psychology, University of Minnesota; Megan W. Gerhardt, Department of Management, University of Iowa.

Correspondence concerning this article should be addressed to Timothy A. Judge, Department of Management, Warrington College of Business, University of Florida, 211 D Stuzin Hall, Gainesville, Florida 32611-7165. E-mail: tjudge@ufl.edu

Table 1
Past Qualitative Reviews of the Traits of Effective or Emergent Leaders

Daft (1999)	Stogdill (1948)	R. Hogan et al. (1994)	House & Aditya (1997)	Mann (1959)
Alertness Originality, creativity Personal integrity Self-confidence	Dependability Sociability Initiative Persistence Self-confidence Alertness Cooperativeness Adaptability	Surgency Agreeableness Conscientiousness Emotional stability	Achievement motivation Prosocial influence motivation Adjustment Self-confidence	Adjustment Extroversion Dominance Masculinity Conservatism
Northouse (1997)	Bass (1990)	Yukl (1998)	Kirkpatrick & Locke (1991)	Yukl & Van Fleet (1992)
Self-confidence Determination Integrity Sociability	Adjustment Adaptability Aggressiveness Alertness Ascendance, dominance Emotional balance, control Independence, nonconformity Originality, creativity Integrity Self-confidence	Energy level and stress tolerance Self-confidence Internal locus of control Emotional maturity Personality integrity Socialized power motivation Achievement orientation Low need for affiliation	Drive (achievement, ambition, energy, tenacity, initiative) Honesty/integrity Self-confidence (emotional stability)	Emotional maturity Integrity Self-confidence High energy level Stress tolerance

of characteristics, few of which recurred consistently across studies" (p. 690). For example, (a) masculinity emerged in two reviews (Mann, 1959; Stogdill, 1948) and is absent in all others, (b) dominance emerged as an important leadership trait in some reviews (e.g., Mann, 1959) but was absent in others, (c) four traits (persistence, initiative, responsibility, and insight) surfaced in Stogdill's (1948, 1974) reviews but were absent in all others, and (d) some traits appeared in only one review (e.g., alertness [Stogdill, 1948]; drive [Kirkpatrick & Locke, 1991]).

It is telling that, except for self-confidence, no trait emerged as related to leadership in a majority of these reviews.

Even when the same traits are included in these reviews, they are often assumed to be distinct and thus are labeled differently. For example, adjustment and self-confidence are indicators of the same construct—emotional stability (Hogan, Curphy, & Hogan, 1994)—yet were reviewed as distinct traits in two reviews (Mann, 1959; Stogdill, 1948). Similarly, persistence and determination are indicators of Conscientiousness (Costa, McCrae, & Dye, 1991) yet were studied separately as well (Northouse, 1997; Stogdill, 1948). One of the biggest problems in past research relating personality to leadership is the lack of a structure in describing personality, leading to a wide range of traits being investigated under different labels. As Hughes et al. (1996) noted, "the labeling dilemma made it almost impossible to find consistent relationships between personality and leadership even when they really existed" (p. 179). House and Aditya (1997) commented, "One problem with early trait research was that there was little empirically substantiated personality theory to guide the search for leadership traits" (p. 410).

In the only meta-analysis on the subject, Lord, De Vader, and Alliger (1986) found two traits—dominance and masculinity—femininity—that had statistically significant (nonzero) relations with leadership emergence. Thus, the Lord et al. (1986) review did provide some important support for trait theory. However, we limited our analysis to the traits identified in Mann's (1959) review of small groups leadership, and most of the studies Lord et al.

analyzed were limited to those included in Mann's review. As a result of these limitations, the results have not been fully integrated into subsequent reviews of the literature. For example, except for intelligence, several more recent reviews of trait theory include none of the traits specifically identified in the Lord et al. review (Kirkpatrick & Locke, 1991, Exhibit 1; Northouse, 1997, Table 2.2; Yukl, 1998, Table 10-3). Thus, despite the contributions of the Lord et al. meta-analysis, if one were to ask five leadership researchers, in general, whether trait theory was valid and, if so, specifically which traits were valid, one would likely get five different answers.

The purpose of the remainder of this article is to provide a quantitative review of the relationship between personality and leadership. One possible reason for the inconsistent and disappointing results from previous reviews is that, until recently, we have lacked a taxonomic structure for classifying and organizing traits. Accordingly, in this study we use the five-factor model of personality as an organizing framework to estimate relations between personality and leadership. Furthermore, we estimate relations involving multiple criteria. Lord et al. (1986) made a distinction between leadership emergence and leadership effectiveness. Accordingly, we estimate personality–leadership relations according to two criteria—leadership emergence and leader effectiveness. Finally, because there is much concern in personality research about whether broad or specific personality traits best predict criteria (Block, 1995; Hough, 1992), we also investigate the relative predictive power of broad versus specific measures of the Big Five traits. Before exploring relations between personality traits and leadership, we provide a brief review of the five-factor model and of the dimensionality of leadership.

Five-Factor Model of Personality

Consensus is emerging that a five-factor model of personality (often termed the *Big Five*) can be used to describe the most salient aspects of personality (Goldberg, 1990). The first researchers to

replicate the five-factor structure were Norman (1963) and Tupes and Christal (1961), who are generally credited with founding the five-factor model. The five-factor structure has been recaptured through analyses of trait adjectives in various languages, factor analytic studies of existing personality inventories, and decisions regarding the dimensionality of existing measures made by expert judges (McCrae & John, 1992). The cross-cultural generalizability of the five-factor structure has been established through research in many countries (McCrae & Costa, 1997). Evidence indicates that the Big Five are heritable and stable over time (Costa & McCrae, 1988; Digman, 1989).

The dimensions comprising the five-factor model are Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Neuroticism represents the tendency to exhibit poor emotional adjustment and experience negative affects, such as anxiety, insecurity, and hostility. Extraversion represents the tendency to be sociable, assertive, active, and to experience positive affects, such as energy and zeal. Openness to Experience is the disposition to be imaginative, nonconforming, unconventional, and autonomous. Agreeableness is the tendency to be trusting, compliant, caring, and gentle. Conscientiousness is comprised of two related facets: achievement and dependability.

The Big Five traits have been found to be relevant to many aspects of life, such as subjective well-being (e.g., DeNeve & Cooper, 1998) and even longevity (Friedman et al., 1995). One of the most popular applications of the five-factor model has been to the area of job performance, in which eight meta-analyses have been conducted (G. Anderson & Viswesvaran, 1998; Barrick & Mount, 1991; Hough, Ones, & Viswesvaran, 1998; Hurtz & Donovan, 2000; Robertson & Kinder, 1993; Salgado, 1997, 1998; Tett, Jackson, & Rothstein, 1991). The most often cited of these meta-analyses is Barrick and Mount (1991). In reviewing the literature on the relationship between personality and job performance, these authors noted (pp. 1–2):

The overall conclusion from these studies is that the validity of personality as a predictor of job performance is quite low. . . . However, at the time these studies were conducted, no well-accepted taxonomy existed for classifying personality traits. Consequently, it was not possible to determine whether there were consistent, meaningful relationships between particular personality constructs and performance criteria in different occupations.

One could easily substitute “leadership” for “job performance” in the above quotation. Thus, just as the five-factor model has provided a valuable taxonomy for the study of job performance, so it might for the study of leadership. Having defined the traits comprising the five-factor model of personality, in the next section we seek to define leadership and its components.

Leadership Criteria

As R. Hogan et al. (1994) noted, leadership can be conceptualized and measured in different ways. It is possible to separate leadership into two broad categories: leadership emergence and leadership effectiveness (Lord et al., 1986). According to R. Hogan et al. (1994), “research on leadership emergence identifies the factors associated with someone being perceived as leaderlike” (p. 496). Thus, leader emergence refers to whether (or to what degree) an individual is viewed as a leader by others, who typically have only limited information about that individual’s performance.

In contrast to being perceived as a leader, leadership effectiveness refers to a leader’s performance in influencing and guiding the activities of his or her unit toward achievement of its goals (see Stogdill, 1950). R. Hogan et al. (1994) suggested that leadership effectiveness should be measured in terms of team, group, or organizational effectiveness. In practice, however, assessments of leadership effectiveness most commonly consist of ratings made by the leader’s supervisor, peer, or subordinate (or some combination of these three). Such ratings, although they represent the predominant method of assessing leadership effectiveness, can be criticized as potentially contaminated. Because such ratings represent individuals’ perceptions of leadership effectiveness rather than objectively measured performance outcomes (e.g., team performance), they may be influenced by raters’ implicit leadership theories (Lord, Foti, & De Vader, 1984). However, whether ratings of leadership effectiveness are biased by implicit leadership theories or selective recall, or even halo, there is evidence that ratings of leadership effectiveness converge with objective measures of work group performance (R. Hogan et al., 1994), providing support for the use of supervisor and subordinate ratings as measures of leadership effectiveness.

Conceptually, leadership effectiveness and emergence represent two levels of analysis. Leadership emergence is a within-group phenomenon, as evidenced by many early studies of leadership that were conducted in groups with no formal leader (see Mann’s [1959] review)—that is, a leader emerged from within a group. In contrast, leadership effectiveness, as defined above, represents a between-groups phenomenon. Effectiveness refers to a leader’s ability to influence his or her subordinates. Therefore, the individual being evaluated must first be a leader. Subsequent evaluation of that leader’s effectiveness implies a comparison to the performance of other leaders, generally (by necessity) in different groups. Although leader emergence and leadership effectiveness are distinct in concept, in practice the criteria sometimes become blurred, particularly when measured perceptually (House & Podsakoff, 1994). Nonetheless, in the development of our hypotheses, we distinguish ratings of a leader’s effectiveness from perceptions of leader emergence.

Relationship of Big Five Traits to Leadership

Below we consider possible linkages between personality and leadership. We organize this discussion according to each of the Big Five traits. We then consider overall relationships between the Big Five traits and leadership and the issue of the relationship of lower order personality constructs to leadership.

Neuroticism

Lord et al.’s (1986) meta-analysis revealed a corrected correlation of .24 between measures of adjustment and leadership perceptions on the basis of a relatively small number of studies cumulated in their analysis. This estimate, however, could not be distinguished from zero. Bass (1990), in his review, indicated that almost all studies on the relationship of self-confidence—indicating low Neuroticism—to leadership “were uniform in the positive direction of their findings” (p. 69). Hill and Ritchie (1977) suggested that self-esteem—another indicator of low Neuroticism (Eysenck, 1990)—is predictive of leadership: “It appears that there is convincing evidence for the inclusion of self-esteem as an

important trait of both superior and subordinate in analyzing leadership effectiveness" (Hill & Ritchie, 1977, p. 499). Evidence also indicates that neurotic individuals are less likely to be perceived as leaders (R. Hogan et al., 1994). In light of this evidence and these arguments, we would expect that Neuroticism is negatively related to leader emergence and leadership effectiveness.

Extraversion

In Bass's (1990) review, results linking Extraversion to leadership were inconsistent. In early studies (those completed between 1904 and 1947), Extraversion was positively related to leadership in five studies and negatively related in three, and there was no relation in four. Other reviews, however, suggest that extraverts should be more likely to emerge as leaders in groups. Extraversion is strongly related to social leadership (Costa & McCrae, 1988) and, according to Watson and Clark (1997), to leader emergence in groups. R. Hogan et al. (1994) noted that Extraversion is related to being perceived as leaderlike. Extraverts tend to be energetic, lively people. Kirkpatrick and Locke (1991) commented, "Leaders are more likely than nonleaders to have a high level of energy and stamina and to be generally active, lively, and often restless" (p. 50). Adjectives used to describe individuals who emerged as leaders in leaderless group discussions included active, assertive, energetic, and not silent or withdrawn (Gough, 1988). These are the characteristics of extraverts. Indeed, Gough (1990) found that both of the major facets of Extraversion—dominance and sociability—were related to self and peer ratings of leadership. Considering this evidence, Extraversion should be positively related to both leader emergence and leadership effectiveness, although somewhat more strongly to leader emergence.

Openness

When Bass (1990) listed the traits that were the best correlates of leadership, originality—a clear hallmark of Openness—topped the list. Openness correlates with divergent thinking (McCrae, 1987) and is strongly related to both personality-based and behavioral measures of creativity (Feist, 1998; McCrae & Costa, 1997). Creativity appears to be an important skill of effective leaders. Creativity was one of the skills contained in Yukl's (1998) summary of the skills of leaders, which was based on Stogdill's (1974) earlier review. Research indicates that creativity is linked to effective leadership (see Sosik, Kahai, & Avolio, 1998), suggesting that open individuals are more likely to emerge as leaders and be effective leaders.

Agreeableness

Conceptually, the link between Agreeableness and leadership is ambiguous. On the one hand, cooperativeness tends to be related to leadership (Bass, 1990), and Zaccaro et al. (1991) found that interpersonal sensitivity was related to leadership. That altruism, tact, and sensitivity are hallmarks of an agreeable personality would suggest that leaders should be more agreeable. On the other hand, agreeable individuals are likely to be modest (Goldberg, 1990), and leaders tend not to be excessively modest (Bass, 1990, p. 70). Furthermore, although it often is considered to be part of Extraversion (Watson & Clark, 1997), many scholars consider affiliation to be an indicator of Agreeableness (Piedmont, McCrae,

& Costa, 1991). Need for affiliation appears to be negatively related to leadership (Yukl, 1998). These factors suggest that Agreeableness would be negatively related to leadership. In light of these conflicting justifications, the possible relationship between Agreeableness and leadership is ambiguous.

Conscientiousness

Bass (1990) commented, "Task competence results in attempts to lead that are more likely to result in success for the leader, effectiveness for the group, and reinforcement of the tendencies" (p. 109). We know that Conscientiousness is related to overall job performance (Barrick & Mount, 1991), and this suggests that Conscientiousness will be related to leader effectiveness. Furthermore, initiative and persistence are related to leadership. As Kirkpatrick and Locke (1991) noted, "leaders must be tirelessly persistent in their activities and follow through with their programs" (p. 51). Because conscientious individuals have more tenacity and persistence (Goldberg, 1990), we expect that conscientious individuals will be more effective leaders.

Overall Relationships

Similar to meta-analyses involving job performance in which various aspects of performance are combined into an overall estimate (e.g., Barrick & Mount, 1991), we investigated the relationship of the Big Five traits to leadership pooling across the leadership criteria (effectiveness and emergence). As noted earlier, conceptually, leadership effectiveness and emergence are distinct constructs. However, operationally, both are generally measured via ratings or observations of others, which means that both criteria represent individuals' perceptions of leadership. Because there is good reason to believe that Neuroticism, Extraversion, and Openness will be related to multiple leadership criteria, we believe that these traits will display significant (nonzero) relationships with leadership in the combined analysis.

Relevance of Facets

One of the most prominent criticisms of the five-factor model is that it provides too coarse a description of personality (Block, 1995; Hough, 1992). Although some researchers have argued for fewer than five traits (e.g., Eysenck, 1992), most personality psychologists who criticize the number of factors do so on the basis of too few factors. As Block (1995) noted, "for an adequate understanding of personality, it is necessary to think and measure more specifically than at this global level if behaviors and their mediating variables are to be sufficiently, incisively represented" (p. 208). In industrial-organizational psychology, the relative merits of broad versus specific traits (framed in terms of the bandwidth-fidelity issue) also have been debated with respect to the Big Five traits. Some researchers have argued in favor of traits more numerous or specific than the Big Five. Hough (1992) argued that the Big Five obscures important relations between traits and criteria. She concluded, "If prediction of life outcomes or criteria is important in evaluating personality taxonomies, the Big Five is an inadequate taxonomy of personality constructs" (Hough, 1992, p. 153). Conversely, Ones and Viswesvaran (1996) argued that "broader and richer personality traits will have higher predictive validity than narrower traits" (p. 622).

In accordance with the reasoning of the five-factor model critics, the Big Five traits may be too broad to predict the leadership criteria, thus potentially masking personality–leadership relations. For example, the two main facets of Extraversion—dominance and sociability (referred to by Hogan [e.g., R. Hogan et al., 1994] as ambition and sociability and by Hough, 1992, as potency and affiliation)—may correlate differently with leadership, and each has been investigated separately as predictors of leadership (Bass, 1990). Similarly, the two primary facets of Conscientiousness—achievement and dependability (Mount & Barrick, 1995a)—may display differential relations with leadership. Finally, evidence suggests that self-esteem and locus of control indicate the same factor as Neuroticism (Judge, Locke, Durham, & Kluger, 1998). In fact, Eysenck (1990) considered self-esteem to be a facet of Neuroticism. However, because these traits have usually been investigated separately rather than as facets of Neuroticism, it is important to determine their individual predictive validity. As Vickers (1995) noted, “no study has systematically sampled leadership-relevant facets within the general personality domains” (p. 15). Because there are arguments on both sides of the issue, we investigated the relative predictive power of more specific facets of the Big Five traits with respect to (a) dominance and sociability, (b) achievement-orientation and dependability, and (c) self-esteem and locus of control.

Method

Literature Search

We conducted our search for studies on the personality–leadership relationship in two stages. In the first search, we entered the keywords *personality* and *leadership* and each of the Big Five traits and *leadership* in the PsycINFO database (1967–1998; at that time, PsycINFO did not contain studies prior to 1966). That search resulted in 998 studies. In addition to the electronic search, we also manually searched journals thought to be particularly relevant (e.g., *Leadership Quarterly*), as well as the most comprehensive reviews of the literature (Bass, 1990; Lord et al., 1986; Mann, 1959; Stogdill, 1974) to identify pre-1967 studies. After examining these abstracts, articles, and dissertations, it became clear that our search excluded some studies in which particular traits were included as keywords but *personality* was not. Accordingly, we searched the PsycINFO database (1887–1999) and used *leadership* and 48 additional traits (e.g., self-esteem, locus of control, modesty, and self-control) known to have been studied in relationship to leadership (Bass, 1990). In both searches, disordered populations were excluded from the searches, as were non-English articles. This search resulted in 1,447 abstracts, many of which we had previously examined (as a part of the original 998). In reviewing all of the abstracts, we eliminated studies in which reports of personality and leadership were not in reference to the same person (i.e., several studies reported a correlation between follower personality and leader behaviors), studies of leadership that were specific to a particularistic criterion (e.g., opinion leadership or fashion leadership), studies without data (e.g., literature reviews or theoretical works), and studies at the group or organizational level of analysis.

For the remaining 263 journal articles and 77 doctoral dissertations, we examined each study to determine whether it contained a personality measure for leaders, a criterion measure, and the data necessary to calculate a correlation between the two. Sixty studies (73 independent samples in all), containing 222 correlations that were classified into one or more of the five-factor traits, met these criteria. Additionally, 20 studies involving self-esteem or locus of control were coded, including two of the 60 five-factor model studies noted above. These 78 studies are identified in the reference list. In accordance with our a priori definition of the population

and relationships of interest, several exclusionary rules were established. First, many, if not most, early studies on leadership (pre-1950) failed to report the data necessary to obtain a correlation (e.g., studies that reported percentages or proportions, studies that reported means with no standard deviations, or studies that provided only a narrative summary of the results). Second, although we used a broad definition of leadership—including teacher reports of students’ leadership in the classroom, peer nominations of leaders in formal and informal groups, the number of elected positions held in high school, superior ratings of military leadership, and leadership behaviors exhibited in the classroom or at work—we excluded studies that operationalized leadership as salary level, career success, or the person most liked by peers. We also excluded self-reports of leadership (e.g., Armilla, 1967). In terms of personality, we excluded studies wherein the personality measure was a combination of more than one trait or could not be identified clearly as a personality trait subsumed within the five-factor model. Thus, traits such as field dependence, personality clusters such as California Psychological Inventory leadership, or typologies such as the Myers–Briggs Type Indicator (MBTI) types were not included; studies that reported individual MBTI traits (e.g., I/E [introvert/extrovert]) rather than types (e.g., INTJ [Introvert Intuitive Thinking Judging]) were included.

Personality measures were classified according to the coding procedure developed and used by Barrick and Mount (1991). Specifically, in their meta-analysis, they classified personality measures on the basis of an examination of the measures and decisions made by six expert judges. For example, the achievement and order scales from the Adjective Checklist (see Gough, 1990) were classified by the experts as measures of Conscientiousness, and the warm and suspicious (reverse scored) scales from the 16 PF were classified as measures of Agreeableness. We followed their classification closely with the following exceptions: (a) On the basis of R. Hogan et al. (1994) and House and Howell (1992), need for power was classified as a measure of Extraversion; (b) items contained in the Femininity subscale of the Bem Sex-Role Inventory (Bem, 1974) appeared to assess Agreeableness (e.g., compassionate, gentle, tender, sympathetic warm, understanding, yielding)—thus, this measure was classified as Agreeableness; (c) although self-monitoring per se was not coded as a Big Five trait, in one study an Extraversion subscale of a self-monitoring measure was used—thus, this subscale was classified as Extraversion; (d) when ad hoc personality measures were used, we classified them according to our best judgment.¹ For measures of the facets of personality, we generally only classified those traits that were identified by the same label (e.g., only traits specifically labeled as sociability, dominance, and achievement were coded as such); the only exceptions were dependability (dependability, order, and dutifulness were coded as dependability) and dominance (dominance and need for power were classified as dominance).

In terms of the criterion, studies were coded as representing leader emergence or leadership effectiveness based on our a priori definitions. Specifically, ratings were coded as measures of leadership effectiveness in cases in which a leader’s effectiveness was assessed. There were no cases in which group performance was the effectiveness measure. The predominant measure of the leadership effectiveness was assessment by subordinates or supervisors. For example, in Johnson, Luthans, and Hennessey (1984), an average of four subordinates per leader reported “how much influence they felt their supervisor had on the productivity and overall effectiveness of their unit.” In other cases, effectiveness ratings were less specific—subordinates and supervisors rated leader success or leader ef-

¹ For example, Drake (1944) related 74 individual traits (e.g., self-confidence, originality, sociability) to leadership. We classified 53 of these individual traits as measures of one of the Big Five traits on the basis of our knowledge of the literature, and then computed an average correlation between the traits corresponding to the relevant Big Five trait and leadership.

fectiveness. In contrast, ratings were coded as leadership emergence when leadership was defined as a comparison of leaders versus nonleaders (e.g., some held a leadership position in high school and others did not), leader rankings by other members of a leaderless group, nominations of leaders by other group members or observers, sociometric ratings, and participation in leadership activities. Similar to meta-analyses in the personality–job performance area (e.g., Barrick & Mount, 1991), in addition to reporting meta-analysis results separately for each criterion, we pooled the two leadership criteria together for purposes of an overall analysis.

Although we tried to make our coding procedures as clear and objective as possible, as is the case in all meta-analyses, some discretion was required in classifying the personality traits. To ascertain the reliability of the coding process, two individuals randomly divided the articles and coded each. Once that initial process was completed, a third individual coded the articles again.² This third rater was not aware of the initial coding decisions made by the two other raters. Across all traits, the third rater agreed with the decisions of the other two in 91% of the cases. Disagreements were resolved by Timothy A. Judge after a reconsideration of the original coding.

Meta-Analysis Procedures

In conducting the meta-analysis, we followed the procedures of Hunter and Schmidt (1990). First, we calculated a sample-sized weighted mean correlation for each of the personality traits with leadership. Second, correlations were individually corrected for measurement error in both the predictor and the criterion. Estimates were not corrected for range restriction. As was noted by Barrick and Mount (1991) and Lord et al. (1986) with respect to the personality traits included in their analyses, it was relatively unusual for studies to report reliability data. The same was true for the present study. Accordingly, for the Big Five traits, we averaged the reliabilities for all known measures of the five-factor model: Big Five Inventory (Benet-Martínez & John, 1998), Big Five Questionnaire (Caprara, Barbaranelli, Borgogni, & Perugini, 1993), Hogan Personality Inventory (R. Hogan & Hogan, 1995), International Personality Item Pool (Goldberg, 1999), NEO Personality Inventory—Revised (NEO-PI-R; Costa & McCrae, 1992), NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992), and Personality Characteristics Inventory (Mount & Barrick, 1995b). The average reliabilities were as follows: Neuroticism = .88, Extraversion = .85, Openness to Experience = .81, Agreeableness = .78, Conscientiousness = .84; These values were used in the analysis. In the case of self-esteem and locus of control, we used the average reliabilities reported in Judge and Bono (2001) in their review of these literatures. The average reliabilities for self-esteem and locus of control were .81 and .73, respectively. Finally, for the other facets of the Big Five traits, we used the average reliabilities reported for these facets in many personality inventories. Four of these inventories were the five-factor model measures described above that also reported facet reliabilities (Hogan Personality Inventory, International Personality Item Pool, NEO Personality Inventory, and Personal Characteristics Inventory). Three other inventories were not explicitly designed as five-factor model inventories but nonetheless reported reliabilities for the relevant facets (16 PF [Cattell & Stice, 1957], California Psychological Inventory [Gough, 1957], and Personality Research Form [PRF; Jackson, 1967]). Across these inventories, the average reliabilities were as follows: dominance = .76, sociability = .74, achievement = .74, and dependability = .72. Again, these values were used in the analyses.

Measures of leadership were supplied by others' ratings, rankings, or nominations. Therefore, one would seek to generalize to another equally knowledgeable rater or raters, and in such a case, interrater reliabilities should be used to estimate measurement error (Viswesvaran, Ones, & Schmidt, 1996). The statistics that were used to correct leadership ratings for measurement error depended on the source of the ratings and the number of ratings. In terms of source of the ratings, we used Viswesvaran et al.'s (1996) estimates of the reliability of supervisor ratings of leadership (teachers' ratings of the leadership behaviors of students were treated as

supervisory ratings) and peer ratings of leadership. Viswesvaran et al. did not report an estimate of the reliability of subordinate or follower ratings of leadership. Because the reliability of ratings of job performance in their review was quite similar to Viswesvaran et al.'s estimates of the reliability of leadership ratings, we used Conway and Huffcutt's (1997) meta-analytic estimate of the reliability of subordinate performance ratings as an estimate of subordinate or follower ratings of leadership. When multiple raters supplied ratings of leadership in a particular study, the reliability estimates were corrected upward on the basis of the Spearman-Brown prophecy formula. Studies in which the source of the ratings was not provided or could not be determined, the average corrected reliability across all sources and number of ratings was used (the average reliability was .60).

In addition to reporting estimates of the mean correlations, it is also important in meta-analysis to describe variability in the correlations. Accordingly, we report 80% credibility intervals and 95% confidence intervals (CIs) around the estimated population correlations. CIs provide an estimate of the variability around the estimated mean correlation; a 95% CI excluding zero indicates that if we repeatedly sampled the population of correlations, 97.5% or more of the intervals would exclude zero (the other 2.5% of the average correlations would lie in the other tail of the distribution). Credibility intervals provide an estimate of the variability of individual correlations in the population; an 80% credibility interval excluding zero indicates that more than 90% of the individual correlations in the population will exclude zero (another 10% will lie above the upward limit of the interval). Thus, CIs estimate variability in the estimated mean correlation whereas credibility intervals estimate variability of the individual correlations in the population of studies.

Results

As noted earlier, because we believe emergence and effectiveness to be related but distinct criteria, we first conducted an overall analysis combining the two criteria. Results of the meta-analyses relating the Big Five traits to leadership are provided in Table 2. As is shown in the table, Extraversion ($\rho = .31$) was the strongest correlate of leadership. Conscientiousness ($\rho = .28$) and then Neuroticism and Openness to Experience ($\rho = -.24$ and $\rho = .24$, respectively) displayed the next strongest correlations with leadership. Both the confidence and credibility intervals excluded zero for these traits, indicating that we can be confident that the relationship of four of the Big Five traits to leadership is distinguishable from zero across situations. Finally, Agreeableness showed a relatively weak correlation with leadership ($\rho = .08$), although the confidence interval excluded zero. Across the five traits, 23.1% of the variance in the correlations was accounted for by statistical artifacts.

Table 3 provides the results of the analyses linking the lower order personality traits to leadership. Four traits displayed moderately strong correlations with leadership—sociability, dominance, achievement, and dependability. However, all mean correlations are nonzero (the limits of the 95% CIs excluded zero). Furthermore, when one examines the credibility intervals, only for locus of control did it include zero. Thus, most of the lower order traits included in the analysis had nonzero effects on leadership. Results provided mixed support for differential validity of the lower order

² We did not assess the reliability of our coding of dissertations because one author had independently coded each dissertation at the remote location where the dissertations were received. Because our coding of other studies exhibited high reliability and because it was costly to the library to request dissertations, we did not re-request them.

Table 2
Meta-Analysis of the Relationship Between the Big Five Personality Traits and Leadership

Trait	Average					80% CV		95% CI	
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD</i> _{ρ}	Lower	Upper	Lower	Upper
Neuroticism	48	8,025	-.17	-.24	.18	-.47	-.01	-.30	-.18
Extraversion	60	11,705	.22	.31	.17	.09	.53	.26	.36
Openness	37	7,221	.16	.24	.11	.09	.38	.19	.28
Agreeableness	42	9,801	.06	.08	.17	-.14	.29	.02	.13
Conscientiousness	35	7,510	.20	.28	.17	.06	.51	.22	.34

Note. *k* = Number of correlations; ρ = estimated corrected correlation; CV = credibility interval; CI = confidence interval. We used Whitener's (1990) formula for standard error of the mean correlation in computing confidence intervals.

traits when compared with the higher order Big Five traits. Locus of control and self-esteem displayed lower correlations with leadership than did Neuroticism (see below), but the indicators of Extraversion (sociability and dominance) and Conscientiousness (achievement and dependability) were somewhat more strongly related to leadership compared with the overall effects in Table 2. Thus, results for the so-called levels of analysis issue (Mount & Barrick, 1995a) were mixed.

An emerging body of research suggests that self-esteem and locus of control indicate the same factor as Neuroticism (e.g., Judge et al., 1998). Judge et al. labeled this broader concept *core self-evaluations*. On an exploratory basis, we conducted an overall analysis whereby these two traits were included as measures of Neuroticism. Accordingly, in an overall analysis paralleling the analysis reported in Table 2, the relationship between Neuroticism and leadership was estimated, including self-esteem and locus of control as measures of Neuroticism (scores were coded to reflect external locus of control or low self-esteem). The statistics resulting from this meta-analysis were as follows: *k* = 81; *N* = 19,134; average *r* = -.14; ρ = -.20; *SD* _{ρ} = .15; 80% credibility interval = -.40--.01; 95% CI = -.24--.16. These results are slightly weaker than the overall analysis results reported in Table 2, which makes sense in light of the fact that locus of control displayed a relatively weak correlation with leadership (ρ = .13).³

Table 4 displays the meta-analyzed correlations between the Big Five traits and the two leadership criteria. Across criteria, results reveal areas of consistency and some inconsistencies in the relation of the traits to the criteria. Extraversion and Openness displayed nonzero correlations with both criteria, and most traits (except for Agreeableness and leader emergence) showed nonzero mean correlations with the leadership criteria. Only for Extraversion and Openness, however, did the credibility intervals exclude zero across the criteria. For Conscientiousness, the credibility interval excluded zero for leader emergence but not for leadership effectiveness. For Neuroticism, that pattern was reversed. For neither of the criteria did the credibility intervals for Agreeableness exclude zero.

Another analysis investigated the degree to which personality-leadership relations generalized across different study settings. We divided the studies into three categories: (a) business—studies completed in business contexts, mostly those involving managers, supervisors, or executives; (b) government or military—studies of military officers or enlisted personnel, or students at military academies; studies of government employees (i.e., teachers, prin-

cipals); studies of political leaders; (c) students—studies with elementary (10% of correlations), high school (22% of correlations), or college (68% of correlations) students, completed either in natural or laboratory situations. As can be seen in Table 5, with few exceptions (Agreeableness and Conscientiousness in business settings, Openness and Agreeableness in government or military settings), the 95% CIs excluded zero, indicating that in most cases we can be confident that the average correlations are nonzero. However, when one examines the credibility intervals, Extraversion was the only trait that generalized across the three settings. Three other traits generalized across two of the three settings. Specifically, the credibility intervals for Neuroticism and Openness excluded zero in business and student settings (but not in military or government settings), whereas for Conscientiousness, the credibility intervals excluded zero in government or military and student settings. All traits were more strongly related to leadership in studies involving students.

Yukl and Van Fleet (1992) argued that leadership research has increasingly taken a holistic approach to the study of leader traits (as opposed to focusing on each trait as a separate predictor). Accordingly, we sought to determine the multivariate relationship of the set of Big Five traits to leadership. Using J. E. Hunter's (1992) regression program, we regressed leadership on the Big Five traits. To form the correlation matrix that served as input to the program, we used the meta-analytic estimates of the relationship between the Big Five traits and leadership in Tables 2 and 4, and Ones's (Ones, 1993; Ones, Viswesvaran, & Reiss, 1996) meta-analytic estimate of the intercorrelations among the Big Five traits. In accordance with Viswesvaran and Ones (1995), the sample size we used for the regressions was equal to the average

³ Huffcutt, Roth, and McDaniel (1996) noted that a concern with weighting studies by the sample size (*N*-weighting) is that a handful of studies may dominate the analysis. Accordingly, they developed a procedure that groups studies into three categories on the basis of sample size and thus gives less weight to extreme values. We used their weighting procedure to determine whether it would yield different results. The correlations of neuroticism, locus of control, and self-esteem with leadership by using the Huffcutt et al. (1996) scheme were substantially higher compared with the *N*-weighted analyses reported in Tables 2-3 (ρ = -.30, ρ = .28, and ρ = .40, respectively). Using the Huffcutt et al. (1996) procedure had a small effect on the correlations of the other traits with leadership (the average difference was .025).

Table 3
Meta-Analysis of the Relationship Between Lower-Order Personality Traits and Leadership

Trait	Average					80% CV		95% CI	
	<i>k</i>	<i>N</i>	<i>r</i>	ρ	<i>SD</i> _{ρ}	Lower	Upper	Lower	Upper
Locus of control	15	2,347	.08	.13	.14	-.04	.31	.05	.21
Self-esteem	9	7,451	.14	.19	.12	.04	.35	.11	.28
Sociability	19	5,827	.24	.37	.21	.10	.64	.22	.47
Dominance	31	7,692	.24	.37	.20	.11	.63	.29	.44
Achievement	16	4,625	.23	.35	.16	.14	.56	.27	.43
Dependability	16	5,020	.18	.30	.20	.04	.56	.19	.40

Note. *k* = Number of correlations; ρ = estimated corrected correlation; CV = credibility interval; CI = confidence interval.

sample size of all studies in the analysis ($N = 277$ for emergence, $N = 109$ for effectiveness, and $N = 200$ for overall).

The regression results are provided in Table 6. As is shown in the table, two traits, Extraversion and Openness, were significantly predictive of leadership across the criteria. However, in two of the three regressions (emergence and overall), Conscientiousness had the highest standardized regression coefficient ($\beta = .36$ and $\beta = .29$, respectively). Neuroticism was not significantly predictive of any of the criteria, and Agreeableness was predictive of just one (emergence), in a negative direction. Perhaps the most meaningful statistics were the strong and significant multiple correlations ($R = .53$, $R = .39$, and $R = .48$ for emergence, effectiveness, and overall, respectively) between the traits and leadership.⁴

The decision to correct correlations based on interrater criterion reliabilities is not one without controversy. K. R. Murphy and DeShon (2000) argued that raters may disagree for reasons other than random error (e.g., differential opportunity to observe subordinates). Thus, according to Murphy and DeShon, treating correlations among raters as a measure of reliability is inappropriate because it assumes that all lack of agreement is due to random error. One alternative is to use internal consistency reliability as the basis for corrections. However, because corrections based on internal consistency have a known (vs. potential) bias—they consign variance idiosyncratic to raters to the true variance component of job performance ratings (Schmidt & Hunter, 1996)—we believe corrections based on interrater reliability are, on balance, more appropriate than those based on internal consistency reliability. Nevertheless, we acknowledge that such corrections can be criti-

cized, and thus it is important to provide meta-analytic estimates under a range of alternatives to analyze the sensitivity of our results to the specific reliability measures used for corrections.

To correct the personality–leadership correlations for unreliability by using internal consistency estimates of criterion reliability, we consulted Viswesvaran et al.'s (1996) meta-analysis. These authors provided two estimates of reliability that are relevant here. Specifically, they reported an average internal consistency reliability of .77 for supervisory ratings of leadership and .61 for peer ratings of leadership. Although most of the leadership ratings in our meta-analysis are from peers, Viswesvaran et al.'s estimate for peer ratings was based on a small number of correlations ($k = 5$). Accordingly, for this sensitivity analysis we also used their estimate of the reliability of supervisory ratings of leadership because it was based on a larger number of correlations ($k = 21$). There is no reason to believe, other than second-order sampling error, that peer ratings would be less reliable than supervisory ratings of leadership.

In the overall analysis, by using Viswesvaran et al.'s (1996) estimate of the reliability of peer leadership ratings ($\alpha = .61$), the estimated corrected correlations of the Big Five traits with leadership were as follows: Neuroticism = $-.23$, Extraversion = $.30$, Openness = $.23$, Agreeableness = $.08$, and Conscientiousness = $.27$. Using Viswesvaran et al.'s estimate of the reliability of supervisory leadership ratings ($\alpha = .77$), we estimated the corrected correlations of the Big Five traits with leadership as follows: Neuroticism = $-.20$, Extraversion = $.27$, Openness = $.21$, Agreeableness = $.07$, and Conscientiousness = $.24$. Compared with the overall analysis in Table 2, the average correlations are lower when correcting correlations on the basis of internal consistency reliability, but only slightly so (.03 weaker on the basis of $\alpha = .77$ and .01 weaker on the basis of $\alpha = .61$). Furthermore, these alternative analyses did not change the results with respect to the confidence and credibility intervals in Table 2 (e.g., the correlations of Neuroticism, Extraversion, Openness, and Conscientiousness with leadership generalized across studies). Thus, correcting personality–leadership correlations on the basis of intrarater (as

Table 4
Relationship Between Big Five Traits and Leadership by Leadership Criteria

Trait	Leader emergence		Leadership effectiveness	
	<i>k</i>	ρ	<i>k</i>	ρ
Neuroticism	30	-.24 ^a	18	-.22 ^{a,b}
Extraversion	37	.33 ^{a,b}	23	.24 ^{a,b}
Openness	20	.24 ^{a,b}	17	.24 ^{a,b}
Agreeableness	23	.05	19	.21 ^a
Conscientiousness	17	.33 ^{a,b}	18	.16 ^a

Note. *k* = Number of correlations; ρ = estimated corrected correlation. ^a 95% confidence interval excluding zero. ^b 80% credibility interval excluding zero.

⁴ Ideally, we would have conducted a hierarchical moderator analysis wherein the type of criterion and study setting are nested within each of the Big Five traits. It was uncommon for studies of leadership emergence to be conducted in business settings and studies of leadership effectiveness to be conducted with student samples. As a result, in many cases there were too few correlations to conduct a fully hierarchical moderator analysis.

Table 5
*Relationship Between Big Five Traits and Leadership,
 by Study Setting*

Trait	Business		Government/ military		Students	
	<i>k</i>	ρ	<i>k</i>	ρ	<i>k</i>	ρ
Neuroticism	9	-.15 ^{a,b}	12	-.23 ^a	27	-.27 ^{a,b}
Extraversion	13	.25 ^{a,b}	10	.16 ^{a,b}	37	.40 ^{a,b}
Openness	9	.23 ^{a,b}	6	.06	22	.28 ^{a,b}
Agreeableness	10	-.04	11	-.04	21	.18 ^a
Conscientiousness	8	.05	6	.17 ^{a,b}	21	.36 ^{a,b}

Note. *k* = Number of correlations; ρ = estimated corrected correlation.
^a 95% confidence interval excluding zero. ^b 80% credibility interval excluding zero.

opposed to interrater) reliability did not dramatically alter the results.

Discussion

In reviewing the literature on trait theories of leadership, Bass (1990) noted two pertinent questions: (a) What traits distinguish leaders from other people? and (b) What is the magnitude of those differences? Despite considerable research on this topic in the past century and a previous meta-analytic review (Lord et al., 1986), surprisingly little consensus has emerged in answering the two questions Bass posed in his review. Using the five-factor model as an organizing framework, we sought to answer these questions in a more definitive manner than what has been possible in the past.

The relatively strong multiple correlation ($R = .39-.53$) between the Big Five traits and the leadership criteria suggest that the Big Five typology is a fruitful basis for examining the dispositional predictors of leadership. Given that many reviewers of the literature consider trait theory to be obsolete (Conger & Kanungo, 1998) or only applicable in certain situations (Yukl & Van Fleet, 1992), this is an important finding. Although other reviewers of the literature have argued in favor of trait theory (e.g., Kirkpatrick & Locke, 1991), this study—like Lord et al. (1986)—provides empirical data to substantiate this optimism. In addition to the comprehensiveness of our review, we believe that the primary reason for the more encouraging results is the use of the five-factor model as an organizing framework. As Kenny and Zaccaro (1983) noted,

one reason past research failed to identify traits correlated with leadership is that many purportedly different traits were studied, with few of the same traits being investigated across studies. This points to one of the main benefits of the five-factor model. Digman (1989) noted,

Many reviewers despaired at the lack of organization in the field of personality . . . a great majority—if not all—of our verbally based personality constructs can be housed somewhere within that [five-factor] structure, bringing an orderliness to a field long in need of one. (p. 196)

In using the five-factor model to organize these myriad traits, the present study sheds considerable light on the dispositional basis of leadership.

Turning to the specific traits, Extraversion emerged as the most consistent correlate of leadership. Not only was it the strongest correlate of leadership in the combined analysis, but it also displayed a nonzero effect in all analyses—when controlling for the other Big Five traits—and when broken down in the moderator analysis by criteria and sample type. Thus, these results suggest that Extraversion is the most important trait of leaders and effective leadership. As expected, results also confirmed that Extraversion was more strongly related to leader emergence than to leader effectiveness. If attempted leadership is more likely to result in leader emergence than it is in leadership effectiveness, the results for Extraversion make sense, as both sociable and dominant people are more likely to assert themselves in group situations.

After Extraversion, Conscientiousness and Openness to Experience were the strongest and most consistent correlates of leadership. Conscientiousness displayed the second strongest correlation with leadership and, in the multivariate analysis (by using the *N*-weighted correlations), was the strongest predictor of leadership in two of the three regressions. Conscientiousness was more strongly related to leader emergence than to leadership effectiveness; the organizing activities of conscientious individuals (e.g., note taking, facilitating processes) may allow such individuals to quickly emerge as leaders.

Of the Big Five traits, Openness to Experience is the most controversial and least understood. One of the problems is that, with a few exceptions, such as creativity and sociopolitical attitudes (cf. McCrae, 1996), Openness has not been related to many applied criteria. Openness to Experience does appear to be related to leadership: In business settings, it—along with Extraversion—was the strongest dispositional correlate of leadership. Although

Table 6
Regression of Leadership on Big Five Traits

Trait	Leadership emergence			Leadership effectiveness			Overall analysis		
	β/R	<i>SE</i>	<i>t</i>	β/R	<i>SE</i>	<i>t</i>	β/R	<i>SE</i>	<i>t</i>
Neuroticism	-.09	.06	-1.67	-.10	.10	-1.04	-.10	.07	-1.54
Extraversion	.30	.05	5.90*	.18	.09	2.00*	.27	.06	4.30*
Openness	.21	.05	4.06*	.19	.09	2.10*	.21	.06	3.25*
Agreeableness	-.14	.05	-2.66*	.10	.10	1.07	-.09	.07	-1.41
Conscientiousness	.36	.05	6.88*	.12	.09	1.26	.29	.07	4.48*
Multiple <i>R</i>	.53	.05	10.86*	.39	.09	4.55*	.48	.06	8.03*

Note. With the exception of the multiple *R* estimates in the last row, all estimates in the β/R column are standardized regression coefficients.

* $p < .01$.

the mean correlation for Neuroticism was distinguishable from zero, it failed to emerge as a significant predictor of leadership in the multivariate analysis, which was probably due to the fact that Neuroticism displays the highest average correlation with the other Big Five traits (Ones et al., 1996).

Overall, Agreeableness was the least relevant of the Big Five traits. However, this overall result is masked somewhat by differences in criteria and setting. There were two situations in which Agreeableness was related to leadership—when the criterion was effectiveness and with student samples. Because agreeable individuals tend to be passive and compliant, it makes sense they would be less likely to emerge as leaders. This was found to be particularly true in field studies (business and government or military settings) where the “conforming to others’ wishes” (Graziano & Eisenberg, 1996, p. 796) nature of agreeable individuals may be most likely to evidence itself.

Results were equivocal as to whether the Big Five constructs or the lower order traits were better suited to predict leadership. In the cases of Extraversion, the facets were more predictive—measures of dominance and sociability better predicted leadership than did overall measures of Extraversion. Thus, some support is provided for the relative merits of lower order traits, although two caveats should be kept in mind. First, the test is indirect as almost no studies included measures of both facets along with the five-factor constructs. Thus, it is possible that differences in validity are confounded with other study characteristics. Second, it was not possible to develop facets for every Big Five trait (e.g., Openness to Experience, Agreeableness). Future research should look into this issue further.

Results varied somewhat by criteria and study setting. The Big Five traits predicted leader emergence slightly better than they predicted leadership effectiveness, but the rank order of the traits’ influence on leadership varied. For leader emergence, Extraversion and Conscientiousness displayed the strongest correlations; the relationship of Openness to Experience to leader emergence also generalized across studies. For leadership effectiveness, three traits (Neuroticism, Extraversion, and Openness) displayed correlations that generalized across studies, and whereas the correlations involving Agreeableness and Conscientiousness were more variable across studies, the mean correlations were nonzero and moderate in magnitude ($\rho = .21$ and $\rho = .16$, respectively).

The Big Five traits predicted student leadership better than leadership in government or military settings (business settings were somewhat in between). Personality may have better predicted student leadership because, in many of the studies that we reviewed, the situations were relatively unstructured with few rules or formally defined roles (e.g., leader emergence in teams of students in an introduction to psychology class or election of dormitory leaders of students in a residence hall). As House, Shane, and Herold (1996) noted, weak situations allow dispositional forces to be more powerful. By the same token, most individuals would consider government organizations to be relatively bureaucratic and military organizations to be rule oriented, which might suppress dispositional effects.

There is a second reason why the Big Five traits may have predicted leadership emergence and student leadership more strongly than they predicted leadership effectiveness and leadership in business, government, or the military. It is in student situations, where student participants in group exercises are being

rated on the extent to which they emerged as leaders, that individuals’ implicit leadership theories would be expected to have the greatest influence. Thus, it is possible that in both of these situations (students and leadership emergence) the relations we found between personality and leadership reflect, at least in part, individuals’ naive conceptions of leadership.

Future Research

The results of this meta-analysis show that, overall, Extraversion, Conscientiousness, Openness, and Neuroticism are useful traits in relation to leadership. Collectively, the results provide support for the relevance of the five-factor model in leadership research. Previous research notwithstanding, however, we have a relatively poor idea of not only which traits are relevant, but why. Is Neuroticism negatively related to leadership because neurotic individuals are less likely to attempt leadership, because they are less inspirational, or because they have lower expectations of themselves or others? Similarly, Extraversion may be related to leadership because extraverts talk more, and talking is strongly related to emergent leadership (Bass, 1990). Alternatively, it may be that individuals implicitly expect leaders to be extraverted. Implicit views of leaders include aspects of both sociability (“outgoing”) and assertiveness (“aggressive,” “forceful”; Lord et al., 1984), or extraverts could be better leaders due to their expressive nature or the contagion of their positive emotionality. Open individuals may be better leaders because they are more creative and are divergent thinkers, because they are risk takers, or because their tendencies for esoteric thinking and fantasy (McCrae, 1996) make them more likely to be visionary leaders. Agreeableness may be weakly correlated with leadership because it is both a hindrance (agreeable individuals tend to be passive and compliant; Graziano & Eisenberg, 1997) and a help (agreeable individuals are likeable and empathetic; Hogan & Hogan, 2000) to leaders. Finally, is Conscientiousness related to leadership because conscientious individuals have integrity and engender trust (R. Hogan et al., 1994); because they excel at process aspects of leadership, such as setting goals; or because they are more likely to have initiative and persist in the face of obstacles? Our study cannot address these process-oriented issues, but future research should attempt to explain the linkages between the Big Five traits and leadership.

We also believe there are many situational factors that may moderate the validity of personality in predicting leadership. The literature on various leadership theories provides suggestions for possible moderators of the effectiveness of leadership traits. For example, following from substitutes for leadership (Kerr & Jermier, 1978), Conscientiousness may be more related to leadership effectiveness when task structure is low, because with ill-defined tasks structure is needed to enhance followers’ expectancies of successful goal completion. Similarly, leader Agreeableness should be less relevant for intrinsically satisfying tasks because the task itself provides positive feedback and encouragement. Finally, other aspects of Kerr and Jermier’s (1978) theory may exert moderating effects, especially organizational inflexibility and spatial distance. Fiedler’s LPC theory (Fiedler, 1971) might also provide relevant moderators. For example, a leader’s personality might matter most when he or she has the ability to influence the group (high situational control).

Contributions and Limitations

In discussing their findings on the basis of their meta-analysis of the relation between the Big Five personality traits and job performance, Barrick and Mount (1991) commented, "This study differs from previous studies by using an accepted taxonomy to study the relation of personality to job performance criteria. The results illustrate the benefits of using this classification scheme to communicate and accumulate empirical findings" (p. 17). We believe the same to be true of the present study in terms of leadership. Through the use of the five-factor model, we were able to shed greater light on the personological basis of leadership than what has been the case in the past.

This study was not the first meta-analysis to examine the relationship between personality traits and leadership, but it does advance knowledge beyond Lord et al. (1986). Lord et al. based their meta-analysis on the traits included in Mann's (1959) review. Given that the five-factor model had not won widespread acceptance at that time, this was not an unreasonable decision. Mann struggled with a means to organize the disparate measures used in the studies he reviewed, complaining, "The field of personality assessment is test rich and integration poor" (p. 242). In the end, Mann did not describe his organizing criteria in much detail, noting, "The seven dimensions or factors chosen are those frequently isolated in the study of personality by factor analytic techniques, although two emerge only as second-order factors in some reports" (p. 243). Judged from the perspective of today, the five-factor model is clearly superior to the organizing framework for personality in Mann's review. The five-factor model has been supported in hundreds of studies, whereas little research has used Mann's classification. Our purpose here is not to criticize Mann or Lord et al. Rather, it is to point out the benefits of an alternative structure for organizing the traits relating personality to leadership. It seems likely that our results produced stronger and more consistent personality-leadership relations because we used the five-factor model as an organizing framework.

From one perspective, the criteria of this study are quite similar to Lord et al. (1986) in that our measures of leadership were largely perceptual in nature. However, we took a somewhat different approach from Lord et al. in distinguishing leader emergence from leadership effectiveness. In our coding, we were able to reliably make this distinction. More important, because this is an important distinction conceptually, we believe that it is important to make such a distinction empirically. Regardless of this distinction, the fact remains that our criterion measures carry with them all of the possible attributional biases and idiosyncratic rater variance found in ratings of job performance. Thus, it is possible that these results provide support for Lord et al.'s implicit theory of leadership (e.g., Lord, 1985). Specifically, the Big Five traits may have been related to leadership because the five-factor model does a good job of summarizing individuals' preconceptions of the traits of effective leaders. As noted by Emrich (1999), "leadership perception is a type of person perception" (p. 1001). In short, our results may simply indicate a close correspondence between the way we see people's personalities and our stereotypical conceptions of the characteristics of leaders.

It is possible to take this point even further. An indirect test of the validity of implicit leadership theory in this context (relation of five-factor model to leadership perceptions) would be to compare the degree to which the traits predict leadership perceptions for

student samples as opposed to samples comprised of more experienced individuals (such as in business and government or military settings). The automatic use of implicit theories as a basis for categorizing individuals (as leaders in this case) is more likely when accurate retrieval of information is not as important and less likely when "perceivers are motivated to be accurate" (Engle & Lord, 1997, p. 990). It seems reasonable to expect that individuals who rate their direct supervisors in a business setting are more likely to be motivated to be accurate than are undergraduate students who are typically participating in an exercise for partial course credit.

Indeed, the results provide support for this explanation. As revealed by the results in Table 5, every one of the Big Five traits displayed nonzero relations with leadership perceptions in student settings, whereas the traits were less consistently related to such perceptions in the other settings. Furthermore, if we regress leadership perceptions on the Big Five traits in the three settings, following the same procedure as before, the multiple correlation is much stronger in student settings ($R = .63$) than in business ($R = .55$) or government or military ($R = .29$) settings. Providing additional support for this notion, a comparison of the multiple R for emergence and effectiveness reveals that the traits are better predictors in situations in which individuals have only limited opportunity to observe leadership behaviors (emergence). Although these results are not a direct test of the relevance of implicit leadership theory to the five-factor model of personality, they do provide some supportive evidence.

Given our results, one might reasonably conclude that the relationships we found are contaminated by individuals' implicit theories of leadership. However, there is reason to believe that our results are not solely based on such perceptions. In an attempt to determine the content of individuals' naive leadership conceptions, Offerman, Kennedy, and Wirtz (1994) conducted a series of studies. Across multiple samples—students and employees—they found that of eight primary dimensions of people's implicit theories, four were found to be most characteristic of leaders, effective leaders, and supervisors. One of the four was Sensitivity, a dimension comprised of variables such as sympathetic, compassionate, warm, forgiving, understanding. Each of these terms is a trait descriptor for Agreeableness. Hence, if our results reflect only individuals' implicit theories, we should have found some of our strongest relationships between leadership and Agreeableness. In fact, the opposite was true, as Agreeableness was the trait least associated with leadership across criteria and situations.

It is important to note that implicit leadership theory does not assume that implicit traits are truly irrelevant to leadership, only that generalized perceptions may contaminate individuals' ratings of leadership emergence or effectiveness. One means of disentangling the situation is to collect objective measures of leadership effectiveness. However, as R. Hogan et al. (1994) noted,

The data needed to make this evaluation are often difficult to obtain or badly contaminated by external factors. Perhaps the best alternative is to ask subordinates, peers, and superiors to evaluate a leader. The empirical literature suggests that these sources of information are correlated. (p. 496)

Thus, we do not believe, and implicit leadership theory does not argue, that evaluations of leadership are improper or inappropriate. Rather, the issue is that we cannot be sure whether the traits that

lead to perceptions of leadership emergence or effectiveness are the same as those that cause a leader's group to be effective.

Finally, it is important to note that "people's implicit theories do not simply appear, fully formed, out of nowhere." Rather, they are "generated and refined over time as a result of *people's experiences with actual leaders* [italics added]" (Offerman et al., 1994, p. 45). Thus, although it is possible that our results simply reflect implicit leadership theories, it seems equally plausible that implicit leadership theories are mere reflections of veridical relationships between personality and leadership.

An alternative to perceptual measures of leadership effectiveness is to consider other "objective" measures, such as job level and career success. Although position attained and other indicators of career success may be reasonable proxies for leadership, they do not appear to assess leadership per se. Indeed, a recent article linking personality to career success (Judge, Higgins, Thoresen, & Barrick, 1999) never mentioned the words *leader* or *leadership*. Furthermore, such objective indicators are subject to measurement errors of their own and to extraneous influences (R. Hogan et al., 1994). For example, group performance is contaminated by the individual abilities of the group members and by any group processes affecting group performance that have nothing to do with leadership. Measures such as salary, promotions, and other indicators of career success are similarly contaminated. Nevertheless, future research relating leader personality to objective measures of group performance is needed. (See LePine, Hollenbeck, Ilgen, & Hedlund, 1997.)

A limitation of the meta-analysis is that there may be nested moderator effects involving the lower order traits. Specifically, traits within a Big Five dimension may be differentially associated with leadership across the study settings. For example, dominance may display greater associations with leadership in student settings than in military or government settings. Unfortunately, because of a small number of studies in various cells, we could not test an interactive model involving Lower Order Trait \times Study Setting.

In sum, trait theories have had a curious history in leadership research. The perceived efficacy of the trait approach has waxed and waned throughout the past century. Nonetheless, progress has occurred, most notably through a prior meta-analysis (Lord et al., 1986). We hope this study, although it raises questions as well as answers others, may help bring further order to this research area. Results in this study provide strong evidence in favor of the trait approach and suggest that we have come a long way since J. A. Murphy (1941) remarked, "Leadership does not reside in the person" (p. 674), and Jenkins (1947) concluded, "No single trait or group of characteristics has been isolated which sets off the leader from members of his group" (pp. 74–75). On the basis of the results presented in this study, future research should develop process models that illuminate the dispositional source of leadership.

References

References marked with an asterisk indicate studies included in the meta-analysis.

- *Adams, J. (1984). Women at West Point: A three-year perspective. *Sex Roles, 11*, 525–541.
- Anderson, C. R., & Schneier, C. E. (1978). Locus of control, leader behaviors and leader performance among management students. *Academy of Management Journal, 21*, 690–698.
- Anderson, G., & Viswesvaran, C. (1998, April). *An update of the validity of personality scales in personnel selection: A meta-analysis of studies published after 1992*. Paper presented at the 13th Annual Conference of the Society for Industrial and Organizational Psychology, Dallas, TX.
- *Andrea, R. K., & Conway, J. A. (1982). Linear and curvilinear considerations of Machiavellianism and school leader effectiveness. *School Psychology International, 3*, 203–212.
- Armilla, J. (1967). Predicting self-assessed social leadership in a new culture with the MMPI. *Journal of Social Psychology, 73*, 219–225.
- *Bahr, H. M., & Martin, T. K. (1983). "And thy neighbor thyself": Self-esteem and faith in people as correlates of religiosity and family solidarity among Middletown High School students. *Journal for the Scientific Study of Religion, 22*, 132–144.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1–26.
- *Bass, B. M. (1961). Some aspects of attempted, successful, and effective leadership. *Journal of Applied Psychology, 45*, 120–122.
- Bass, B. M. (1990). *Bass and Stogdill's handbook of leadership*. New York: Free Press.
- *Bass, B. M., McGehee, C. R., Hawkins, W. C., Young, P. C., & Gebel, A. S. (1953). Personality variables related to leaderless group discussion behavior. *Journal of Abnormal and Social Psychology, 48*, 120–129.
- *Batlis, N. C., & Green, P. C. (1979). Leadership style emphasis and related personality attributes. *Psychological Reports, 44*, 587–592.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*, 155–162.
- Benet-Martínez, V., & John, O. P. (1998). *Los Cinco Grandes* across cultures and ethnic groups: Multitrait-multimethod analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology, 75*, 729–750.
- *Bennett, A., & Derevensky, J. (1995). The medieval kingdom topology: Peer relations in kindergarten children. *Psychology in the Schools, 32*, 130–141.
- Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological Bulletin, 117*, 187–215.
- Bowden, A. O. (1926). A study of the personality of student leaders in the United States. *Journal of Abnormal and Social Psychology, 21*, 149–160.
- *Brandstatter, H., & Farthofer, A. (1997). Personality in social influence across tasks and groups. *Small Group Research, 28*, 146–163.
- Caprara, G. V., Barbaranelli, C., Borgogni, L., & Perugini, M. (1993). The "Big Five Questionnaire": A new questionnaire to assess the five factor model. *Personality and Individual Differences, 15*, 281–288.
- Carlyle, T. (1907). *On heroes, hero-worship, and the heroic in history*. Boston: Houghton Mifflin.
- *Carter, L., & Nixon, M. (1949). Ability, perceptual, personality, and interest factors associated with different criteria of leadership. *Journal of Psychology, 27*, 377–388.
- Cattell, R. B., & Stice, G. F. (1957). *Handbook for the Sixteen Personality Factor Questionnaire*. Champaign, IL: Institute of Personality and Ability Testing.
- *Chakraborti, P. K., Kundu, R., & Rao, J. (1983). Prediction of leadership traits of teachers from certain other personality variables. *Personality Study and Group Behaviour, 3*, 74–80.
- *Charlier, P. J. (1977). *A study of the relationship between selected personal and interpersonal dimensions of elementary principals and their leadership behavior*. Unpublished doctoral dissertation, Temple University, Philadelphia.
- *Chemers, M. M., Watson, C. B., & May, S. T. (2000). Dispositional affect and leadership effectiveness: A comparison of self-esteem, optimism, and efficacy. *Personality and Social Psychology Bulletin, 26*, 267–277.
- *Christie, M. (1981). *A study of the relationship of locus of control and job satisfaction to leadership*. Unpublished doctoral dissertation, University of Maryland, College Park.

- Conger, J. A., & Kanungo, R. N. (1998). *Charismatic leadership in organizations*. Thousand Oaks, CA: Sage.
- Conway, J. M., & Huffcutt, A. I. (1997). Psychometric properties of multisource performance ratings: A meta-analysis of subordinate, supervisor, peer, and self-ratings. *Human Performance, 10*, 331–360.
- Costa, P. T., Jr., & McCrae, R. R. (1988). Personality in adulthood: A six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. *Journal of Personality and Social Psychology, 54*, 853–863.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor (NEO-FFI) Inventory professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P. T., Jr., McCrae, R. R., & Dye, D. A. (1991). Facet scales for agreeableness and conscientiousness: A revision of the NEO Personality Inventory. *Personality and Individual Differences, 12*, 887–898.
- Cowley, W. H. (1931). Three distinctions in the study of leaders. *Journal of Abnormal and Social Psychology, 26*, 304–313.
- Daft, R. L. (1999). *Leadership: Theory and practice*. Orlando, FL: Dryden Press.
- *DeBolt, J. W., Liska, A. E., Love, W., & Stahlman, R. W. (1973). Status-role consequences of internal-external control of reinforcement. *Psychological Reports, 32*, 307–311.
- *DeBolt, J. W., Liska, A. E., & Weng, B. R. (1976). Replications of association between internal locus of control and leadership in small groups. *Psychological Reports, 38*, 470.
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*, 197–229.
- Digman, J. M. (1989). Five robust trait dimensions: Development, stability, and utility. *Journal of Personality, 57*, 195–214.
- *Doll, R. E., & Gunderson, E. K. (1970). The relative importance of selected behavioral characteristics of group members in an extreme environment. *Journal of Psychology, 75*, 231–237.
- *Drake, R. M. (1944). A study of leadership. *Character and Personality, 12*, 285–289.
- *EchoHawk, M., & Parsons, O. A. (1977). Leadership vs. behavioral problems and belief in personal control among American Indian youth. *Journal of Social Psychology, 102*, 47–54.
- *Edwards, C. A. (1990). *Leadership, social networks, and personal attributes in school age girls*. Unpublished doctoral dissertation, University of North Carolina, Chapel Hill.
- *Ellis, R. J. (1988). Self-monitoring and leadership emergence in groups. *Personal and Social Psychology Bulletin, 14*, 681–693.
- Emrich, C. G. (1999). Context effects in leadership perception. *Personality and Social Psychology Bulletin, 25*, 991–1006.
- Engle, E. M., & Lord, R. G. (1997). Implicit theories, self-schemas, and leader-member exchange. *Academy of Management Journal, 40*, 988–1010.
- Eysenck, H. J. (1990). Biological dimensions of personality. In E. Pervin (Ed.), *Handbook of personality* (pp. 244–276). New York: Guilford Press.
- Eysenck, H. J. (1992). Four ways five factors are *not* basic. *Personality and Individual Differences, 13*, 667–673.
- Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Bulletin, 2*, 290–309.
- Fiedler, F. E. (1971). Validation and extension of the contingency model of leadership effectiveness: A review of empirical findings. *Psychological Bulletin, 76*, 128–148.
- *Flemming, E. G. (1935). A factor analysis of the personality of high school leaders. *Journal of Applied Psychology, 5*, 596–605.
- Friedman, H. S., Tucker, J. S., Schwartz, J. E., Martin, L. R., Tomlinson-Keasey, C., Wingard, D. L., & Criqui, M. H. (1995). Childhood conscientiousness and longevity: Health behaviors and cause of death. *Journal of Personality and Social Psychology, 68*, 696–703.
- *George, E. I., & Abraham, P. A. (1966). A comparative study of leaders and non-leaders among pupils in secondary schools. *Journal of Psychological Researches, 10*, 116–120.
- Goldberg, L. R. (1990). An alternative “description of personality”: The Big-Five factor structure. *Journal of Personality and Social Psychology, 59*, 1216–1229.
- Goldberg, L. R. (1999). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. J. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (Vol. 7, pp. 7–28). Tilburg, the Netherlands: Tilburg University Press.
- *Gordon, L. V. (1951). Personal factors in leadership. *Journal of Social Psychology, 36*, 245–248.
- Gough, H. G. (1957). *Manual for the California Psychological Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Gough, H. G. (1988). *Manual for the California Psychological Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- *Gough, H. G. (1989). A leadership index on the California Psychological Inventory. *Journal of Counseling Psychology, 16*, 283–289.
- Gough, H. G. (1990). Testing for leadership with the California Psychological Inventory. In K. E. Clark & M. B. Clark (Eds.), *Measures of leadership* (pp. 355–379). West Orange, NJ: Leadership Library of America.
- *Gough, H. G., & Heilbrun, A. B., Jr. (1983). *The Adjective Check List manual—1983 edition*. Palo Alto, CA: Consulting Psychologists Press.
- *Gough, H. G., Lazzari, R., Fioravanti, M., & Stracca, M. (1978). An Adjective Check List scale to predict military leadership. *Journal of Cross-Cultural Psychology, 9*, 381–401.
- *Gowan, J. C. (1955). Relationship between leadership and personality measures. *Journal of Educational Research, 48*, 623–627.
- Graziano, W. G., & Eisenberg, N. H. (1997). Agreeableness: A dimension of personality. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 795–824). San Diego, CA: Academic Press.
- *Greenwood, J. M., & McNamara, W. J. (1969). Leadership styles of structure and consideration and managerial effectiveness. *Personnel Psychology, 22*, 141–152.
- *Hanawalt, N. G., & Richardson, H. M. (1944). Leadership as related to the Bernreuter personality measures: IV. An item analysis of responses of adult leaders and non-leaders. *Journal of Applied Psychology, 28*, 397–411.
- *Hiers, J. M., & Heckel, R. V. (1977). Seating choice, leadership, and locus of control. *Journal of Social Psychology, 103*, 313–314.
- Hill, N. C., & Ritchie, J. B. (1977). The effect of self-esteem on leadership and achievement: A paradigm and a review. *Group and Organization Studies, 2*, 491–503.
- *Hogan, J. C. (1978). Personological dynamics of leadership. *Journal of Research in Personality, 12*, 390–395.
- Hogan, R., Curphy, G. J., & Hogan, J. (1994). What we know about leadership: Effectiveness and personality. *American Psychologist, 49*, 493–504.
- Hogan, R., & Hogan, J. (1995). *Hogan Personality Inventory manual* (2nd ed.). Tulsa, OK: Hogan Assessment Systems.
- Hogan, R., & Hogan, J. (2000). *Leadership and socio-political intelligence*. Unpublished manuscript, University of Tulsa, OK.
- *Hollander, E. P. (1954). Authoritarianism and leadership choice in a military setting. *Journal of Abnormal and Social Psychology, 49*, 365–370.
- *Holmes, C. M., Sholley, B. K., & Walker, W. E. (1980). Leader, follower, and isolate personality patterns in Black and White emergent leadership groups. *Journal of Psychology, 105*, 41–46.
- Hough, L. (1992). The “Big Five” personality variables—construct confusion: Description versus prediction. *Human Performance, 5*, 139–155.
- Hough, L. M., Ones, D. S., & Viswesvaran, C. (1998, April). *Personality correlates of managerial performance constructs*. Paper presented at the

- 13th Annual Conference of the Society for Industrial and Organizational Psychology, Dallas, TX.
- *Houltzman, W. H. (1952). Adjustment and leadership: A study of the Rorschach test. *Journal of Social Psychology, 36*, 179–189.
- House, R. J., & Aditya, R. N. (1997). The social scientific study of leadership: Quo vadis? *Journal of Management, 23*, 409–473.
- House, R. J., & Howell, J. M. (1992). Personality and charismatic leadership. *Leadership Quarterly, 3*, 81–108.
- House, R. J., & Podsakoff, P. M. (1994). Leadership effectiveness. In J. Greenberg (Ed.), *Organizational behavior: The state of the science* (pp. 45–82). Hillsdale, NJ: Erlbaum.
- House, R. J., Shane, S. A., & Herold, D. M. (1996). Rumors of the death of dispositional research are vastly exaggerated. *Academy of Management Review, 21*, 203–224.
- *House, R. J., Spangler, W. D., & Woycke, J. (1991). Personality and charisma in the U.S. presidency: A psychological theory of leader effectiveness. *Administrative Science Quarterly, 36*, 364–396.
- *Howell, J. M., & Avolio, B. J. (1993). Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated-business-unit performance. *Journal of Applied Psychology, 78*, 891–902.
- Huffcutt, A. I., Roth, P. L., & McDaniel, M. A. (1996). A meta-analytic investigation of cognitive ability in employment interview evaluations: Moderating characteristics and implications for incremental validity. *Journal of Applied Psychology, 81*, 459–473.
- *Huffty, J. E. (1979). *The relationship of personality types, leadership styles, and effectiveness with attitudes toward women in a selected group of public school superintendents*. Unpublished doctoral dissertation, East Texas State University, Commerce.
- Hughes, R. L., Ginnett, R. C., & Curphy, G. J. (1996). *Leadership*. Boston: Irwin McGraw-Hill.
- *Hunter, E. C., & Jordan, A. M. (1939). An analysis of qualities associated with leadership among college students. *Journal of Educational Psychology, 30*, 497–509.
- Hunter, J. E. (1992). *REGRESS: A multiple regression program in BASICA*. East Lansing: Michigan State University, Department of Psychology.
- Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis*. Newbury Park, CA: Sage Publications.
- Hurtz, G. M., & Donovan, J. J. (2000). Personality and job performance: The Big Five revisited. *Journal of Applied Psychology, 85*, 869–879.
- Jackson, D. N. (1967). *Personality Research Form manual*. Goshen, NY: Research Psychologists Press.
- Jenkins, W. O. (1947). A review of leadership studies with particular reference to military problems. *Psychological Bulletin, 44*, 54–79.
- *Johnson, A. L., Luthans, F., & Hennessey, H. W. (1984). The role of locus of control in leader influence behavior. *Personnel Psychology, 37*, 61–75.
- *Judge, T. A. (2000a). [Leadership effectiveness in the 21st century]. Unpublished raw data.
- *Judge, T. A. (2000b). [Transformational leadership in the Administrative Institute]. Unpublished raw data.
- *Judge, T. A., & Bono, J. E. (2000). Five-factor model of personality and transformational leadership. *Journal of Applied Psychology, 85*, 751–765.
- Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*, 80–92.
- *Judge, T. A., & Colbert, A. (2000a). [Personality and leadership among students in 6J:262, Leadership and Personal Development]. Unpublished raw data.
- *Judge, T. A., & Colbert, A. (2000b). [Personality and leadership among students in 6J:262, Leadership and Personal Development—Muscatine, IA]. Unpublished raw data.
- Judge, T. A., Higgins, C., Thoresen, C. J., & Barrick, M. R. (1999). The Big Five personality traits, general mental ability, and career success across the life span. *Personnel Psychology, 52*, 621–652.
- Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology, 83*, 17–34.
- *Kalma, A. P., Visser, L., & Peeters, A. (1993). Sociable and aggressive dominance: Personality differences in leadership style? *Leadership Quarterly, 4*, 45–64.
- *Karnes, F. A., Chauvin, J. C., & Trant, T. J. (1984). Leadership profiles as determined by the 16 PF scores of honors college students. *Psychological Reports, 55*, 615–616.
- *Karnes, F. A., & D'Ilio, V. R. (1990). Correlations between personality and leadership concepts and skills as measured by the High School Personality Questionnaire and the Leadership Skills Inventory. *Psychological Reports, 66*, 851–856.
- *Karnes, F. A., & McGinnis, J. C. (1996). Scores on indicators of leadership skills, locus of control, and self-actualization for student leaders in grades 6 to 10. *Psychological Reports, 78*, 1235–1240.
- *Kendall, M. J. (1981). *The role of personality on leadership dimensions among United States Army adjutant general corps officers*. Unpublished doctoral dissertation, University of Southern California, Los Angeles, CA.
- Kenny, D. A., & Zaccaro, S. J. (1983). An estimate of variance due to traits in leadership. *Journal of Applied Psychology, 68*, 678–685.
- Kerr, S., & Jermier, J. M. (1978). Substitutes for leadership: Their meaning and measurement. *Organizational Behavior and Human Performance, 22*, 375–403.
- Kirkpatrick, S. A., & Locke, E. A. (1991). Leadership: Do traits matter? *Academy of Management Executive, 5*, 48–60.
- Kohs, S. C., & Irle, K. W. (1920). Prophesying army promotion. *Journal of Applied Psychology, 4*, 73–87.
- *Kureshi, A., & Fatima, B. (1984). Power motive among student leaders and non-leaders: Testing the affective-arousal model. *Journal of Psychological Researches, 28*, 21–24.
- *Landau, E., & Weissler, K. (1990). Tracing leadership in gifted children. *Journal of Psychology, 125*, 681–688.
- LePine, J. A., Hollenbeck, J. R., Ilgen, D. R., & Hedlund, J. (1997). Effects of individual differences on the performance of hierarchical decision-making teams: Much more than g. *Journal of Applied Psychology, 82*, 803–811.
- *Linimon, D., Barron, W. L., & Falbo, T. (1984). Gender differences in perceptions of leadership. *Sex Roles, 11*, 1075–1089.
- *Lonetto, R., & Williams, D. (1974). Personality, behavioural and output variables in a small group task situation: An examination of consensual leader and non-leader differences. *Canadian Journal of Behavioral Science, 6*, 59–74.
- Lord, R. G. (1985). An information processing approach to social perception, leadership and behavior measurement in organizations. *Research in Organizational Behavior, 7*, 87–128.
- Lord, R. G., De Vader, C. L., & Alliger, G. M. (1986). A meta-analysis of the relation between personality traits and leadership perceptions: An application of validity generalization procedures. *Journal of Applied Psychology, 71*, 402–410.
- Lord, R. G., Foti, R. J., & De Vader, C. L. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. *Organizational Behavior and Human Performance, 34*, 343–378.
- *MacNitt, R. D. (1930). *Introversion and extroversion in the high school*. Unpublished doctoral dissertation, University of Michigan, Ann Arbor.
- *Makiney, J. D., Marchioro, C. A., & Hall, R. J. (April, 1999). *Relations of leader perceptions to personality, leadership style and self schema*. Paper presented at 14th Annual Meeting of the Society for Industrial and Organizational Psychology, Atlanta, GA.
- Mann, R. D. (1959). A review of the relationships between personality and performance in small groups. *Psychological Bulletin, 56*, 241–270.

- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, 52, 1258–1265.
- McCrae, R. R. (1996). Social consequences of experiential openness. *Psychological Bulletin*, 120, 323–337.
- McCrae, R. R., & Costa, P. T., Jr. (1997). Personality trait structure as a human universal. *American Psychologist*, 52, 509–516.
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 2, 175–215.
- *McCullough, P. M., Ashbridge, D., & Pegg, R. (1994). The effect of self-esteem, family structure, locus of control, and career goals on adolescent leadership behavior. *Adolescence*, 29, 605–611.
- *Mills, C. J., & Bohannon, W. E. (1980). Personality characteristics of effective state police officers. *Journal of Applied Psychology*, 65, 680–684.
- Mount, M. K., & Barrick, M. R. (1995a). The Big Five personality dimensions: Implications for research and practice in human resources management. *Research in Personnel and Human Resources Management*, 13, 153–200.
- Mount, M. K., & Barrick, M. R. (1995b). *Manual for the Personal Characteristics Inventory*. Unpublished manuscript.
- Murphy, J. A. (1941). A study of the leadership process. *American Sociological Review*, 6, 674–687.
- Murphy, K. R., & DeShon, R. (2000). Interrater correlations do not estimate the reliability of job performance ratings. *Personnel Psychology*, 53, 873–900.
- *Nath, M., & Scriven, G. (1981). Leadership and self-esteem in preschool children. *Child Psychiatry Quarterly*, 14, 138–141.
- *Nelson, D. O. (1965). Leadership in sports. *Research Quarterly*, 37, 268–275.
- *Nelson, P. D. (1964). Similarities and differences among leaders and followers. *Journal of Social Psychology*, 63, 161–167.
- *Nichols, R. C., & Holland, J. L. (1963). Prediction of the first year college performance of high aptitude students. *Psychological Monographs*, 77, 1–29.
- Norman, W. T. (1963). Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal Psychology*, 66, 574–583.
- Northouse, P. G. (1997). *Leadership: Theory and practice*. Thousand Oaks, CA: Sage.
- Offerman, L. R., Kennedy, J. K., & Wirtz, P. W. (1994). Implicit leadership theories: Content, structure, and generalizability. *Leadership Quarterly*, 5, 43–58.
- Ones, D. S. (1993). *The construct validity of integrity tests*. Unpublished doctoral dissertation, University of Iowa, Iowa City.
- Ones, D. S., & Viswesvaran, C. (1996). Bandwidth-fidelity dilemma in personality measurement for personnel selection. *Journal of Organizational Behavior*, 17, 609–626.
- Ones, D. S., Viswesvaran, C., & Reiss, A. D. (1996). Role of social desirability in personality testing for personnel selection: The red herring. *Journal of Applied Psychology*, 81, 660–679.
- *Palmer, W. J. (1974). Management effectiveness as a function of personality traits of the manager. *Personnel Psychology*, 27, 283–295.
- Piedmont, R. L., McCrae, R. R., & Costa, P. T., Jr. (1991). Adjective check list scales and the five-factor model. *Journal of Personality and Social Psychology*, 60, 630–637.
- *Richardson, H. M., & Hanawalt, N. G. (1943). Leadership as related to the Bernreuter Personality Measures: I. College leadership in extracurricular activities. *Journal of Social Psychology*, 27, 237–249.
- *Richardson, H. M., & Hanawalt, N. G. (1952). Leadership as related to the Bernreuter Personality Measures: V. Leadership among adult women in social activities. *Journal of Social Psychology*, 36, 141–153.
- Robertson, I. T., & Kinder, A. (1993). Personality and job competencies: The criterion-related validity of some personality variables. *Journal of Occupational and Organizational Psychology*, 66, 226–244.
- *Robinson, W. A. (1980). *Influence of leader personality and compatibility of leader-follower personalities on the leadership effectiveness of male public secondary school principals in Louisiana*. Unpublished doctoral dissertation, Northwestern State University, Natchitoches, LA.
- *Rowland, K. M., & Scott, W. E. (1968). Psychological attributes of effective leadership in a formal organization. *Personnel Psychology*, 21, 365–377.
- *Rueb, J. D. (1994). *Intelligence, dominance, masculinity-femininity, and self-monitoring: The use of traits in predicting leadership emergence in a military setting*. Unpublished doctoral dissertation, Virginia Polytechnic Institute and State University, Blacksburg.
- *Russell, G. W. (1981). Conservatism, birth order, leadership, and the aggression of Canadian ice hockey players. *Perceptual and Motor Skills*, 55, 3–7.
- *Rychlak, J. F. (1963). Personality correlates of leadership among first level managers. *Psychological Reports*, 12, 43–52.
- Salgado, J. F. (1997). The five factor model of personality and job performance in the European Community. *Journal of Applied Psychology*, 82, 30–43.
- Salgado, J. F. (1998). *Criterion validity of personality measures based and non-based on the five-factor model*. Paper presented at the 106th Annual Conference of the American Psychological Association, San Francisco, CA.
- *Savelsbergh, M., & Staebler, B. (1995). Investigating leadership styles, personality preferences, and effective teacher consultation. *Journal of Educational and Psychological Consultation*, 6, 277–286.
- Schmidt, F. L., & Hunter, J. E. (1996). Measurement error in psychological research: Lessons from 26 research scenarios. *Psychological Methods*, 1, 199–223.
- *Sinha, D., & Kumar, P. (1966). A study of certain personality variables in student leadership. *Psychological Studies*, 11, 1–8.
- *Smith, J. A., & Foti, R. J. (1998). A pattern approach to the study of leader emergence. *Leadership Quarterly*, 9, 147–160.
- Sosik, J. J., Kahai, S. S., & Avolio, B. J. (1998). Transformational leadership and dimensions of creativity: Motivating idea generation in computer-mediated groups. *Creativity Research Journal*, 11, 111–121.
- Stogdill, R. M. (1948). Personal factors associated with leadership: A survey of the literature. *Journal of Psychology*, 25, 35–71.
- Stogdill, R. M. (1950). Leadership, membership and organization. *Psychological Bulletin*, 47, 1–14.
- Stogdill, R. M. (1974). *Handbook of leadership*. New York: Free Press.
- *Taggar, S., Hackett, R., & Saha, S. (1999). Leadership emergence in autonomous work teams: Antecedents and outcomes. *Personnel Psychology*, 52, 899–926.
- Terman, L. M. (1904). A preliminary study in the psychology and pedagogy of leadership. *Journal of Genetic Psychology*, 11, 413–451.
- Tett, R. P., Jackson, D. N., & Rothstein, M. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Personnel Psychology*, 44, 703–742.
- *Tripathi, R. R., & Agrawal, A. (1978). The achievement motive in leaders and non-leaders: A role analysis. *Psychologia*, 21, 97–103.
- Tupes, E. C., & Christal, R. E. (1961). *Recurrent personality factors based on trait ratings* (Technical Report ASD-TR-61-97). Lackland Air Force Base, TX: U.S. Air Force.
- *Vanfossen, B. E., Jones, J. D., & Spade, J. Z. (1987). Curriculum tracking and status maintenance. *Sociology of Education*, 60, 104–122.
- Vickers, R. R., Jr. (1995). *Using personality assessment for leadership selection* (Report No. 95-16). San Diego, CA: Naval Health Research Center.
- Viswesvaran, C., & Ones, D. S. (1995). Theory testing: Combining psychometric meta-analysis and structural equations modeling. *Personnel Psychology*, 48, 865–885.
- Viswesvaran, C., Ones, D. S., & Schmidt, F. L. (1996). Comparative analysis of the reliability of job performance ratings. *Journal of Applied Psychology*, 81, 557–574.

Watson, D., & Clark, L. A. (1997). Extraversion and its positive emotional core. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 767-793). San Diego, CA: Academic Press.

Whitener, E. M. (1990). Confusion of confidence intervals and credibility intervals in meta-analysis. *Journal of Applied Psychology, 75*, 315-321.

*Wunderley, L. J., Reddy, W. B., & Dember, W. N. (1998). Optimism and pessimism in business leaders. *Journal of Applied Social Psychology, 28*, 751-760.

*Yukelson, D., Weinberg, R., Richardson, P., & Jackson, A. (1983). Interpersonal attraction and leadership within collegiate sport teams. *Journal of Sport Behavior, 6*, 28-36.

Yukl, G. (1998). *Leadership in organizations*. Upper Saddle River, NJ: Prentice Hall.

Yukl, G., & Van Fleet, D. D. (1992). Theory and research on leadership in organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Vol. 3, pp. 147-197). Palo Alto, CA: Consulting Psychologists Press.

*Zaccaro, S. J., Foti, R. J., & Kenny, D. A. (1991). Self-monitoring and trait-based variance in leadership: An investigation of leader flexibility across multiple group situations. *Journal of Applied Psychology, 76*, 308-315.

Received March 13, 2000
 Revision received November 27, 2001
 Accepted November 28, 2001 ■



**AMERICAN PSYCHOLOGICAL ASSOCIATION
 SUBSCRIPTION CLAIMS INFORMATION**

Today's Date: _____

We provide this form to assist members, institutions, and nonmember individuals with any subscription problems. With the appropriate information we can begin a resolution. If you use the services of an agent, please do **NOT** duplicate claims through them and directly to us. **PLEASE PRINT CLEARLY AND IN INK IF POSSIBLE.**

PRINT FULL NAME OR KEY NAME OF INSTITUTION _____ MEMBER OR CUSTOMER NUMBER (MAY BE FOUND ON ANY PAST ISSUE LABEL) _____

ADDRESS _____ DATE YOUR ORDER WAS MAILED (OR PHONED) _____

_____ PREPAID _____ CHECK _____ CHARGE
 CHECK/CARD CLEARED DATE: _____

CITY _____ STATE/COUNTRY _____ ZIP _____

YOUR NAME AND PHONE NUMBER _____ ISSUES: ___ MISSING ___ DAMAGED

(If possible, send a copy, front and back, of your cancelled check to help us in our research of your claim.)

TITLE	VOLUME OR YEAR	NUMBER OR MONTH
_____	_____	_____
_____	_____	_____
_____	_____	_____

Thank you. Once a claim is received and resolved, delivery of replacement issues routinely takes 4-6 weeks.

(TO BE FILLED OUT BY APA STAFF)

DATE RECEIVED: _____	DATE OF ACTION: _____
ACTION TAKEN: _____	INV. NO. & DATE: _____
STAFF NAME: _____	LABEL NO. & DATE: _____

Send this form to APA Subscription Claims, 750 First Street, NE, Washington, DC 20002-4242

PLEASE DO NOT REMOVE. A PHOTOCOPY MAY BE USED.