

NARCISSISM AND LEADERSHIP:  
A META-ANALYSIS OF LINEAR AND NONLINEAR RELATIONSHIPS

BY

EMILY J. GRIJALVA

DISSERTATION

Submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy in Psychology  
in the Graduate College of the  
University of Illinois at Urbana-Champaign, 2013

Urbana, Illinois

Doctoral Committee:

Associate Professor Daniel A. Newman  
Professor Fritz Drasgow  
Professor Brent W. Roberts  
Professor James Rounds  
Assistant Professor P. D. Harms, University of Nebraska at Lincoln

## **ABSTRACT**

Past empirical studies relating Narcissism to leadership have offered mixed results. The present study meta-analytically integrates prior research findings to make four contributions to theory on Narcissism and leadership, by: (a) distinguishing between leadership emergence and leadership effectiveness, to reveal that Narcissism displays a positive relationship with leadership emergence, but no relationship with leadership effectiveness, (b) showing Narcissism's positive effect on leadership emergence can be explained by leader Extraversion, (c) demonstrating that self-reported leadership effectiveness ratings are positively related to Narcissism, whereas observer-reported leadership effectiveness ratings (e.g., supervisor-report, subordinate-report, and peer-report) are not related to Narcissism, and (d) illustrating that the nil linear relationship between Narcissism and leadership effectiveness masks an underlying curvilinear trend, advancing the idea that there exists an optimal, mid-range level of leader Narcissism.

*To my loving husband, David.*

## TABLE OF CONTENTS

<b>CHAPTER 1: INTRODUCTION.....</b>	<b>1</b>
<b>CHAPTER 2: METHOD STUDY 1.....</b>	<b>16</b>
<b>CHAPTER 3: RESULTS STUDY 1.....</b>	<b>23</b>
<b>CHAPTER 4: METHOD STUDY 2.....</b>	<b>29</b>
<b>CHAPTER 5: RESULTS STUDY 2.....</b>	<b>31</b>
<b>CHAPTER 6: GENERAL DISCUSSION.....</b>	<b>34</b>
<b>CHAPTER 7: REFERENCES.....</b>	<b>40</b>
<b>CHAPTER 8: TABLES.....</b>	<b>60</b>
<b>CHAPTER 9: FIGURES.....</b>	<b>68</b>
<b>APPENDIX A.....</b>	<b>69</b>
<b>APPENDIX B.....</b>	<b>73</b>

# CHAPTER 1

## INTRODUCTION

During the last decade, organizational researchers have become increasingly interested in Narcissism, as recently evidenced by several insightful contributions (e.g., Galvin, Waldman, & Balthazard, 2010; Harms, Spain, & Hannah, 2011a; Judge, LePine, & Rich, 2006; Judge, Piccolo, & Kosalka, 2009; Krasikova, Green, & LeBreton, 2013; Nevicka, Ten Velden, De Hoogh, & Van Vianen, 2011b), including a meta-analysis of Narcissism and work performance (O’Boyle, Forsyth, Banks, & McDaniel, 2012). Narcissism’s rise in popularity coincides with a larger trend in the field of organizational psychology toward building a more thorough understanding of negative workplace behaviors [e.g., counterproductive work behaviors (CWB), abusive supervision, and incivility; Andersson & Pearson, 1999; Sackett, 2002; Tepper, 2000]. Indeed, the heightened emphasis on negative workplace behaviors (*negative organizational psychology*) during the current millennium marks an intriguing contrast to the emphasis on *positive* psychology within the field of psychology at large (Luthans & Avolio, 2009; Seligman & Csikszentmihalyi, 2000). Within this context, negative personality traits have a newfound appeal, as they carry the potential to harness validity left untapped by trait paradigms focused on the more positive side of personality (Hogan & Hogan, 2001; Judge et al., 2006; O’Boyle et al., 2012; Paulhus & Williams, 2002; Wu & LeBreton, 2011).

Specifically, the current paper seeks to integrate and extend existing research findings regarding Narcissism’s impact on leadership outcomes. To be clear, much existing research already focuses on Narcissistic leaders (Kets de Vries & Miller, 1985; Maccoby, 2000; Rosenthal & Pittinsky, 2006); but this research has not produced consensus concerning whether Narcissistic leaders hinder or benefit their organizations. To date, no meta-analysis has examined

the often contradictory results surrounding Narcissism and leadership, leaving the overall magnitude, direction, and boundary conditions of Narcissism's relationship to leadership unknown. In addition, no study has empirically investigated the possibility of a curvilinear relationship between Narcissism and leadership.

In sum, the current paper will attempt to make four main contributions to theory on Narcissism and leadership, by (a) distinguishing between leadership emergence and leadership effectiveness to reveal whether these two types of leadership display differing linear relationships with Narcissism, (b) examining whether the source of leadership ratings (e.g., self-report, supervisor-report, subordinate-report, and peer-report) substantially impacts the Narcissism/leadership relationship, (c) investigating leader Extraversion as an explanation for the observed positive association between Narcissism and leader emergence, and (d) evaluating whether the relationship between Narcissism and leadership effectiveness is curvilinear.

## **NARCISSISM**

When defining Narcissism, researchers typically list off an idiosyncratic selection of diagnostic criteria for Narcissistic Personality Disorder from the Diagnostic and Statistical Manual of Mental Disorder-IV (DSM-IV; APA, 2000; e.g., “has a grandiose sense of self-importance;” “requires excessive admiration;” has a sense of entitlement and a lack of empathy; tends to be exploitative, manipulative, and arrogant, p.717). A second complementary definition of Narcissism originated in the social/personality psychology domain and describes it as an individual difference variable observed in *normal* populations that is represented by three features: “(a) positive and inflated views of the self, (b) a pervasive pattern of self-regulation that maintains positive self-views — often at the expense of others, and (c) interpersonal relationships that lack warmth and intimacy” (Brunell et al., 2008, p. 1664).

Additionally, evidence suggests that Narcissism is distinct from the Big Five traits, although it does have a modest positive relationship with Extraversion ( $r = .49$ ,  $N = 18,274$ ; Trzesniewski, Donnellan, & Robbins, 2008). Thus, Narcissism shares some characteristics with the Big Five but is not redundant with the Big Five. This conclusion is supported by the finding that Narcissism can explain incremental variance in the prediction of both leadership and CWB beyond the Big Five (Judge et al., 2006).

### **CONTRADICTIONS IN THE NARCISSISM-LEADERSHIP LITERATURE**

Narcissism's relationship with leadership outcomes has long been fraught with controversy – arguments exist for Narcissism having both a positive and negative relationship with leadership (Kets de Vries & Miller, 1985; Rosenthal & Pittinsky, 2006). Since the beginning of Narcissism's relatively long history as a psychological construct, there have been those who suggest that Narcissism is a key ingredient to leadership success. For example, Freud wrote that, "the leader himself needs love no one else, he may be of a masterful nature, *absolutely narcissistic*, self-confident, and independent." (Freud, 1921, p. 123-124, emphasis added). Researchers have also argued that because leadership roles are often held by Narcissists, such as chief executive officers and U.S. presidents (Deluga, 1997; Maccoby, 2000; Rosenthal & Pittinsky, 2006), there must be something about Narcissism that affords opportunities for leadership. Charisma, specifically the ability to be inspirational, exciting, and self-confident, is associated with Narcissism and may explain Narcissists' propensity to obtain leadership roles (Galvin et al., 2010; Sankowsky, 1995).

The claim that Narcissism is positively associated with leadership has been supported by multiple studies (Davies, 2004; Galvin et al., 2010; Harms et al., 2011a; Judge et al., 2006). For example, in a longitudinal study with a sample of military school cadets, Narcissism positively

predicted leadership development and performance (Harms et al., 2011a). Further, Judge and colleagues (2006) found that supervisor reports of transformational leadership were positively correlated with Narcissism.

At the same time, a separate set of studies have found a negative association between Narcissism and leadership (Benson & Campbell, 2007; Blair, Hoffman, & Helland, 2008; Chatterjee & Hambrick, 2007, 2011; Khoo & Burch, 2006; Resick, Whitman, Weingarden, & Hiller, 2009; Yocum, 2006). In a group of Major League Baseball CEOs, Narcissism was negatively associated with contingent reward leadership (i.e., Narcissists were less likely to promote equitable exchange relationships); and as an indirect effect of this relationship, Narcissistic CEO's firms had higher manager turnover (Resick et al., 2009). Furthermore, having a Narcissistic leader has been associated with reduced group-level information exchange, which can prove detrimental to team performance (Nevicka et al., 2011b). This finding lends credence to the long-held suspicion that Narcissists' pattern of resisting and devaluing others' input eventually has negative consequences (Kets de Vries & Miller, 1985; Maccoby, 2000; Rosenthal & Pittinsky, 2006).

Despite the growing body of literature focusing on the relationship between Narcissism and leadership, no consensus has been reached regarding Narcissism's impact on leadership outcomes. Past theorizing on the leadership outcomes of Narcissism has differentiated Narcissism's association with leadership *emergence* from that with leadership *effectiveness* (Padilla, Hogan, & Kaiser, 2007). The case for this differentiation stems from research showing that Narcissists generally make a positive first impression, as others preliminarily perceive them to be charming and self-confident; but over time more negative qualities such as arrogance, exploitativeness, and self-centeredness damage Narcissists' relationships (Back, Schmukle, &

Egloff, 2010; Paulhus, 1998; Robins & Beer, 2001). Therefore, the leadership criterion can be broken down into two components: *leadership emergence* which “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” (Lord, De Vader, & Alliger, 1986 Judge, Bono, Ilies, & Gerhardt, 2002, p. 767) and *leadership effectiveness* which “refers to a leader’s performance in influencing and guiding the activities of his or her unit toward achievement of its goals” (Judge et al., 2002, p. 767; also see Stogdill, 1950).

## **STUDY 1**

### **THE NARCISSISM-LEADERSHIP RELATIONSHIP AND ITS MODERATORS**

#### **Leadership Emergence**

Implicit leadership theory suggests that we choose our leaders based on how well people’s characteristics match our conception of a prototypical leader (Lord, Foti, & DeVader, 1984; Shondrick, Dinh, & Lord, 2010). Therefore, it should be noted that many of Narcissists’ characteristics are “leaderlike,” such as being socially dominant, extraverted, and having high self-esteem (Ensari, Riggio, Christian, & Carstaw, 2011; Judge et al., 2002). Consistent with these characteristics, Narcissism has been associated with social skills and charisma under conditions of minimal acquaintance (Back et al., 2010; Brunell et al., 2008; Nevicka, De Hoogh, Van Vianen, Beersma, & McIlwain, 2011a; Nevicka et al., 2011b; Paulhus, 1998; Paulhus, Westlake, Calvez, & Harms, in press; Schnure, 2010). Narcissists are likely to emerge as leaders in leaderless group discussions regardless of their individual performance on team tasks and are likely to be singled out as having leadership potential (Brunell et al., 2008; Nevicka et al., 2011b). For example, with a sample of managers participating in a leaderless group discussion

exercise, Narcissists emerged as leaders even when rated by a group of independent experts who had received at least 20 hours of rater training (Brunell et al., 2008).

To better understand the process that leads to Narcissists' appearing charismatic under conditions of minimal acquaintance, it is helpful to reference process models of interpersonal judgments such as the Realistic Accuracy Model (RAM; Funder, 1995). RAM proposes that for others to accurately judge a personality trait, it must have relevant, observable behavioral manifestations that others are able to accurately interpret (Funder, 1995). For Narcissism, the behavioral manifestations that contribute to positive first impressions include the tendency to be well-dressed, use charming facial expressions, display self-assured body movements, and use verbal humor (Back et al., 2010; Vazire, Naumann, Rentfrow, & Gosling, 2008). These traits are relevant because they, "are related to four generally valued aspects of targets: attractiveness, competence, interpersonal warmth, and humor" (Back et al., 2010, p. 134; Berscheid & Reis, 1998). In addition, Narcissists tend to be highly Extraverted (Emmons, 1984; Paulhus, 1998; Trzesniewski, et al., 2008), and Extraversion is one of the most visible and most accurately perceived personality traits (Borkenau, Brecke, Mottig, & Paelecke, 2009; Connolly, Kavanagh, & Viswesvaran, 2007). High levels of Extraversion are relevant because Extraversion is a leading indicator of leadership emergence (Ensari et al., 2011; Judge et al., 2002). Based on all of these considerations, I hypothesize the following:

*Hypothesis 1: Narcissism will be positively related to leadership emergence.*

I also plan to investigate Extraversion as an explanatory variable to better understand the hypothesized positive relationship between Narcissism and leadership emergence. As previously mentioned, Narcissists tend to be highly Extraverted. The facets of Extraversion include assertiveness, sociability, unrestraint, and activity/adventurousness (Saucier & Ostendorf, 1999).

I thus believe that Narcissism's overlap with Extraversion (i.e., Narcissists' energetic/outgoing/dominant [Extraverted] behaviors) can explain why Narcissism will have a positive relationship with leadership emergence. Thus,

*Hypothesis 2: The relationship between Narcissism and leader emergence can be fully explained by Narcissism's overlap with Extraversion, such that Narcissism will no longer relate to leader emergence once Extraversion has been accounted for.*

### **Leadership Effectiveness**

In the current study, I expect the negative aspects of Narcissism to be more relevant to leadership *effectiveness* than to leadership *emergence*, because the negative aspects seem to only reveal themselves over more extended timeframes (Campbell & Campbell, 2009; Paulhus, 1998). A longitudinal study conducted by Paulhus (1998) demonstrates how individuals' perceptions of Narcissists change over time. In this study, participants met for leaderless group discussions over several weeks. After the first discussion, Narcissistic group members were described as, "confident, entertaining, and physically attractive," but by the end of the study they were rated negatively and described using adjectives such as, "hostile, arrogant, and cold" (Paulhus, 1998, p. 1204). In other words, Narcissists appear to be skillful at initiating relationships, but unable to maintain them over time. Relatedly, Blair et al. (2008) found that Narcissists' supervisors rated them negatively on the interpersonal components of leadership, but that Narcissism was unrelated to more task-specific aspects of leadership. This has serious implications for Narcissists' ability to effectively supervise subordinates, because evidence suggests there is a positive relationship between subordinate performance and the quality of leader/subordinate exchange relationships (Dansereau, Graen, & Haga, 1975; Deluga & Perry, 1994; Dockery & Steiner, 1990; Gerstner & Day, 1997).

More broadly, interpersonal deficiencies have been found to be a leading predictor of managerial derailment (McCall & Lombardo, 1983). The Center for Creative Leadership (CCL) pinpointed 10 key reasons why managers derail, and whereas no explicit connection was made to Narcissism, many of the reasons for derailment overlap with the very definition of Narcissism. Illustrative reasons include: (a) insensitivity (abrasive, intimidating, bullying), (b) being cold, aloof, arrogant, (c) betraying trust, and (d) being overly ambitious (McCall & Lombardo, 1983). The theme of troubled relationships leading to managerial derailment has been supported across several samples (McCall & Lombardo, 1983; McCauley & Lombardo, 1990; Morrison, White, & Van Velsor, 1987; Van Velsor & Leslie, 1995).

In addition to concerns originating from Narcissists' interpersonal deficits, there is evidence that Narcissism is linked to a number of other destructive, work-related behaviors: reacting aggressively to negative feedback, avoiding acknowledging responsibility for failure, making risky decisions, and acting unethically (Brunell, Staats, Barden, & Hupp, 2011, Bushman & Baumeister, 1998; Chatterjee & Hambrick, 2007; Hogan, Raskin, & Fazzini, 1990; Morf & Rhodewalt, 2001). Researchers have suggested that many of Narcissists' bad behaviors are associated with a tendency to base decisions primarily on short-term benefits while inappropriately underestimating the accompanying long-term costs (Chatterjee & Hambrick, 2007, 2011; Elliot & Thrash, 2001; Foster & Trimm, 2008; Morf & Rhodewalt, 2001). Indeed, individuals high in Narcissism are prone to pathological gambling, alcohol abuse, and infidelity - all of which result in immediate gratification but have long-term negative consequences (Foster & Campbell, 2005; Lakey, Goodie, & Campbell, 2007; Crocker & Luhtanen, 2005). Due to Narcissists' differential sensitivity to approach versus avoidance motives, I also suggest Higgins' (1998) self-regulatory focus model as a helpful candidate framework for conceptualizing how

Narcissism may impact the workplace. The self-regulatory focus model proposes that individuals can approach challenges as an opportunity for “advancement, growth, and accomplishment” (promotion focus) or with the goal of maximizing “protection, safety, and responsibility” (prevention focus; Higgins, 1998, p. 37). In other words, individuals can approach the world through the lens of achieving rewards, or avoiding punishments. Narcissism is associated with a strong promotion focus - single mindedly pursuing rewards and taking risks - but is *negatively* associated with prevention focused behaviors such as avoiding punishment (Foster & Trimm, 2008). This result is consistent with Narcissism’s moderate, meta-analytic correlation with impulsivity ( $r = .34, k = 10$ ; Vazire & Funder, 2006) as well as behaviors such as pathological gambling (Lahey et al., 2007). I suspect that Narcissists’ lack of prevention focus may result in problematic behaviors. The imbalance created by Narcissists’ strong promotion/weak prevention focus is apparent in Narcissistic CEOs’ tendency to favor bold, risky actions (i.e., making a large number of sizeable acquisitions), which lead to unpredictably large gains or losses for these CEOs’ organizations (Chatterjee & Hambrick, 2007). Narcissistic CEOs may erroneously believe that their extraordinary personal talents will allow them to control or forecast future events, and thus they do not accurately interpret the potential risks associated with their decisions (Chatterjee & Hambrick, 2007, 2011).

The tendency to take risks without attending to potential consequences could lead to a variety of additional negative work related outcomes. It should be of special concern to organizations that research also suggests Narcissists tend to act unethically (Brown, Sautter, Littvay, Sautter, & Bearnese, 2010; Brunell, et al., 2011; Campbell, Rudich, & Sedikides, 2002; Tamborski, Brown, & Chowning, 2012). Narcissism has been linked to an increased propensity to commit CWBs such as “theft, sabotage, interpersonal aggression, work slowdowns, wasting

time and/or materials, and spreading rumors” (Penney & Spector, 2002, p. 126) with an average meta-analytic correlation of .35 (O’Boyle et al., 2012). Additionally, in a sample of male prisoners, Narcissism was associated with being convicted of a business white collar crime (Blickel, Schlegel, Fassbender, & Klein, 2006). It would appear as though Narcissists’ chronic promotion focus, combined with a disregard for preventing undesirable outcomes, often leads to a dysfunctional kind of risk taking.

Overall, I anticipate that there will be a negative relationship between Narcissism and leadership effectiveness. The expectation of a negative relationship between the two constructs can be deduced from (a) evidence that Narcissists perform a variety of destructive workplace behaviors (Blair et al., 2008; Judge et al., 2006), (b) the assertion that part of being an effective leader entails maintaining positive relationships with one’s subordinates (which is demonstrated by the inclusion of a relationship component across many prominent leadership theories [e.g., Bass, 1985; Graen & Uhl-Bien, 1995; Stogdill, 1963; Uhl-Bien, 2006]), and (c) evidence that Narcissists have difficulty maintaining positive relationships over time (Paulhus, 1998). Thus,

*Hypothesis 3: Narcissism will be negatively related to leadership effectiveness.*

### **Potential Moderators of Narcissism-Leadership Linear Relationships**

***Source of Leadership Report.*** Researchers use a variety of methods to measure leadership, including different sources or perspectives (e.g., self-reports, supervisor reports, etc.). I will compare self-reports, subordinate-reports, coworker-reports, and supervisor-reports of leadership, with the expectation that validity coefficients based on self-reports of leadership emergence/effectiveness will exhibit a stronger positive relationship with Narcissism (which is also self-reported). This is expected to be the case because Narcissists have a documented propensity to self-enhance across a variety of criteria including intelligence, interpersonal skills,

public speaking, creativity, and course grades (Campbell, Reeder, Sedikides, & Elliot, 2000; Farwell & Wohlwend-Lloyd, 1998; Gabriel, Critelli, & Ee, 1994; John & Robins, 1994; Robins & John, 1997). Given the self-enhancement tendencies of Narcissists, I therefore assert that Narcissists will inflate self-reports of their own leadership (see preliminary evidence for this by Judge et al., 2006). Thus I hypothesize,

*Hypothesis 4: The relationship between Narcissism and leadership (i.e., leadership emergence and effectiveness) is moderated by the source of the leadership report, such that the relationship is stronger for self-reports than for observer reports of leadership.*

**Narcissism Inventory.** A second potential moderator is the type of Narcissism inventory used. By far, the most widely used measure of Narcissism is the Narcissistic Personality Inventory (NPI, Raskin & Hall, 1979; Raskin & Terry, 1988). The NPI consists of a series of forced-choice, paired statements with one option that is more likely to be endorsed by Narcissistic individuals. For example, one item pair is, “I like to be the center of attention,” paired with “I prefer to blend in with the crowd.” Individuals who choose the former statement over the latter are more likely to be described as Narcissistic using the descriptors of Narcissism in the *DSM-IV* (2000). Additional non-pathological measures of Narcissism are also in widespread use. A second widely-used Narcissism scale is derived from items in the California Personality Inventory (CPI; Gough & Bradley, 1992, 2002; Wink & Gough, 1990). Similar to the NPI, the CPI Narcissism measure was developed to capture Narcissism in non-pathological populations and has been validated with related self-report scales (Wink & Gough, 1990). The CPI Narcissism measure is proprietary, which precludes the presentation of example items in the current paper. More recently, the Bold scale of the Hogan Development Survey (HDS; Hogan & Hogan, 1997) has become popular for understanding Narcissism in the workplace. The HDS Bold scale consists of 14 non-obvious, dichotomous items embedded in a longer measure of

personality. High scorers on this scale are unusually self-confident and self-absorbed with elevated feelings of entitlement and are typically reluctant to admit shortcomings. A sample item is “If I were in charge I could get this country moving again.” Other measures of Narcissism exist, for example the Millon Clinical Multiaxial Inventory (MCMI; Millon, Millon, Davis, & Grossman, 2009) has a scale designed to measure Narcissistic personality disorder, but this and other inventories are not widely used in organizational research.

In addition to the three commonly used Narcissism inventories described above, researchers also use historiometric measures of Narcissism. Historiometric measures of Narcissism are idiosyncratic archival measures derived from publicly available information that is theorized to be indicative of Narcissism. Prior research has used indicators such as the prominence of a CEO’s photograph in a company’s annual report, the CEO’s cash compensation divided by that of the second-highest paid executive in a firm, or undergraduate ratings of a CEO’s Narcissism based on a biographical sketch compiled by the study’s authors (e.g., Chatterjee & Hambrick, 2007; Resick et al., 2009). Because historiometric measures are often used with populations for which it would be difficult or impossible to obtain self-reports of Narcissism (e.g., Fortune 500 CEOs, U.S. Presidents), they represent an innovative and at times ingenious method for studying leader Narcissism. In the current review, it is expected that, because researchers who use historiometric Narcissism indices frequently control the idiosyncratic creation of both the Narcissism measure and the leadership effectiveness measures, there is a greater likelihood of common method bias, as well as the opportunity for researchers to (perhaps unintentionally) bias their choice of index in a way that could enhance results. Therefore, the effect sizes based on these historiometric measures are expected to be larger than those from the more traditional psychometric Narcissism personality inventories.

*Hypothesis 5: The relationship between Narcissism and leadership emergence/ effectiveness is moderated by the Narcissism inventory used, such that the relationship is stronger for historiometric measures than for psychometric/survey measures of Narcissism (i.e., the NPI, CPI, and HDS-Bold).*

## **STUDY 2**

### **NONLINEAR RELATIONSHIP OF NARCISSISM WITH LEADER EFFECTIVENESS**

The previous hypotheses focused on the direction of the linear relationship between Narcissism and leadership. However, evidence of a linear relationship does not rule out the possibility of a curvilinear relationship. Indeed, scholars have suggested that inconsistencies across past findings may be the result of inappropriately assuming that the relationship between Narcissism and leadership is linear (Benson & Campbell, 2007). An undetected curvilinear relationship between Narcissism and leadership effectiveness could explain some of the observed inconsistencies in the literature, because undetected curvilinear relationships can lead to weak linear correlations, and/or result in statistics that are a misleading summary of the true complexity underlying a relationship (Cohen, Cohen, West, & Aiken, 2003).

There are no published studies directly examining the possibility of a curvilinear relationship between Narcissism and leadership effectiveness. However, Benson and Campbell (2007) found an inverted U-shaped relationship between leadership and a composite of dark traits that included 10 other traits in addition to Narcissism. Independent of these other dark traits, it remains unclear what the shape of the specific Narcissism-leadership effectiveness relationship would be. Second, at the team-level of analysis, Narcissism has been shown to have a curvilinear relationship with other criteria (Goncalo, Flynn, & Kim, 2010). For example, the number of Narcissists on a team has an inverted U-shaped relationship with team creative performance, such that having more Narcissists is better for generating creative outcomes up to a point, after which too many Narcissists becomes detrimental (perhaps because they cause

distracting conflict; Goncalo et al., 2010). In the aforementioned study, Narcissists were not necessarily the people coming up with creative ideas. Instead the authors proposed that Narcissists' agentic, competitive style was contagious and encouraged idea expression and generation within teams, up to a point (Goncalo et al., 2010).

I propose that the relationship between Narcissism and leadership effectiveness also takes the form of a non-monotonic, inverted U-shape, such that both very low and very high levels of Narcissism obstruct leadership effectiveness.<sup>1</sup> If an inverted U-shape were the best way to characterize the Narcissism-leadership effectiveness relationship, then this would mean that moderate levels of Narcissism facilitate leadership effectiveness, whereas both very low and very high levels of Narcissism would be associated with greater leadership dysfunction. With very high levels of Narcissism leaders may be so overconfident that they become immune to others' feedback and needs. At the other extreme, very low levels of Narcissism, leaders may be too insecure or hesitant to make decisions and unable to convince followers that they are worthy of being followed. It may seem counterintuitive that a lack of Narcissism would result in poor leadership, but I assert here that Narcissism is a potentially positive trait, when expressed in moderation. Similar to Aristotle's admonition that individuals should strive for "...an intermediate between excess and defect...that which is equidistant from each of the extremes" (Aristotle, trans. 1999, p. 26), it is possible that a moderate amount of what is traditionally considered a negative trait could actually be ideal.

In sum, I propose that Narcissism, an antecedent normally considered disadvantageous, is actually beneficial up to a maximal point after which the relationship becomes negative, conforming to an overall curvilinear relationship. Thus,

---

<sup>1</sup> Throughout the paper, when I refer to Narcissism's nonlinear or curvilinear relationship with leadership effectiveness, I am using this as shorthand to refer to a non-monotonic, inverted U-shaped relationship.

*Hypothesis 6: Narcissism will have a non-monotonic, inverted U-shaped relationship with leadership effectiveness, such that the relationship is initially positive but becomes more negative as Narcissism increases. As such, leadership effectiveness will be maximized in the midrange of Narcissism.*

Nonlinear (quadratic) effects are notoriously small in magnitude (Ames & Flynn, 2007; Benson & Campbell, 2007; Cucina & Vasilopoulos, 2005; Le et al., 2011; LaHuis, Marin, & Avis, 2005; Pierce & Aguinis, in press). Additionally, past research studying personality and nonlinear effects has produced disparate results (see Le et al., 2011, for a review of Conscientiousness and job performance). Given these challenges, I will use multiple data sets in an attempt to improve statistical power to detect the form of the relationship between Narcissism and leadership effectiveness. To this end, Study 2 will analyze six different datasets of working adults provided by Hogan Assessment Systems, which measured self-reported Narcissism using the HDS Bold (Hogan & Hogan, 1997) and supervisor-rated leadership effectiveness. The quadratic effects from these data sets will be meta-analyzed to address Hypothesis 6.

## **CHAPTER 2**

### **METHOD STUDY 1**

#### **Literature Search**

In this study, the correlations between Narcissism and leadership emergence-leadership effectiveness, and between Narcissism and Extraversion, were estimated via meta-analysis. In order to calculate meta-analytic correlations, I electronically searched the literature using Dissertation Abstracts International (1861-2012), Google Scholar, and the American Psychological Association's PsycINFO database (1887-2012) for the following key words (and several variations thereof): *Extraversion, Narcissism, Narcissistic, bold, entitlement, self-enhancement, leaderless group discussion, assessment center, leadership, management, executive, Hogan Developmental Survey (HDS), California Personality Inventory (CPI) and Narcissistic Personality Inventory (NPI)*. I also electronically searched programs from the last eight annual Society for Industrial and Organizational Psychology conferences (2005-2012) and the last eight annual Academy of Management conferences (2005-2012), and contacted researchers who conducted research on Narcissism and leadership to obtain unpublished manuscripts. Finally, I reviewed the reference sections of the articles obtained to identify additional articles.

#### **Inclusion Criteria**

Studies were included in the meta-analysis according to the following rules. First, a study had to report a relationship between a leadership criterion (e.g., leadership effectiveness, charismatic leadership, transformational leadership, and leadership emergence) and Narcissism, or a correlation between Narcissism and Extraversion. Second, to be included, each study had to provide sample sizes and to consist primarily of adult populations, excluding clinical

populations. Third, the majority of studies examining leadership emergence used undergraduates engaged in exercises such as leaderless group discussions. Both undergraduate and working adult samples were used to calculate the meta-analytic effect size between Narcissism and leadership emergence and Narcissism and Extraversion. In contrast, I invoked higher standards for indexing leadership effectiveness, such that only studies using employed adults were included. To be clear, studies of employed MBA and employed undergraduate students were included under the umbrella of employed adults (e.g., Blair et al., 2008). Fourth, if there were several leadership effectiveness correlations reported for the same individuals by different observers (e.g., self, peer, supervisor, etc.), then a composite (or average, if enough information was not available to create a composite; Nunnally, 1978) of these observer ratings was reported to estimate overall leadership effectiveness (e.g., Blair et al., 2008; Judge, Thoresen, Bono, & Patton, 2001). However, self-reports of leadership were not coded as leadership effectiveness or leadership emergence, except when conducting the moderator analyses involving source of leadership report (e.g., Khoo & Burch, 2006). For the overall leadership analyses, self-reports of leadership were excluded due to Narcissists' known tendencies to self-enhance (Campbell et al., 2000; Farwell & Wohlwend-Lloyd, 1998; Gabriel et al., 1994; John & Robins, 1994; Raskin & Terry, 1988; Robins & John, 1997). In addition, if a study reported correlations between Narcissism and many subcomponents of leadership, then these subcomponents of leadership were composited to create a global effectiveness rating (Nunnally, 1978). I also excluded a study that labeled its criterion "leadership potential," but was actually based on a composite of self-reported personality items (i.e., Furnham, Trickey, & Hyde, 2012).

If multiple primary studies analyzed the same sample, then only one of these effect sizes was recorded. I encountered one sample that was reported in an unpublished thesis and in a

published article, so the correlation from the published source was recorded (e.g., Benson & Campbell, 2007; Torregiante, 2005). Finally, when the primary article only reported a range of the number of participating individuals (e.g., 200-225), the lower bound was recorded as a conservative estimate of sample size.

Three Narcissism inventories were considered appropriate measures of nonpathological Narcissism: the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), the Hogan Developmental Survey Bold (HDS Bold; Hogan & Hogan, 1997), and the Narcissism Inventory derived from the California Personality Inventory (CPI; Gough & Bradley, 2002). Also, meta-analytic effect sizes were calculated both with and without studies using histriometric measures (i.e., idiosyncratic archival measures of Narcissism and leadership that frequently use undergraduate ratings of Narcissism and/or leadership based on a profile prepared by the study's authors). I did not include correlations derived from inventories designed to measure pathological Narcissism in clinical samples (e.g., the MCMI) or from inventories that are not widely accepted as measures of Narcissism (Paunonen, Lönqvist, Verkasalo, Leikas, & Nissen, 2006). I identified 157 studies that appeared to provide data concerning relations between Narcissism and leadership. The inclusion criteria resulted in a final database of 53 independent samples that met all the inclusion criteria. These samples comprised a mix of published journal articles ( $k = 12$ ), dissertations and theses ( $k = 6$ ), conference papers ( $k = 4$ ), unpublished studies ( $k = 7$ ), and effect sizes retrieved from technical manuals or obtained directly from Hogan Assessment Systems ( $k = 21$ ). In Appendix A, I provide the main codes and input values for all of the studies and independent samples included in the Narcissism/leadership meta-analysis.

The following inventories were used to measure Extraversion: Saucier's Big Five Mini-Markers (Saucier, 1994), the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck,

1975), Eysenck's Maudsley Personality Inventory (Eysenck, 1958), NEO FFI (Costa & McCrae, 1992), NEO PI-R (Costa & McCrae, 1992), the Big Five Inventory (BFI; John & Srivastava, 1999), the Hogan Personality Inventory (HPI; Hogan & Hogan, 1994), Goldberg's Unipolar Big Five Markers (Goldberg, 1992), and the Sixteen Personality Factor Questionnaire (16PF; Cattell, Cattell, & Cattell, 1993). I also included a study that used a 15 item Extraversion measure developed by McCrae and Costa (1987). I identified 285 studies that appeared to provide data concerning relationships between Narcissism and Extraversion. The inclusion criteria resulted in a final database of 42 independent samples that met all the inclusion criteria. These samples comprised a mix of published journal articles ( $k = 32$ ), dissertations and theses ( $k = 4$ ), and effect sizes from technical manuals ( $k = 6$ ). In Appendix B, I provide the main codes and input values for all the studies and independent samples included in the Narcissism-Extraversion meta-analysis.

## **Coding**

Consistent with my hypotheses, two types of leadership criteria including (a) leadership effectiveness and (b) leadership emergence were coded. Studies were coded as leadership emergence if leadership was measured after individuals participated in initially leaderless group activities or for ratings made regarding leadership potential. Examples of criteria that were coded as leadership emergence include ratings of leadership potential, preferred leader, and leadership ratings after assessment center exercises or leaderless group discussions. Further, in response to feedback, I coded the length of the raters' relationship with the focal leader as a moderator -- whether raters had known the focal leader for a short period of time (i.e., less than one week) or for a longer time period (i.e., longer than one week). If a study reported Narcissism-leadership

correlations for leaderless group discussions that occurred over time then the initial (time 1) correlation was coded as leadership emergence (e.g., Hendin, 2001).

Charismatic leadership and transformational leadership ratings were coded as leadership effectiveness (e.g., Galvin et al., 2010). In addition, global or overall ratings of leadership performance, objective measures of leadership (i.e., firm performance; Peterson, Galvin, & Lange, 2012) leadership performance evaluations, and composites of many dimensions of leadership were coded as leadership effectiveness. Many of the correlations in this meta-analysis came from the HDS technical manual, and to ensure that the measures of leadership matched my inclusion criteria I contacted Hogan Assessment Systems for more information regarding each sample. During my communication with Hogan Assessment Systems, additional samples were made available for the meta-analysis. It was determined that a few samples collected by Hogan Assessment Systems did not match my criteria for either leadership emergence or leadership effectiveness, leaving 18 samples that were coded as leadership effectiveness (many of the samples provided multiple effect sizes from different sources of leadership report).

Studies were also coded for sample size, source of the effect size (e.g., published paper, dissertation/thesis, unpublished manuscript, conference paper, or technical manual), source of the leadership ratings, and the demographic makeup of the sample. In addition, I coded the nature of the sample including undergrads, working adults, military sample, or working students. I defined working students as MBA, masters, or undergraduate students who were currently working at the time of the study and provided either leadership ratings of a supervisor or were the focus of leadership ratings and provided self-reported Narcissism. The nature of the sample and the source of the effect sizes were examined as additional potential moderators. Overall, a high degree of initial agreement was obtained between two independent coders for type of leadership

(98%), type of Narcissism inventory (100%), source of leadership report (100%), publication type (100%), and type of sample (91%). Divergent ratings were discussed until there was agreement about the proper coding of the study in question.

### **Computation of Meta-analytic Coefficients**

The current study followed the random effects meta-analytic procedures outlined by Hunter and Schmidt (2004). All effect sizes were corrected for unreliability in both predictor and criterion. Based on my hypothesis that Narcissism will have a positive relationship with leadership emergence, there was reason to believe that the correlation between Narcissism and leadership effectiveness would potentially suffer from range restriction (i.e., if individuals high in Narcissism are more likely to be appointed to leadership roles, this can create a restriction in the range of leaders' Narcissism scores). This suggests that the Narcissism-leadership effectiveness relationship should be corrected for range restriction. However, when comparing the [restricted] average variance of Narcissism scores observed in the leadership effectiveness primary studies against the unrestricted average variance found in the technical manuals for the HDS Bold measure, I found the restricted-to-unrestricted variance ratio ( $U$ ) was .97; thus it appears there is little to no range restriction in Narcissism amongst leaders in my primary study samples. As such, I opted not to correct for range restriction in the current meta-analyses. Regarding reliability artifacts, the approach used for studies that did not report a reliability estimate for Narcissism was as follows. First, the average of available reliabilities for the NPI were used to estimate missing NPI reliabilities (average reliability for NPI = .87). A different average was computed for the NPI-16 (a shortened - 16 item version of the NPI), as the 16 item NPI is shorter and less reliable (average reliability for NPI-16 = .66; Ames, Rose, & Anderson, 2006). For effect sizes based on proprietary inventories (CPI and HDS), I replaced missing

reliabilities with the average reliabilities reported in the instruments' technical manuals (average reliability for CPI = .77; average reliability for the HDS Bold = .67). Whereas my general approach was to use reported local reliability estimates from the primary studies whenever possible, the decision to correct the proprietary inventories using relevant technical manuals was based on there being fewer published studies using these inventories, and existing studies frequently not reporting reliability information. I used the unit-weighted internal consistency reliability of .78 found in Viswesvaran and Ones (2000, p. 231) to correct for missing Extraversion reliabilities. In addition, the average reliability for the NPI was slightly lower for Narcissism-Extraversion correlations (average reliability for NPI = .84), so this value was used to estimate missing NPI reliabilities for Narcissism/Extraversion correlations.

Leadership effect sizes were corrected using Viswesvaran, Ones, and Schmidt's (1996) meta-analytic Cronbach's alpha estimates to correct for unreliability in leadership effectiveness ratings made by supervisors (.77) and peers (.61). Students' ratings of the leadership behaviors of other students were treated as peer ratings, and assessment center raters were treated as supervisor ratings. The average reliability across all ratings was used for studies in which the source of ratings was subordinate reports, a mixture of different report sources, or the source of the report was not provided or could not be determined (average reliability = .76). The average observed reliability was also used to correct unreported reliability estimates of self-reported leadership.

### CHAPTER 3

#### RESULTS STUDY 1

Table 2 displays the meta-analytic validity estimates for Narcissism and leadership. As can be seen in Table 2, there was systematic variation in the magnitude of Narcissism-leadership correlations across the two types of leadership criteria, suggesting that type of leadership criterion moderated the relationship between Narcissism and leadership. As expected, leadership emergence was positively related to Narcissism ( $\rho = .16$ ; 95% CI = [.08, .15]), supporting Hypothesis 1. Many of the effect sizes for this criterion were obtained from unpublished research conducted by a single author (P.D. Harms). To ensure that the results from these studies were consistent with those obtained from alternative sources, I also calculated the Narcissism-leadership emergence relationship without the unpublished studies from this author. The results based on the reduced number of effect sizes did not differ from the results reported above ( $k = 12$ ,  $N = 2,612$ ,  $\rho = .16$ ; 95% CI = [.09, .16]). In addition, when these studies were broken down by the length of acquaintance between raters and focal leaders (i.e., minimal vs. longer acquaintance) I found that for minimal acquaintanceship the corrected correlation was .18 and for longer acquaintanceship the corrected correlation was .09, although the confidence intervals overlapped (see Table 1). Thus, there is some suggestion that length of acquaintance moderates the Narcissism-leadership emergence relationship, which is consistent with past research in this area (e.g., Paulhus, 1998).

Hypothesis 3 predicted that Narcissism would have a negative relationship with leadership effectiveness. Surprisingly, Narcissism had no linear relationship with leadership effectiveness, as evidenced by a meta-analytic effect size nearing zero and a confidence interval including zero ( $\rho = .03$ ; 95% CI = [-.01, .05]; and without historiometric studies,  $\rho = .03$ ; 95% CI

lower limit = [-.01, .05]).<sup>2</sup> Further, the Narcissism-leadership effectiveness confidence interval did not overlap with the Narcissism-leadership emergence confidence interval, suggesting that Narcissism predicts leadership emergence more strongly than it predicts leadership effectiveness. Also, the credibility interval for the leadership effectiveness effect size was relatively wide (80% CV = [-0.22, 0.28]; and without historiometric studies, 80% CV = [-0.14, 0.21]) suggesting that moderator variables are most likely present.

### **Moderator Analyses**

The large credibility interval for leadership effectiveness indicates the possible existence of moderator variables. Results from the moderator analyses for sources of leadership effectiveness ratings are displayed in Table 2 (there were not a sufficient number of primary studies to perform this moderator analysis for the leadership emergence criterion). Supporting Hypothesis 4, the source of leadership effectiveness ratings moderated the relationship between Narcissism and leadership effectiveness such that the relationship was stronger for self-reports of leadership than for observer reports. The Narcissism-leadership effectiveness correlation for self-reports ( $\rho = 0.29$ ; 95% CI = [0.17, 0.25]) was notably larger than that for supervisor-reports ( $\rho = .04$ ; 95% CI = [-0.01, 0.06]), peer-reports ( $\rho = 0.02$ ; 95% CI = [-0.04, 0.06]), and subordinate-reports ( $\rho = 0.12$ ; 95% CI = [.03, 0.13]). In addition, the different types of observer reports had overlapping confidence and credibility intervals, indicating that the Narcissism-leadership effectiveness relationship did not differ much across different observers' leadership reports (i.e., supervisor, peer, and subordinate ratings of leadership effectiveness).

---

<sup>2</sup> To identify potential outliers, I used a modified version of the sample adjusted meta-analytic deviancy (SAMD) statistic (Beal, Corey, & Dunlap, 2002; Huffcutt & Arthur, 1995). One influential study was identified for leadership effectiveness, Harms, Spain, and Hannah (2011a), which was the only military sample included in the leadership effectiveness meta-analysis. The removal of this sample resulted in a corrected correlation of .01 ( $k = 25$ ,  $N = 3,273$ ; 95% CI for  $r = [-.03, .04]$ ) that did not differ from the original corrected correlation (i.e., there were overlapping confidence intervals).

Results for the next hypothesized moderator, the type of Narcissism inventory, are also displayed in Table 2. This moderator analysis was unfortunately hindered by a lack of primary studies. For example, only one leadership effectiveness study used the CPI, and I did not find any leadership emergence studies that used historiometric measures of Narcissism, so these conditions could not be analyzed. For leadership emergence, the NPI, HDS Bold, and CPI Narcissism measures all exhibited similar magnitudes of correlations with leadership emergence ( $\rho$ s ranged from .13 to .16), with overlapping confidence intervals. In other words, type of Narcissism inventory does not seem to moderate the Narcissism-leadership emergence relationship.

For leadership effectiveness, the two available Narcissism surveys, the HDS Bold and the NPI, did not display differential relationships with leadership effectiveness, and they had overlapping confidence intervals. However, I hypothesized that the relationship between Narcissism and leadership effectiveness would be stronger for historiometric measures than for psychometric/survey measures of Narcissism (i.e., the NPI, CPI, and HDS-Bold), which was not supported. Samples using historiometric measures of Narcissism did not have a stronger relationship with leadership effectiveness ( $\rho = -0.02$ ; 95% CI = [-.09, 0.07]) than those based on psychometric Narcissism surveys,. Once again, these results should be interpreted with caution due to the small number of effect sizes available for some measures.

I also investigated whether the Narcissism-leadership correlations were dependent upon the publication source of the correlations (i.e., published papers, unpublished manuscripts, conference papers, dissertations/theses, and technical manuals). Publication type did not moderate the Narcissism-leadership emergence relationship – the confidence intervals again overlapped and the average relationships were  $\rho = .17$  (for published papers) and  $\rho = 0.14$  (for

unpublished papers, dissertations, and technical manuals combined). The same was true for the Narcissism-leadership effectiveness relationship –  $\rho = .02$  (for published papers) and  $\rho = 0.05$  (for unpublished papers, dissertations, and technical manuals combined). In addition, the type of sample (undergraduates vs. working adults) did not moderate the Narcissism-leadership relationships (see Table 3).

### **Extraversion Analyses**

I next set out to test whether the effect of Narcissistic personality on leader emergence can be explained by trait Extraversion. Table 4 contains the meta-analytic correlation matrix used in this analysis. The effect sizes reported in Table 4 are estimated corrected correlations. The correlation between Extraversion and leadership emergence was .33 and was found in Judge et al (2002). To test Hypothesis 2, that the overlap between Narcissism and Extraversion can explain the effect of Narcissism on leadership emergence, I first note that Narcissism was related to leadership emergence ( $\bar{r} = .16, p < .05$ ). Second, Narcissism was related to Extraversion ( $\bar{r} = .55, p < .05$ ). Third, when leader emergence was simultaneously regressed onto Narcissism and Extraversion together, the direct effect of Narcissism on leader emergence switched from positive ( $\beta = .16$ ) to negative ( $\beta = -.03, p = .13$ ). The overlap between Narcissism and Extraversion thus fully explains Narcissism's positive relationship with leadership emergence. In other words, holding Extraversion constant, Narcissists are no more likely to emerge as leaders.

## **SUPPLEMENTARY ANALYSES**

### **Regression Approach to Meta-Analysis**

In addition to the traditional Hunter and Schmidt (2004) analyses, I also examined the Narcissism/leadership relationship using a regression approach to meta-analysis (Erez, Bloom, & Wells, 1996; LePine, Erez, & Johnson, 2002; see Nye, Su, Rounds, & Drasgow, 2012 for a

detailed description). The regression approach has been used with increasing frequency in the psychological literature (e.g., Beaty, Nye, Borneman, Kantrowitz, Drasgow, & Grauer, 2011; Nye et al., 2012; Richman, Kiesler, Weisband, & Drasgow, 1999) and is useful for nonindependent effects--when multiple effect sizes are reported for the same primary sample. This is the case because the traditional meta-analytic approach requires that only one effect size per sample be included in the analysis to ensure that the standard statistical assumption of independence is not violated, whereas the regression approach allows for dependent observations. Thus, the regression approach to meta-analysis allows for the inclusion of additional information that would otherwise be discarded using the traditional approach. This is accomplished by explicitly modeling nonindependence by grouping or “clustering” effect sizes from the same sample, producing accurate standard errors and statistical tests.

Using regression, the sample size is analogous to the number of correlations included in the analysis, which differs from the traditional Hunter-Schmidt approach where the number of studies ( $k$ ) and overall sample size across studies ( $N$ ) are used to calculate the precision of the meta-analytic effect sizes. The present study included 75 correlations corrected for unreliability in the predictor and criterion (57 correlations for leadership effectiveness and 18 correlations for leadership emergence), with a total of 44 clusters.

Leadership type was coded 1 for leadership effectiveness and 0 for leadership emergence. The regression coefficient for leadership type was significant ( $b = -.21$ ,  $SE = .05$ ,  $p < .05$ ), meaning that Narcissism is moderated by leadership type.

$$\rho = b_0 + b_1(\text{leadership type})$$

Consistent with the results from the Hunter-Schmidt analysis reported above, I again found a significant positive relationship between Narcissism and leadership emergence. The

intercept of the regression model was .16 ( $SE = .04$ ,  $p < .05$ ) and, because there was only one predictor, the intercept represents the least squares predicted correlation between Narcissism and leadership emergence.

$$\rho = .16 - .21(0) = .16$$

After estimating the relationship between Narcissism and leader emergence, I next estimated the relationship between Narcissism and leader effectiveness. The least squares predicted correlation between Narcissism and leadership effectiveness was

$$\rho = .16 - .21(1) = -.05$$

Thus, using the regression approach I found that Narcissism had a small negative relationship with leadership effectiveness. Because of the small magnitude of the predicted correlation, this result is not inconsistent with that found using the traditional Hunter-Schmidt technique. In sum, the regression-based meta-analysis produced the same conclusions as the Hunter-Schmidt meta-analysis.

### **Summary of Study 1**

Narcissists are more likely to emerge as leaders under conditions of minimal acquaintance, and this positive relationship is explained by the overlap of Narcissism with Extraversion. However, despite the fact that Narcissists tend to emerge as leaders, they were no more or less likely to be rated as good leaders, on average. The nil overall relationship between Narcissism and leader effectiveness was moderated by the source of the leadership report, such that the relationship was more strongly positive for self-reports than for observer reports of leadership.

## **CHAPTER 4**

### **METHOD STUDY 2**

#### **Samples**

Six different samples collected by Hogan Assessment Systems at various organizations within the United States were used for Study 2. For more information regarding each sample, see Table 5. Notably, Hogan Assessment Systems supplied eight different samples for this investigation, but two samples were disqualified because they did not include a measure of leadership effectiveness. It was determined that one of the samples was of entry-level employees who did not have leadership responsibilities, and the other sample's leadership criterion was more accurately described as leadership emergence, not leadership effectiveness.

#### **Measures**

Narcissism was measured with the proprietary HDS Bold subscale, which was specifically designed for high-stakes testing in selection settings (Hogan & Hogan, 1997). The HDS Bold subscale consists of 14 non-obvious, true/false items embedded in a longer measure of personality, the Hogan Development Survey (HDS). The HDS assesses 11 dysfunctional dispositions (total HDS items = 168). High scorers on the Bold scale are described as "Overly self-confident, arrogant, with inflated feelings of self-worth" (HDS Overview Guide; Hogan & Hogan, 1997). The Cronbach's alpha reliability reported for the HDS Bold in the HDS technical manual is .67.

Leadership effectiveness was based on supervisor-reports, although different items assessing leadership effectiveness were used for each sample. Table 5 provides additional information about the leadership effectiveness items used for each sample.

#### **Analysis**

The data from the six samples were used to produce coefficients amenable to meta-analytic pooling. Normally, with a single sample a curvilinear hypothesis is tested using multiple regression by entering the linear and quadratic (Narcissism squared) terms together. If there is significant incremental variance explained by the quadratic term after controlling the linear term, then the relationship is considered to be nonlinear. The increment in variance explained by the curvilinear effect is represented by a squared semipartial correlation ( $\Delta R^2$ ). Because results regarding the curvilinear Narcissism effect from the six Hogan samples have not been published previously, I first reported the quadratic term and incremental variance explained by the quadratic term for each sample independently.

To give an overall estimate of the curvilinear effect size across the six samples, I followed the same procedure used by past researchers to meta-analyze curvilinear effects (Verhaeghen & Salthouse, 1997; Williams & Livingstone, 1994)<sup>3</sup>. First, I performed identical hierarchical regressions for each independent sample. Second, for each sample I took the square root of the squared semipartial correlation ( $\Delta R^2$ ), resulting in a semipartial correlation that was an estimate of the quadratic Narcissism effect, orthogonal to the linear Narcissism effect. This semipartial correlation is a Pearson correlation coefficient, and was therefore meta-analyzed using a similar procedure as described for Study 1, but without correcting for statistical artifacts (e.g., correction formulae do not exist for attenuation due to unreliability in a nonlinear/squared term). Finally, it should be noted that the linear correlations between Narcissism and leadership effectiveness from Study 2 samples were also included in the Study 1 meta-analysis of linear effects.

---

<sup>3</sup> The decision to meta-analyze the curvilinear effects, rather than to analyze the data using hierarchical linear modeling (which takes into account the non-independence of employees nested within organizations), was based on the difficulty created by each of the six samples' using a different measure of leadership effectiveness.

## CHAPTER 5

### RESULTS STUDY 2

Table 5 reports the means and standard deviations of the HDS Bold measure of Narcissism for each of the six samples. Table 6 shows the results of hierarchical regression analyses examining the relationship between Narcissism and leadership effectiveness for each of the six samples independently. As can be seen, the quadratic effect of Narcissism in Step 2 of the regression model predicting leadership effectiveness was statistically significant for two samples: Sample 2 ( $\beta = -.12, p = .05; \Delta R^2 = .014$ ) and Sample 4 ( $\beta = -.14, p = .05; \Delta R^2 = .020$ ). The signs of the quadratic effects were negative for all six samples, indicating the directions of the relationships were consistent with an inverted-U shape. Figure 1 provides a visual depiction of the quadratic regression line for each of the samples. In Figure 1, the standardized scores (z-scores) of leadership effectiveness were regressed onto the standardized scores of Narcissism. The z-score of leadership effectiveness was used because each of the samples employed a different measure of leadership effectiveness. As can be seen, the regression lines tended to indicate inverted U-shaped relationships, with magnitudes that varied across the six samples. When looking at individual primary studies, results for the nonlinear Narcissism-leadership effectiveness relationship appear weak and not consistently statistically significant. However, these small effect-size conditions are precisely the circumstances under which meta-analysis can be most useful for revealing phenomena that would have been disregarded based upon inspecting the individual small-sample primary study results alone (e.g., see Barrick & Mount, 1991; Schmidt, 1992).

Following the individual hierarchical regressions, the results from all six samples were meta-analytically combined. Results of the meta-analysis of the curvilinear terms are shown in

Table 7. These results support Hypothesis 6 that, on average, there is a curvilinear relationship between Narcissism and leadership effectiveness. The negative mean quadratic semipartial correlation coefficient was  $-.06$ , and the confidence interval surrounding this effect size did not include zero (95% CI lower limit =  $-.11$ , CI upper limit =  $-.01$ ), which indicated that the relationship between the two constructs took the shape of an inverted-U.

Noting that Narcissism's linear effect on leader emergence can be fully accounted for by Extraversion, I wondered whether Narcissism's curvilinear effect on leader *effectiveness* could also be fully explained by Extraversion alone (cf. see Hypothesis 2). This analysis was conducted with four samples, as only four of the six samples from Study 2 measured Extraversion. It should be noted that, even when using fewer samples (four instead of six), there was still a statistically significant curvilinear relationship between Narcissism and leadership effectiveness.<sup>4</sup>

Controlling for Extraversion in the hierarchical regression and then averaging these results meta-analytically across samples, we found that Narcissism continued to have a statistically significant curvilinear relationship with leadership effectiveness. In the four available samples, the negative mean quadratic semipartial correlation coefficient was  $-.16$  and the confidence interval surrounding this effect size did not include zero (95% CI lower limit =  $-.24$ , CI upper limit =  $-.09$ ).

## SUPPLEMENTARY ANALYSES

### Analyzing the Combined Primary Data

A complicating factor in analyzing the data from the six samples concurrently, using multilevel modeling techniques, was that each of the six samples used a different measure of leadership effectiveness. Therefore, I had to standardize leadership effectiveness within each

---

<sup>4</sup> The mean quadratic semipartial correlation coefficient was  $-.10$  ( $k = 4$ ;  $N = 681$ ), and the confidence interval surrounding this effect size did not include zero (95% CI lower limit =  $-.18$ , CI upper limit =  $-.03$ ).

sample. This resulted in an intra-class correlation (ICC) that was zero by definition (i.e., there was zero between-groups variance in the group-standardized z-scores for leader effectiveness), which is relevant because the ICC is often used to determine whether multilevel modeling techniques are appropriate.

Ordinary least squares regression ignores the hierarchical structure of the data; therefore it may be estimating incorrect standard errors, confidence intervals, and/or significance tests. To address this concern, I used hierarchical linear modeling (HLM) with random intercepts and slopes for Narcissism and Narcissism squared. The results from this analysis are displayed in Table 8. Narcissism ( $b = .13, p < .05$ ) and Narcissism squared ( $b = .008, p < .05$ ) both had statistically significant relationships with leadership effectiveness.

## **Summary of Study 2**

The possibility of a curvilinear relationship between Narcissism and leadership effectiveness was investigated meta-analytically across six samples. Narcissism exhibited a statistically significant non-monotonic relationship with leadership effectiveness. These results suggest that moderate levels of Narcissism contribute to leadership effectiveness, up to a maximum point, beyond which Narcissism becomes detrimental to leadership effectiveness.

## CHAPTER 6

### GENERAL DISCUSSION

I found that the effect of Narcissism depends on the type of leadership examined (emergence vs. effectiveness). The meta-analyses from Study 1 found that Narcissism is positively related to leadership emergence, but unrelated to leadership effectiveness. Narcissists thus seem more likely to emerge as leaders under conditions of minimal acquaintance. Further, this positive relationship with leadership emergence is explained by the overlap of Narcissism with Extraversion. That is, Narcissists tend to emerge as leaders because they are more Extraverted. However, the Study 1 results did not support my prediction that Narcissism would have a negative association with leader effectiveness. In fact, Narcissism had no linear association with leader effectiveness. There was one exception to this generalization—the relationship between Narcissism and leadership effectiveness was significant when leadership effectiveness ratings were based on self-reports. These self-report findings offer further evidence that Narcissists will self-enhance their own leadership achievements.

The nil results from Study 1 were somewhat clarified by Study 2, which demonstrated that the Narcissism-leadership effectiveness relationship was curvilinear (a non-monotonic, inverted U shape). Specifically, Study 2 showed that leaders were more effective when they had moderate levels of Narcissism instead of very high or very low levels. The meta-analysis was based on information from a total of 1,710 participants, and represents the most complete existing summary of the Narcissism-leadership effectiveness relationship. The larger sample size gave us more statistical power to detect the curvilinear effect, yet because these meta-analytic results were still based on a relatively small number of studies ( $k = 6$ ), these results should be interpreted with some caution. In addition, I found that Narcissism's significant non-monotonic

relationship with leadership effectiveness can be accounted for by Extraversion. In other words, Narcissism does predict leadership effectiveness and the reason is because of its overlap with Extraversion.

### **Theoretical Implications**

My findings offer a contribution to the Narcissism and leadership literature in three ways. First, my primary contribution lies in identifying the curvilinear relationship between Narcissism and leadership effectiveness. Prior theoretical discussions implicitly assumed that the relationship between Narcissism and leadership effectiveness was linear. The current findings shift the focus of this discussion by confirming that Narcissism is neither wholly beneficial nor deleterious, but is best in moderation. Further, this research highlights the importance of investigating curvilinear effects in personality-leadership research. My results support Simonton's (1995) contention that, "Because the bulk of leadership research has relied heavily on linear measures of statistical association, the empirical literature may seriously underestimate the predictive value of many measures of personal attributes" (p. 750). Future research is needed to determine if the nonlinear effect found for Narcissism and leadership effectiveness extends to other personality traits, particularly other dark side personality traits (e.g., psychopathy).

Second, there have been repeated calls to focus more attention on the impact of aberrant personality traits in the workplace, such as the dark triad (i.e., Machiavellianism, Narcissism, and Psychopathy; see Wu & LeBreton, 2011; O'Boyle et al., 2012). Dark traits appear to be especially useful when it comes to studying negative organizational behavior (e.g., counterproductive work behavior; O'Boyle et al., 2012). It follows that future researchers should abandon research investigating broad leadership emergence and leadership effectiveness outcomes and pay particular attention to Narcissism's relationship with negative leadership

behaviors, such as abusive supervision. Abusive supervision is considered to be any kind of nonphysical hostility directed at subordinates, including taking credit for subordinates' successes, scapegoating subordinates, angry outbursts, and public ridiculing (Tepper, 2007). Relatedly, research on identity-based theories of leadership has already provided an account that leaders with strong individual identities (i.e., people motivated by their own personal interests and well-being, rather than concern for dyad members or group welfare) are more likely to abuse their subordinates (Johnson, Venus, Lanaj, Mao, & Chang, 2012).

Third, this is the first study to demonstrate that Extraversion explains the Narcissism/leadership emergence relationship, as well as explaining the newly discovered curvilinear relationship with leadership effectiveness. Extraversion is the most consistent personality correlate of leadership emergence and leadership effectiveness, and the best predictor of transformational leadership (Bono & Judge, 2004; Judge, et al., 2002); but recently researchers have begun to explore the costs associated with Extraverted leadership. Grant, Gino, and Hofmann (2011) found that Extraverted leadership was associated with higher *objective* group performance when leaders were supervising a more passive group of employees; however, when employees were proactive (i.e., performed more anticipatory actions to create change) this pattern reversed - resulting in lower group-level performance outcomes for Extraverted leaders. The authors explained these findings by drawing on dominance complementarity theory (Leary, 1957; Sadler, Ethier, Gunn, Duong, & Woody, 2009; Wiggins & Pincus, 1992), suggesting that Extraverted leaders (who are assertive, dominant, and like to be the center of attention) are threatened by employees' proactive behaviors and are less receptive to others' ideas and suggestions; whereas employees' proactive behaviors are thought to complement the more reserved style of leaders low in Extraversion (Grant et al., 2011).

Similarly, it remains unclear whether certain types of employees tend to experience more satisfying working relationships with Narcissistic leaders. It would be interesting to investigate which types of employees Narcissistic leaders prefer (e.g., confident employees who stand-up for themselves versus passive employees who never contradict their leader). In sum, future research should explore the different dyadic relationships that develop between Narcissistic leaders and their subordinates, integrating interpersonal theories such as leader-member exchange with the current Narcissism-leadership literature (Ferris, Liden, Munyon, Summers, & Basik, 2009).

### **Study Limitations**

One potential limitation of my study was that, because it depended upon the availability of relevant effect sizes, the sample sizes in some of the analyses were smaller than I would have liked (i.e.,  $N = 3,131$  for leadership emergence,  $N = 4,192$  for leadership effectiveness [*without historiometric samples*], and  $N = 1,710$  for the nonlinear effect). Part of the reason the Narcissism-leadership debate has been difficult to resolve is that although there is a tremendous amount of interest in the topic and a large body of theoretical work speculating on the link between Narcissism and work outcomes – there has been surprisingly less empirical work compared to the many claims made in this field. A related limitation was that very few studies reported effect sizes between Narcissism's sub-dimensions and leadership. Narcissism might be multifaceted (Ackerman et al., 2011; Emmons, 1984; Raskin & Terry, 1988), but because nearly all available sources only reported effect sizes for global Narcissism, I was unable to investigate the role that the individual Narcissism sub-dimensions play in leadership. Future research on this topic should focus on collecting empirical evidence to clarify many of the claims made regarding Narcissism by focusing on the relationship between Narcissism's sub-dimensions and leadership.

A second limitation may be that many of the primary studies used in this meta-analysis came from unpublished sources. Unpublished sources have been accused of using inferior methods; however, it should be noted that in the current meta-analysis the type of inventory -- proprietary vs. non-proprietary (i.e., NPI vs. CPI/HDS Bold) and unpublished vs. published-- did not moderate the relationship between leadership effectiveness and Narcissism. In fact, one advantage of including unpublished sources is that published sources may have inflated effect sizes due to publication bias (cf. Aguinis, Pierce, Bosco, Dalton, & Dalton, 2010; Lipsey & Wilson, 2000; Rosenthal & DiMatteo, 2001). I believe that using effect sizes from a diverse array of sources is the best way to reach the most stable and accurate estimate of the true mean relationship between constructs. The current meta-analysis is the best summary the field currently has to interpret the relationship between Narcissism and leadership.

Third and finally, because my curvilinear Narcissism-leadership effectiveness meta-analysis was based exclusively upon the proprietary HDS Bold measure of Narcissism, I was prohibited from conducting item-level analyses to more fully explore the nonlinear relationship (cf. Hypothesis 6).

### **Practical Implications**

My findings have important implications for practice. First, individuals high in Narcissism are more likely to be selected into leadership roles, and very high levels of Narcissism are expected to hinder leadership effectiveness. This means that organizations should be wary of creating selection and promotion practices that cater to Narcissists' strengths (such as unstructured interviews); because, as mentioned previously, Narcissists can be quite charismatic under conditions of minimal acquaintance (Brunell et al., 2008; Paulhus, 1998).

Organizations that choose to use Narcissism measures as part of their selection and/or promotion procedure should be cautious regarding how these measures are scored. My findings suggest that assuming lower Narcissism scores are better is not always accurate. Instead, Narcissism levels near the population mean will be associated with the most positive leadership outcomes. Organizations should realize that, in addition to very high levels, a complete lack of Narcissism also has negative consequences for leadership effectiveness. Thus, individuals with moderate levels of Narcissism should be preferred over those with either very low or very high levels. An additional beneficial side effect of this approach is that it may be unlikely for applicants to fake having moderate levels of Narcissism.

## **CONCLUSION**

In conclusion, my findings further clarify how Narcissistic leaders impact the workplace. It is my hope that this meta-analysis will spark further empirical research on the conditions under which Narcissism produces harmful, or beneficial, workplace outcomes.

## CHAPTER 7

### REFERENCES

- Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., & Kashy, D. A. 2011. *What does the narcissistic personality inventory really measure?* *Assessment*, 18: 67-87.
- Aguinis, H., Pierce, C. A., Bosco, F. A., Dalton, D. R., & Dalton, C. M. 2010. Debunking myths and urban legends about meta-analysis. *Organizational Research Methods*, 14: 306-331.
- American Psychiatric Association. 2000. *Diagnostic and statistical manual of mental disorders* (Revised 4th ed.). Washington, DC: Author.
- Ames, D. R., & Flynn, F. J. 2007. What breaks a leader: The curvilinear relation between assertiveness and leadership? *Journal of Personality and Social Psychology*, 92: 307-324.
- \*Ames, D. R., Rose, P., & Anderson, C. P. 2006. The NPI-16 as a short measure of narcissism. *Journal of Research in Personality*, 40: 440-450.
- Andersson, L. M. & Pearson, C. M. 1999. Tit for Tat? The spiraling effect of incivility in the workplace. *The Academy of Management Review*, 24: 452-471.
- Aristotle. trans. 1999. *Nicomachean ethics* (W.D. Ross, Trans.). Kitchener, Ontario, Canada: Batoche Books.
- \*Arvais, M. A. 2007. *Narcissism as a Trait of Full-Range Leadership: A Historiometric Investigation of Corporate Executives*. Unpublished doctoral dissertation, George Washington University, Washington, DC.

- Back, M. D., Schmukle, S. C., & Egloff, B. 2010. Why are narcissists so charming at first sight? Decoding the narcissism–popularity link at zero acquaintance. *Journal of Personality and Social Psychology*, 98: 132-145.
- \*Balestri, M. *Overt and covert narcissism and their relationship to object relations, depression, machiavellianism, and the five factor model of personality*. Unpublished doctoral dissertation, Boston University, Boston.
- \*Barelds, D. P. H., & Dijkstra, P. 2010. Narcissistic personality inventory: Structure of the adapted dutch version. *Scandinavian Journal of Psychology*, 51: 132-138
- 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. 1985. *Leadership and performance beyond expectations*. New York, NJ: Free Press.
- Beal, D. J., Corey, D. M., & Dunlap, W. P. 2002. On the bias of huffcutt and arthur's (1995) procedure for identifying outliers in the meta-analysis of correlations. *Journal of Applied Psychology*, 87: 583-589.
- Beaty, J. C., Nye, C. D., Borneman, M. J., Kantrowitz, T. M., Drasgow, F., & Grauer, E. 2011. Proctored versus unproctored internet tests: Are unproctored noncognitive tests as predictive of job performance? *International Journal of Selection and Assessment*, 19, 1-10.
- \*Benson, M. J., & Campbell, J. P. 2007. To be, or not to be, linear: An expanded representation of personality and its relationship to leadership performance. *International Journal of Selection and Assessment*, 15: 232-249.

- Berscheid, E., & Reis, H. T. 1998. In Gilbert D. T., Fiske S. T. and Lindzey G. (Eds.), *Attraction and close relationships*. New York, NY, US: McGraw-Hill.
- \*Blair, C. A., Hoffman, B. J., & Helland, K. R. 2008. Narcissism in organizations: A multisource appraisal reflects different perspectives. *Human Performance*, 21: 254-276.
- Blickle, G., Schlegel, A., Fassbender, P., & Klein, U. 2006. Some personality correlates of business white-collar crime. *Applied Psychology: An International Review*, 55: 220–233.
- Bono, J. E., & Judge, T. A. 2004. Personality and transformational and transactional leadership: A meta-analysis. *Journal of Applied Psychology*, 89: 901-910.
- Borkenau, P., Brecke, S., Möttig, C., & Paelecke, M. 2009. Extraversion is accurately perceived after a 50-ms exposure to a face. *Journal of Research in Personality*, 43: 703-706.
- \* Bradlee, P. M., & Emmons, R. A. 1992. Locating narcissism within the interpersonal circumplex and the five-factor model. *Personality and Individual Differences*, 13: 821-830.
- \*Brown, R. P., Budzek, K., & Tamborski, M. 2009. On the meaning and measure of narcissism. *Personality and Social Psychology Bulletin*, 35: 951-964.
- Brown, T. A., Sautter, J. A., Littvay, L., Sautter, A. C., & Bearnes, B. 2010. Ethics and personality: Empathy and narcissism as moderators of ethical decision making in business students. *Journal of Education for Business*, 85: 203-208.
- \*Brunell, A. B., Gentry, W. A., Campbell, W. K., Hoffman, B. J., Kuhnert, K. W., & DeMarree, K. G. 2008. Leader emergence: The case of the narcissistic leader. *Personality and Social Psychology Bulletin*, 34: 1663-1676.

- Brunell, A., Staats, S., Barden, J., & Hupp, J. M. 2011. Narcissism and academic dishonesty: The exhibitionism dimension and the lack of guilt. *Personality and Individual Differences*, 50: 323-328.
- Bushman, B. J., & Baumeister, R. F. 1998. Threatened egotism, narcissism, self-esteem, and direct and displaced aggression: Does self-love or self-hate lead to violence? *Journal of Personality and Social Psychology*, 7: 219-229.
- \*Buss, D. M., & Chiodo, L. M. 1991. Narcissistic acts in everyday life. *Journal of Personality*, 59: 179-215.
- Campbell, W. K., & Campbell, S. M. 2009. On the self-regulatory dynamics created by the particular benefits and costs of narcissism: A contextual reinforcement model and examination of leadership. *Self and Identity*, 8: 214-232.
- Campbell, W. K., Reeder, G. D., Sedikides, C., & Elliot, A. J. 2000. Narcissism and comparative self-enhancement strategies. *Journal of Research in Personality*, 34: 329-347.
- Campbell, W. K., Rudich, E. A., Sedikides, C. 2002. Narcissism, self-esteem, and the positivity of self-views: Two portraits of self-love. *Personality and Social Psychology Bulletin*, 28: 358-368.
- Cattell, R.B., Cattell, A.K., & Cattell, H.E.P. 1993. *16PF Fifth Edition Questionnaire*.  
Champaign, IL: Institute for Personality and Ability Testing.
- \*Chatterjee, A., & Hambrick, D. C. 2007. It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. *Administrative Science Quarterly*, 52: 351–386.

- Chatterjee, A., & Hambrick, D. C. 2011. Executive personality, capability cues, and risk taking: How narcissistic CEOs react to their successes and stumbles. *Administrative Science Quarterly*, 56: 202-237.
- \*Clark, M. A., Lelchook, A. M., & Taylor, M. L. 2010. Beyond the Big Five: How narcissism, perfectionism, and dispositional affect relate to workaholism. *Personality and Individual Differences*, 48: 786-791.
- Cohen, J., Cohen, P., West, S. P., & Aiken, L. S. 2003. *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahway, NJ: Lawrence Erlbaum Associates, Inc.
- \*Collins, S. & Blum, T. C. 2011. *Individual differences, motivation to lead, and leader emergence: A mediated model*. Paper presented at the 71st annual conference of the Academy of Management, San Antonio, TX.
- Connolly, J. J., Kavanagh, E. J., & Viswesvaran, C. 2007. The convergent validity between self and observer ratings of personality: A meta-analytic review. *International Journal of Selection and Assessment*, 15: 110-117.
- \*Corry, N., Merritt, R. D., Mrug, S., & Pamp, B. 2008. The factor structure of the narcissistic personality inventory. *Journal of Personality Assessment*, 90: 593-600.
- Costa, P. T., & McCrae, R. R. 1992. *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- \*Costanza, D. P. 1996. *Leadership and organizational decline: The relationship between personality characteristics and organizational performance*. Unpublished doctoral dissertation, George Mason University, Fairfax, Virginia.

- Crocker, J., & Luhtanen, R. K. 2005. Alcohol use in college students: Effects of level of self-esteem, narcissism, and contingencies of self-worth. *Psychology of Addictive Behaviors*, 19: 99-103.
- Cucina, J. M., & Vasilopoulos, N. L. 2005. Nonlinear personality-performance relationships and the spurious moderating effects of traitedness. *Journal of Personality*, 73: 227-259.
- Dansereau, F., Graen, G., & Haga, W. J. 1975. A vertical dyad linkage approach to leadership within formal organizations: A longitudinal investigation of the role making process. *Organizational Behavior & Human Performance*, 13: 46-78.
- \*Davies, M. R. 2004. *Prediction of transformational leadership by personality constructs for senior Australian organizational executive leaders*. Unpublished doctoral dissertation, Griffith University. South Brisbane, Australia.
- \*Deluga, R. J. (1997). Relationship among American presidential charismatic leadership, narcissism, and rated performance. *The Leadership Quarterly*, 8: 49-65.
- Deluga, R. J., & Perry, J. T. 1994. The role of subordinate performance and ingratiation in leader-member exchanges. *Group & Organization Management*, 19: 67-86.
- Dockery, T. M., & Steiner, D. D. 1990. The role of the initial interaction in leader-member exchange. *Group & Organization Studies*, 15: 395-413.
- \*Egan, V., & McCorkindale, C. 2007. Narcissism, vanity, personality and mating effort. *Personality and Individual Differences*, 43: 2105-2115.
- Elliot, A. J., & Thrash, T. M. 2001. Narcissism and motivation. *Psychological Inquiry*, 12: 216-219.
- \*Emmons, R. A. 1984. Factor analysis and construct validity of the Narcissistic Personality Inventory. *Journal of Personality Assessment*, 48: 291-300.

- Ensari, N., Riggio, R. E., Christian, J., & Carslaw, G. 2011. Who emerges as a leader? Meta-analyses of individual differences as predictors of leadership emergence. *Personality and Individual Differences*, 51: 532-536.
- Erez, A., Bloom, M. C., & Wells, M. T. 1996. Using random rather than fixed effects models in meta-analysis: Implications for situational specificity and validity generalization. *Personnel Psychology*, 49, 275-306.
- Eysenck, H.J. 1958. A short questionnaire for the measurement of two dimensions of personality. *Journal of Applied Psychology*, 42: 14-17.
- Eysenck, H. J. & Eysenck, S. B. G. 1975. *Manual of the Eysenck Personality Questionnaire*. San Diego: Educational and Industrial Testing Service.
- Farwell, L., & Wohlwend-Lloyd, R. 1998. Narcissistic processes: Optimistic expectations, favorable self-evaluations, and self-enhancing attributions. *Journal of Personality*, 66: 65-83.
- Ferris, G. R., Liden, R. C., Munyon, T. P., Summers, J. K., Basik, K. J., & Buckley, M. R. 2009. Relationships at work: Toward a multidimensional conceptualization of dyadic work relationships. *Journal of Management*, 35: 1379-1403.
- Foster, J. D., & Campbell, W. K. 2005. Narcissism and resistance to doubts about romantic partners. *Journal of Research in Personality*, 39: 550-557.
- Foster, J. D., & Trimm, R. F. 2008. On being eager and uninhibited: Narcissism and approach-avoidance motivation. *Personality and Social Psychology Bulletin*, 34: 1004-1017.
- Freud, S. 1914/1991. On narcissism: An introduction. In J. Sandler, E. Person, & P. Fonagy (Eds.) **Freud's "On Narcissism: An Introduction"** New Haven: Yale University Press.
- Freud, S. 1931/1950. **Libidinal types**. Collected papers, Vol. 5. London: Hogarth Press.

Funder, D. C. 1995. On the accuracy of personality judgment: A realistic approach.

**Psychological Review**, 102: 652-670.

Furnham, A., Trickey, G., & Hyde, G. 2012. Bright aspects to dark side traits: Dark side traits associated with work success. **Personality and Individual Differences**, 52: 908-913.

Gabriel, M. T., Critelli, J. W., & Ee, J. S. 1994. Narcissistic illusions in self-evaluations of intelligence and attractiveness. **Journal of Personality**, 62: 143-155.

\*Galvin, B. M., Waldman, D. A., & Balthazard, P. 2010. Visionary communication qualities as mediators of the relationship between narcissism and attributions of leader charisma.

**Personnel Psychology**, 63: 509-537.

Gerstner, C. R. & Day, D. V. 1997. Meta-analytic review of leader-member exchange theory: Correlates and construct issues. **Journal of Applied Psychology**, 82: 827-844.

Goldberg, L. R. 1992. The development of markers for the Big-Five factor structure.

**Psychological Assessment**, 4: 26-42.

Goncalo, J. A., Flynn, F. J., & Kim, S. H. 2010. Are two narcissists better than one? The link between narcissism, perceived creativity, and creative performance. **Personality and Social Psychology Bulletin**, 36: 1484-1495.

Gough, H. G., & Bradley, P. 1992. Delinquent and criminal behavior as assessed by the revised california psychological inventory. **Journal of Clinical Psychology**, 48: 298-308.

Gough, H. G., & Bradley, P. 2002. **CPI manual** (3rd ed.). Mountain View, CA: Consulting Psychologists Press.

Graen, G. B., & Uhl-Bien, M. 1995. Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. **The Leadership Quarterly**, 6: 219-247.

- Grant, A. M., Gino, F., & Hofmann, D. A. 2011. Reversing the extraverted leadership advantage: The role of employee proactivity. *Academy of Management Journal*, 54: 656-656.
- \*Harms, P. D. 2009. *Narcissism, Leadership, and Communication: Study 1*. Unpublished raw data.
- \*Harms, P. D. 2009. *Narcissism, Leadership, and Communication: Study 2*. Unpublished raw data.
- \*Harms, P. D. 2009. *Narcissism and Group Decision Making: Study 1*. Unpublished raw data.
- \*Harms, P. D. 2009. *Narcissism and Group Decision Making: Study 2*. Unpublished raw data.
- \*Harms, P.D., Spain, S.M., & Hannah, S.T. 2011a. Leader development and the dark side of personality. *Leadership Quarterly*, 22: 495-509.
- \*Harms, P.D., Spain, S.M., & Hannah, S.T., Hogan, R., & Foster, J. 2011. *You underestimate the power of the dark side: Subclinical traits, the Big Five, and Job Performance*. Paper presented at the 26th annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.
- \*Hendin, H.M. 2001. *Narcissism, Motives, and Emotions: An exploration of the Narcissistic Paradox*. Unpublished doctoral dissertation. University of California, Davis, Davis, CA.
- \*Hendin, H. M., & Cheek, J. M. 1997. Assessing hypersensitive narcissism: A reexamination of murray's narcissism scale. *Journal of Research in Personality*, 31: 588-599.
- Higgins, E. T. 1998. Promotion and prevention: Regulatory focus as a motivational principle. *Advances in Experimental Social Psychology*, 30: 1- 46.
- \*Hill, P. L. & Roberts, B. W. 2012. Narcissism, well-being, and observer-rated personality across the lifespan. *Social Psychological and Personality Science*, 3: 216-223.

- \*Hoexter, M. F. 1998. *Narcissism and conversational interaction: The influence of personality on discourse structure*. Unpublished doctoral dissertation. University of Michigan. Ann Arbor, Michigan.
- \*Hogan, R., & Hogan, J. 1994. *Hogan Personality Inventory Manual*. Tulsa, OK: Hogan Assessment Systems.
- \*Hogan, R., & Hogan, J. 1997. *Hogan Development Survey*. Tulsa, Oklahoma: Hogan Assessment Systems.
- Hogan, R., & Hogan, J. 2001. Assessing leadership: A view of the dark side. *International Journal of Selection and Assessment*, 9: 40-51.
- Hogan, R., Raskin, R., & Fazzini, D. 1990. In Clark K. E., Clark M. B. (Eds.) *The dark side of charisma*. West Orange, NJ: Leadership Library of America.
- \*Huang, L., Harms, P. D., & Luthans, F. 2012. *Narcissism and Tea, Dynamics in China*. Working paper, University of Nebraska-Lincoln School of Management, Lincoln, NE.
- Huffcutt, A. I., & Arthur, W. 1995. Development of a new outlier statistic for meta-analytic data. *Journal of Applied Psychology*, 80, 327-334.
- Hunter, J.E., & Schmidt, F.L. 2004. *Methods of meta-analysis: Correcting error and bias in research findings* (2nd ed.). Thousand Oaks, CA: Sage.
- \*Jakobwitz, S., & Egan, V. 2006. The dark triad and normal personality traits. *Personality and Individual Differences*, 40: 331-339.
- \*Jarvis, M. M. 2010. *Facebook and personality: What do status updates really communicate?* Unpublished master's thesis, The University of Arizona, Tucson.

- John, O. P., & Robins, R. W. 1994. Accuracy and bias in self-perception: Individual differences in self-enhancement and the role of narcissism. *Journal of Personality and Social Psychology*, 66: 206-219.
- John, O.P., & Srivastava, S. 1999. The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of Personality: Theory and Research*, 2: 102-138.
- Johnson, R. E., Venus, M., Lanaj, K., Mao, C., & Chang, C.-H. in press. Leader Identity as an antecedent of the frequency and consistency of transformational, consideration and abusive supervision behaviors. *Journal of Applied Psychology*.
- \*Jonason, P. K., Li, N. P., Teicher, E. A. 2010. Who is James Bond?: The Dark Triad as an agentic social style. *Individual Differences Research*, 8: 111-120.
- Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. 2002. Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, 87: 765-780.
- \*Judge, T. A., LePine, J. A., & Rich, B. L. 2006. Loving yourself abundantly: Relationship of the narcissistic personality to self- and other perceptions of workplace deviance, leadership, and task and contextual performance. *Journal of Applied Psychology*, 91: 762-776.
- Judge, T. A., Piccolo, R. F., & Kosalka, T. 2009. The bright and dark sides of leader traits : A review and theoretical extension of the leader trait paradigm. *The Leadership Quarterly*, 20: 855-875.
- Judge, T.A., Thoresen, C.J., Bono, J.E., & Patton, G.K. 2001. The job-satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127: 376-407.

- Kets de Vries M.F.R., & Miller D. 1985. Narcissism and leadership: An object relations perspective. *Human Relations*, 38: 583–601.
- \*Khoo, H.S. & Burch, G.J. 2008. The ‘dark side’ of leadership personality and transformational leadership: An exploratory study. *Personality and Individual Differences*, 44: 86-97.
- Krasikova, D. V., Green, S. G., & LeBreton, J. M. 2013. Destructive leadership: A theoretical review, integration, and future research agenda. *Journal of Management*, 39: 1308-1338.
- \*Kubarych, T. S., Deary, I. J., & Austin, E. J. 2004. The narcissistic personality inventory: Factor structure in a non-clinical sample. *Personality and Individual Differences*, 36: 857-872.
- LaHuis, D. M., Martin, N. R., & Avis, J. M. 2005. Investigating nonlinear conscientiousness-job performance relations for clerical employees. *Human Performance*, 18: 199-212.
- Lakey, C.E., Goodie, A.S., & Campbell, W.K. 2007. Frequent card playing and pathological gambling: The utility of the Georgia Gambling Task and Iowa Gambling Task for predicting pathology. *Journal of Gambling Studies*, 23: 285-297.
- Le, H., Oh, I., Robbins, S. B., Ilies, R., Holland, E., & Westrick, P. 2011. Too much of a good thing: Curvilinear relationships between personality traits and job performance. *Journal of Applied Psychology*, 96: 113-133.
- Leary, T. 1957. *Interpersonal Diagnosis of Personality*. New York: Ronald Press
- \*Lee, K., & Ashton, M. C. 2005. Psychopathy, machiavellianism, and narcissism in the five-factor model and the HEXACO model of personality structure. *Personality and Individual Differences*, 38: 1571-1582.

- LePine, J. A., Erez, A., & Johnson, D. E. 2002. The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology*, 87, 52-65.
- \*Lindberg, J. T. 2006. *The relative and incremental validity of the Big Five and maladaptive personality characteristics for predicting leadership effectiveness*. Unpublished master's thesis. North Carolina State University, Raleigh, North Carolina.
- Lipsey, M. W. & Wilson, D. 2000. *Practical meta-analysis*. Thousand Oaks, California: Sage
- 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.
- Luthans, F. & Avolio, B. J. 2009. The “point” of positive organizational behavior. *Journal of Organizational Behavior*, 30: 291-307.
- Maccoby, M. 2000. Narcissistic leaders: The incredible pros, the inevitable cons. *Harvard Business Review*, 82: 92–101.
- \*Marcus, B., Machilek, F., & Schutz, A. 2006. Personality in cyberspace: Personal web sites as media for personality expressions and impressions. *Journal of Personality and Social Psychology*, 90: 1014-1031.
- McCall, M. W. Jr., & Lombardo, M. M. 1983. *Off the track: Why and how successful executives get derailed*. Technical Report No. 21. Greensboro, NC: Center for Creative Leadership.

- McCauley, C. D., & Lombardo, M. M. 1990. Benchmarks: An instrument for diagnosing managerial strengths and weaknesses. In K. E. Clark & M. B. Clark (Eds.), *Measures of leadership* (pp. 535-545). Greensboro, NC: Center for Creative Leadership.
- \*Miller, J. D., & Campbell, W. K. 2008. Comparing clinical and social-personality conceptualizations of narcissism. *Journal of Personality*, 76: 449-476.
- \*Miller, J. D., Gaughan, E. T., Pryor, L. R., Kamen, C., & Campbell, W. K. 2009. Is research using the narcissistic personality inventory relevant for understanding narcissistic personality disorder? *Journal of Research in Personality*, 43: 482-488.
- \*Miller, J. D., Price, J., & Campbell, W. K. 2011. Is the Narcissistic Personality Inventory still relevant? A test of independent grandiosity and entitlement scales in the assessment of Narcissism. *Assessment*, 19: 8-13.
- Millon, T.; Millon, C., Davis, R., & Grossman, S. 2009. *MCMI-III Manual* (Fourth ed.). Minneapolis, MN: Pearson Education, Inc.
- Morf, C. C., & Rhodewalt, F. 2001. Expanding the dynamic self-regulatory processing model of narcissism: Research directions for the future. *Psychological Inquiry*, 12: 243-251.
- Morrison, A. M., White, R. P., & Van Velsor, E. 1987. *Breaking the glass ceiling*. Reading, MA: Addison-Wesley.
- \*Nathanson, C., Paulhus, D. L., & Williams, K. M. 2006. Predictors of a behavioral measure of scholastic cheating: Personality and competence but not demographics. *Contemporary Educational Psychology*, 31: 97-122.
- \*Nevicka, B., De Hoogh, A. H. B., Van Vianen, A. E. M., Beersma, B., & McIlwain, D. 2011a. All I need is a stage to shine: Narcissists leader emergence and performance. *The Leadership Quarterly*, 22: 910-925.

- Nevicka, B., Ten Velden, F. S., De Hoogh, A. H. B., & Van Vianen, A. E. M. 2011b. Reality at odds with perceptions: Narcissistic leaders and group performance. *Psychological Science*, 22: 1259-1264.
- Nunnally, J. C. 1978. Psychometric theory. New York: McGraw-Hill.
- Nye, C. D., Su, R., Rounds, J., & Drasgow, F. 2012. Vocational interests and performance: A quantitative summary of over 60 years of research. *Perspectives on Psychological Science*, 7, 384-403.
- O'Boyle, E. H., Forsyth, D. R., Banks, G. C., & McDaniel, M. A. 2012. A meta-analysis of the dark triad and work behavior: A social exchange perspective. *Journal of Applied Psychology*, 97: 557-579.
- \*Oshio, A. & Harms, P. D. 2005. *Narcissism and Leadership Emergence in Japan*.  
Unpublished raw data.
- Padilla, A., Hogan, R., & Kaiser, R.B. 2007. The toxic triangle: Destructive leaders, susceptible followers, and conducive environments. *The Leadership Quarterly*, 18: 176-194.
- \*Paulhus, D.L. 1998. Interpersonal and intrapsychic adaptiveness of trait self-enhancement. *Journal of Personality and Social Psychology*, 74: 197-208.
- Paulhus, D.L., Westlake, B., Calvez, S., & Harms, P.D. (in press) Self-presentation success: A matter of self-promotion, not self-enhancement? *Journal of Applied Social Psychology*.
- \*Paulhus, D. L., & Williams, K. M. 2002. The dark triad of personality: Narcissism, Machiavellianism and Psychopathy. *Journal of Research in Personality*, 36: 556-563.
- Paunonen, S. V., Lönnqvist, J., Verkasalo, M., Leikas, S., & Nissinen, V. 2006. Narcissism and emergent leadership in military cadets. *The Leadership Quarterly*, 17: 475-486.

- Penney, L. M., & Spector, P. E. 2002. Narcissism and counterproductive work behavior: Do bigger egos mean bigger problems? *International Journal of Selection and Assessment*, 10: 126-134.
- \*Peterson, S. J., Galvin, B. M., & Lange, D. 2012. CEO servant leadership: Exploring executive characteristics and firm performance. *Personnel Psychology*, 65: 565-596.
- Pierce, J. R. & Aguinis, H. (in press). Too-much-of-a-good-thing effect in management. *Journal of Management*.
- Raskin, R., & Hall, C. S. 1981. The Narcissistic Personality Inventory: Alternate form reliability and further evidence of construct validity. *Journal of Personality Assessment*, 45: 159-162.
- Raskin, R., & Terry, H. 1988. A principal-components analysis of the narcissistic personality inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology*, 54: 890-902.
- \*Resick, C. J., Whitman, D. S., Weingarden, S. M., & Hiller, N. J. 2009. The bright-side and the dark-side of CEO personality: Examining core self-evaluations, narcissism, transformational leadership, and strategic influence. *Journal of Applied Psychology*, 94: 1365-1381.
- Richman, W. L., Kiesler, S., Weisband, S., & Drasgow, F. 1999. A meta-analytic study of social desirability distortion in computer-administered questionnaires, traditional questionnaires, and interviews. *Journal of Applied Psychology*, 84, 754-775.
- Robins, R. W., & Beer, J. S. 2001. Positive illusions about the self: Short-term benefits and long-term costs. *Journal of Personality and Social Psychology*, 80: 340-352.

- Robins, R. W., & John, O. P. 1997. Effects of visual perspective and narcissism on self-perception: Is seeing believing? *Psychological Science*, 8: 37-42.
- Rosenthal, R., & DiMatteo, M. R. 2001. Meta analysis: Recent developments in quantitative methods for literature reviews. *Annual Review of Psychology*, 52: 59-82. doi: <http://dx.doi.org/10.1146/annurev.psych.52.1.59>
- Rosenthal, S. A., & Pittinsky, T. L. 2006. Narcissistic leadership. *The Leadership Quarterly*, 17: 617-633.
- Sackett, P.R. 2002. The structure of counterproductive work behaviors: Dimensionality and relationships with facets of job performance. *International Journal of Selection and Assessment*. Special Issue: Counterproductive behaviors at work, 10: 5-11.
- Sadler, P., Ethier, N., Gunn, G. R., Duong, D., & Woody, E. 2009. Are we on the same wavelength? Interpersonal complementarity as shared cyclical patterns during interactions. *Journal of Personality and Social Psychology*, 97: 1005-1020.
- \*Samuel, D. B., & Widiger, T. A. 2008. Convergence of narcissism measures from the perspective of general personality functioning. *Assessment*, 15: 364-374.
- Sankowsky, D. 1995. The charismatic leader as narcissist: Understanding the abuse of power. *Organizational Dynamics*, 23: 57-71.
- Saucier, G. 1994. Mini-markers: A brief version of goldberg's unipolar big-five markers. *Journal of Personality Assessment*, 63: 506-516.
- Saucier, G., & Ostendorf, F. 1999. Hierarchical subcomponents of the big five personality factors: A cross-language replication. *Journal of Personality and Social Psychology*, 76: 613-627.

- Schmidt, F. L. 1992. What do data really mean? Research findings, meta-analysis, and cumulative knowledge in psychology. *American Psychologist*, 47: 1173-1181.
- \*Schnure, K. 2010. *Narcissism levels and ratings of executive leadership potential*. Paper presented at the Annual Conference of the Society for Industrial and Organizational Psychology, Atlanta, GA.
- Seligman, M. E. P., & Csikszentmihalyi, M. 2000. Positive psychology: An introduction. *American Psychologist*, 55: 5-14.
- Simonton, D. K. 1995. In Saklofske D. H., Zeidner M. (Eds.), *Personality and intellectual predictors of leadership*. New York, NY, US: Plenum Press, New York, NY.
- Shondrick, S. J., Dinh, J. E., & Lord, R. G. 2010. Developments in implicit leadership theory and cognitive science: Applications to improving measurement and understanding alternatives to hierarchical leadership. *The Leadership Quarterly*, 21: 959-978.
- Stogdill, R. M. 1963. In Sells S. B. (Ed.), *What should be expected of expectation theory?* Oxford, England: Ronald Press.
- Tamborski, M., Brown, R. P., & Chowning, K. 2012. Self-serving bias or simply serving the self? evidence for a dimensional approach to narcissism. *Personality and Individual Differences*, 52: 942-946.
- Tepper, B. J. 2000. Consequences of abusive supervision. *Academy of Management Journal*, 43: 178-190.
- Tepper, B. J. 2007. Abusive supervision in work organizations: Review synthesis, and research agenda. *Journal of Management*, 33: 261-289.

- Torregiante, J. 2005. *Destructive personality traits and leadership performance: A pattern-oriented approach*. Unpublished master's thesis, North Carolina State University, Raleigh, NC.
- \*Trzesniewski, K. H., Donnellan, M. B., & Robins, R. W. 2008. Is "generation me" really more narcissistic than previous generations? *Journal of Personality*, 76: 903-918.
- Uhl-Bien, M. 2006. Relational leadership theory: Exploring the social processes of leadership and organizing. *The Leadership Quarterly*, 17: 654-676.
- Van Velsor, E., & Leslie, J. B. 1995. Why executives derail: Perspectives across time and cultures. *The Academy of Management Perspectives*, 9: 62-62.
- Vazire, S., & Funder, D. C. (2006). Impulsivity and the self-defeating behavior of narcissists. *Personality and Social Psychology Review*, 10: 154-165.
- Vazire, S., Naumann, L. P., Rentfrow, P. J., & Gosling, S. D. 2008. Portrait of a narcissist: Manifestations of narcissism in physical appearance. *Journal of Research in Personality*, 42: 1439-1447.
- Verhaeghen, P., & Salthouse, T. A. 1997. Meta-analyses of age-cognition relations in adulthood: Estimates of linear and nonlinear age effects and structural models. *Psychological Bulletin*, 122: 231-249.
- Viswesvaran, C., & Ones, D. S. 2000. Measurement error in "big five factors" personality assessment: Reliability generalization across studies and measures. *Educational and Psychological Measurement*, 60: 224-235.
- 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.

- \*Watts, A. L., Smith, S. F., & Lilienfeld, S. O. 2013. *The bright and dark sides of narcissistic personality: Examining the dual implications of grandiose narcissism in the workplace*. Paper presented at the 3rd annual conference of the Association of Personality, Charlotte, NC.
- Wiggins, J. S. & Pincus, A. L. 1992. Personality: Structure and assessment. *Annual Review of Psychology*, 43: 473-504.
- Williams, C. R., & Livingstone, L. P. 1994. Another look at the relationship between performance and voluntary turnover. *Academy of Management Journal*, 37: 269-298.
- \*Williams, K. M., Nathanson, C., & Paulhus, D. L. 2010. Identifying and profiling scholastic cheaters: Their personality, cognitive ability, and motivation. *Journal of Experimental Psychology: Applied*, 16: 293-307.
- Wink, P., & Gough, H. G. 1990. New narcissism scales for the California psychological inventory and MMPI. *Journal of Personality Assessment*, 54: 446-462.
- \*Wonneberg, D. A. 2007. *The nature of narcissism within organizational leadership*. Unpublished doctoral dissertation, Capella University, Minneapolis, MN.
- Wu, J., & LeBreton, J. M. 2011. Reconsidering the dispositional basis of counterproductive work behavior: The role of aberrant personality. *Personnel Psychology*, 64: 593-626.
- \*Yocum, R. 2006. *The moderating effects of Narcissism on the relationship between Emotional Intelligence and Leadership Effectiveness, Moral Reasoning, and Managerial Trust*. Unpublished doctoral dissertation, Seattle Pacific University, Seattle, WA.

## CHAPTER 8 TABLES

Table 1.  
*Meta-Analytic Results for Narcissism and Leadership Criteria*

	<i>k</i>	<i>N</i>	<i>r</i>	$\hat{\rho}$	SD $\hat{\rho}$	95% Confidence Int.		80% Credibility Int.	
						LL	UL	LL	UL
<i>Leadership Emergence</i>									
Narcissism	18	3131	.12	.16	.00	.08	.15	.16	.16
<i>Length of Acquaintance</i>									
Minimal Acquaintance	13	2283	.13	.18	.00	.09	.18	.18	.18
Longer Acquaintance	5	848	.07	.09	.06	.002	.14	.02	.16
<i>Leadership Effectiveness</i>									
Narcissism									
(with historiometric)	31	4808	.02	.03	.20	-.01	.05	-.22	.28
(without historiometric)	26	4192	.02	.03	.14	-.01	.05	-.14	.21

*Note.* *k* = number of effect sizes included in the meta-analysis; *N* = total sample size in the meta-analysis; *r* = sample-size weighted mean correlation;  $\hat{\rho}$  = correlation corrected for attenuation in the predictor and criterion; SD  $\hat{\rho}$  = standard deviation of corrected correlation; 80% Credibility Int. LL/UL= lower and upper limits of 80% credibility interval for  $\hat{\rho}$ ; 95% Confidence Int. LL/UL = lower and upper limits of 95% confidence interval for *r*; *with(out)* historiometric = effect size calculated including/excluding historiometric measures of Narcissism.

Table 2.

*Meta-Analytic Results for Leadership by Narcissism Inventory and Source of Leadership Report*

	<i>k</i>	<i>N</i>	<i>r</i>	$\hat{\rho}$	SD $\hat{\rho}$	95% Confidence Int.		80% Credibility Int.	
						LL	UL	LL	UL
<b>Source of Leadership Report</b>									
<i>Leadership Effectiveness</i>									
Self-Report	11	1941	.21	.29	.15	.17	.25	.10	.48
Supervisor-Report	19	3390	.03	.04	.08	-.01	.06	-.06	.14
Subordinate-Report	10	1698	.08	.12	.00	.03	.13	.12	.12
Peer-Report	8	1523	.01	.02	.16	-.04	.06	-.19	.23
<b>Narcissism Inventory</b>									
<i>Leadership Emergence</i>									
NPI	11	1893	.13	.16	.00	.08	.17	.16	.16
HDS Bold	3	574	.08	.13	.18	.003	.17	-.10	.37
CPI	4	664	.12	.16	.00	.04	.20	.16	.16
<i>Leadership Effectiveness</i>									
NPI	6	602	-.06	-.09	.19	-.14	.02	-.37	.19
HDS Bold	19	3442	.04	.06	.09	.01	.07	-.06	.18
CPI	1	148	-.19						
Historiometric	5	616	-.01	-.02	.38	-.09	.07	-.50	.47

*Note.* NPI = Narcissistic Personality Inventory; HDS = Hogan Developmental Survey; CPI = California Personality Inventory; *k* = number of effect sizes included in the meta-analysis; *N* = total sample size in the meta-analysis; *r* = sample-size weighted mean correlation;  $\hat{\rho}$  = correlation corrected for attenuation in the predictor and criterion; SD  $\rho$  = standard deviation of corrected correlation; 80% Credibility Int. LL/UL= lower and upper limits of 80% credibility interval for  $\hat{\rho}$ ; 95% Confidence Int. LL/UL = lower and upper limits of 95% confidence interval for *r*.

Table 3.  
*Meta-Analytic Results for Narcissism and Leadership Criteria – Moderators*

	<i>k</i>	<i>N</i>	<i>r</i>	$\hat{\rho}$	SD $\hat{\rho}$	95% Confidence Int.		80% Credibility Int.	
						LL	UL	LL	UL
<b>Publication Type</b>									
<i>Leadership Emergence</i>									
Published Papers	4	1214	.14	.17	.00	.08	.19	.17	.17
Unpublished Papers	14	1917	.10	.14	.00	.06	.15	.14	.14
Technical Manual	5	654	.06	.07	.04	-.02	.13	.02	.12
Dissertation/Thesis	2	544	.16	.25	.00	.08	.25	.25	.25
Conference Paper	1	200	.14						
Unpublished Manuscript	6	519	.09	.12	.00	.002	.17	.12	.12
<i>Leadership Effectiveness*</i>									
Published Paper	7	1803	.01	.02	.15	-.04	.06	-.17	.20
Unpublished Papers	19	2389	.03	.05	.08	-.01	.07	-.06	.15
Technical Manual	14	1799	.03	.04	.00	-.02	.07	.04	.04
Dissertation/Thesis	3	370	.07	.11	.16	-.03	.18	-.10	.32
Conference Paper	1	117	.09						
Unpublished Manuscript	1	103	-.04						
<b>Type of Sample</b>									
<i>Leadership Emergence</i>									
Undergraduates	12	2046	.13	.17	.00	.09	.17	.17	.17
Working Adults	6	1085	.09	.12	.06	.03	.15	.04	.20
<i>Leadership Effectiveness*</i>									
Working Students	4	519	.05	.05	.07	-.04	.13	-.04	.14
Working Adults	21	2754	-.001	.01	.00	-.04	.04	.01	.01
Military Cadets	1	919	.08						

*Note.* *k* = number of effect sizes included in the meta-analysis; *N* = total sample size in the meta-analysis; *r* = sample-size weighted mean correlation;  $\hat{\rho}$  = correlation corrected for attenuation in the predictor and criterion; SD  $\hat{\rho}$  = standard deviation of corrected correlation; 80% Credibility Int. LL/UL= lower and upper limits of 80% credibility interval for  $\hat{\rho}$ ; 95% Confidence Int. LL/UL = lower and upper limits of 95% confidence interval for *r*; \*historiometric studies were not included in these analyses..

Table 4.  
*Meta-Analytic Correlation Matrix of Variables in Extraversion Analyses*

	1	2
1. Narcissism	---	
2. Leadership Emergence	.16 <sup>a</sup> 18/3,131	---
3. Extraversion	.55 <sup>a*</sup> 42/28,345	.33 <sup>b</sup> 37/?

*Note.* Each cell contains the estimated corrected correlation, followed by  $k$  number of effect sizes and  $N$  sample size. <sup>a</sup> = Original meta-analysis; \*Extraversion-Narcissism  $r = .45$ ;  $SD \rho = .09$ ; 95% Confidence Interval for  $r = [.44, .46]$ ; <sup>b</sup> = Judge et al. (2002) reported the average effect size and number of studies  $k$ , but did not report the  $N$ s for the meta-analysis broken down by leadership emergence/leadership effectiveness; for leadership emergence/leadership effectiveness combined: Extraversion-Leadership  $k = 60$ ,  $N = 11,705$ .

Table 5.  
*Description of Study 2 Samples and Leadership Measures*

Sample	N	Mean Nar	SD Nar	% Male	% White	Average Age	Industry	Leadership Measures
Sample 1	103	8.06	2.95	97	85	43	Cost Estimation	5 items; Sample items: “anticipates future needs, communicates the big picture and thinks strategically, forecasts problems/pitfalls and acts to minimize them”
Sample 2	290	7.97	2.59	---	---	---	Postal Service	12 items; Business Leadership, People Leadership, Results Leadership, Self-Leadership
Sample 3	119	7.69	2.56	62	75	38	Communications	Overall job performance of leader (unclear how many items)
Sample 4	216	7.14	2.67	53	39*	43	Banking	1 item; overall job performance of leader - 5 point likert scale
Sample 5	798	7.46	2.64	68	25*	40	Pharmaceutical	9 items; Sample items: “adjusts his/her leadership style according to the demands of the situation, articulates goals and standards in a manner that is energizing and meaningful, communicates objectives/goals to his/her team/work unit in a timely way”
Sample 6	184	7.75	2.47	83	82	---	Manufactured Goods	58 items; Overall job performance of leader; Sample item: “Balances a concern for results with a concern for the needs of individuals in his/her work group”

*Note.* N = sample size; Mean Nar = mean of Narcissism measure; SD Nar = standard deviation of Narcissism measure; \*Native Americans were the largest racial/ethnic group; --- denotes unavailable information; All leadership measures are based on supervisor-report.

Table 6.  
Examining the Linearity of the Narcissism-Leader Effectiveness Relationship in Multiple Samples

	Sample 1				Sample 2				Sample 3			
Predictor	<i>B</i>	$\beta$	$R^2$	$\Delta R^2$	<i>B</i>	$\beta$	$R^2$	$\Delta R^2$	<i>B</i>	$\beta$	$R^2$	$\Delta R^2$
Step 1												
Narcissism	.25	.12	.015		-.13*	-.12*	.014*		-.01	-.08	.006	
Step 2												
Narcissism	.20	.10			-.15*	-.14*			-.01	-.10		
Narcissism squared (quadratic effect)	-.03	-.05	.016	.001	-.04	-.12*	.028*	.014*	-.006	-.13	.023	.017

Note. \* $p < .05$ ; Sample 1:  $N = 103$ ; Sample 2:  $N = 290$ ; Sample 3:  $N = 119$ ;  $B$  = unstandardized regression coefficient;  $\beta$  = standardized regression coefficient;  $R^2$  = amount of variance explained by predictors;  $\Delta R^2$  = amount of variance explained by quadratic Narcissism beyond that explained by linear Narcissism.

	Sample 4				Sample 5				Sample 6			
Predictor	<i>B</i>	$\beta$	$R^2$	$\Delta R^2$	<i>B</i>	$\beta$	$R^2$	$\Delta R^2$	<i>B</i>	$\beta$	$R^2$	$\Delta R^2$
Step 1												
Narcissism	.01	.05	.003		.03*	.08*	.007*		.002	.01	.000	
Step 2												
Narcissism	.02	.06			.03*	.08*			-.003	-.02		
Narcissism squared (quadratic effect)	-.01*	-.14*	.023*	.020*	-.002	-.02	.007	.000	-.005	-.10	.009	.009

Note. \* $p < .05$ ; Sample 4:  $N = 216$ ; Sample 5 = 798; Sample 6 = 184;  $B$  = unstandardized regression coefficient;  $\beta$  = standardized regression coefficient;  $R^2$  = amount of variance explained by predictors;  $\Delta R^2$  = amount of variance explained by quadratic Narcissism beyond that explained by linear Narcissism.

Table 7.

*Curvilinear Relationship between Narcissism and Leadership Effectiveness*

Leadership Effectiveness	<i>k</i>	<i>N</i>	$\Delta R$	95% Confidence Int.	
				LL	UL
Narcissism (quadratic effect)	6	1710	-.06	-.11	-.01

*Note.* *k* = number of effect sizes included in the meta-analysis; *N* = total sample size in the meta-analysis;  $\Delta R$  = sample-size weighted mean square root of  $\Delta R^2$ ; 95% Confidence Int. LL/UL = lower and upper limits of 95% confidence interval for  $\Delta R$ .

Table 8.  
*Hierarchical Linear Modeling Results*

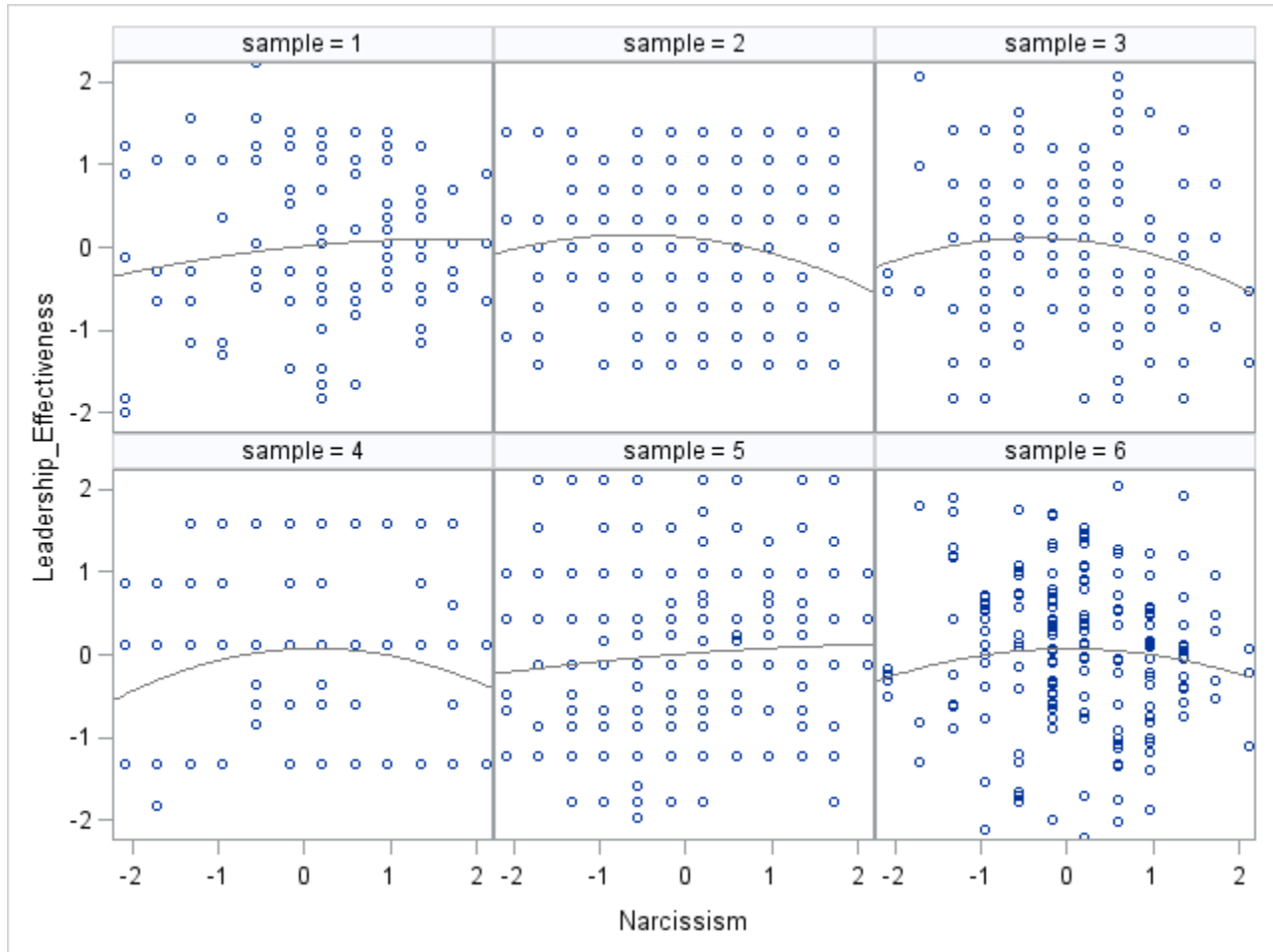
	Leadership Effectiveness
Intercept	-.48 (.15)*
Narcissism	.13 (.04)*
Narcissism squared (quadratic effect)	-.01 (.003)*

*Notes.* Entries are unstandardized coefficients; values in parentheses are standard errors.

\* $p < .05$

## CHAPTER 9 FIGURES

Figure 1.  
*Relationship between Narcissism and Leadership Effectiveness*



*Note.* Narcissism and Leadership Effectiveness are standardized. The scale of the horizontal axis was set using  $\pm 2$  standard deviations of Narcissism. The scale of the vertical axis was set using  $\pm 2$  standard deviations of leadership effectiveness.

## APPENDIX A

### Main Codes and Input Values for Leadership Studies in the Meta-Analysis

Study	Type of Leadership	Type of Publication	Sample	Narcissism Measure	Source of Leadership Report	<i>N</i>	<i>r</i> <sup>a</sup>
Arvisais (2007)	Leadership Effectiveness	Dissertation	Employees	Historiometric	Student Ratings of Leader Profiles	67	.16
Benson & Campbell (2007)	Leadership Effectiveness	Journal Article	Employees	HDS Bold	Mix	290	-.10
Blair, Hoffman, & Holland (2008)	Leadership Effectiveness	Journal Article	Employees	CPI	Supervisor; Subordinate;	148	-.13
Brunell, et al., (2008) Study 1	Leadership Emergence	Journal Article	Students	NPI	Student Ratings; LGD	432	.16
Brunell, et al., (2008) Study 2	Leadership Emergence	Journal Article	Students	NPI	Student Ratings; LGD	408	.08
Brunell, et al., (2008) Study 3	Leadership Emergence	Journal Article	Students	CPI	Expert Ratings; LGD	153	.20
Chatterjee & Hambrick (2007)	Leadership Effectiveness	Journal Article	Employees	Historiometric	Archival Ratings	111	.37 <sup>b</sup>
Collins & Blum (2011)	Leadership Emergence	Conference Paper	Students	NPI	Student Ratings; LGD	200	.14
Costanza (1996)	Leadership Effectiveness	Dissertation	Employees	Historiometric	Student Ratings of Leader Profiles	324	-.16 <sup>c</sup>
CPI Technical Manual – Sample 1	Leadership Emergence	Technical Manual	Employees	CPI	Assessment Center Ratings	111	.10
CPI Technical Manual – Sample 2	Leadership Emergence	Technical Manual	Employees	CPI	Assessment Center Ratings	200	.07
CPI Technical Manual – Sample 3	Leadership Emergence	Technical Manual	Employees	CPI	Assessment Center Ratings	200	.12
Davies (2004)	Leadership Effectiveness	Dissertation	Employees	HDS Bold	Subordinate Historian's Ratings & Student Ratings of Leader Profiles	183	.11
Deluga (1997)	Leadership Effectiveness	Journal Article	Employees	Historiometric		39	.48 <sup>d</sup>
Galvin, Waldman, & Balthazard (2010)	Leadership Effectiveness	Journal Article	Employees	NPI	Mix	55	.15

Appendix A (continued)

Study	Type of Leadership	Type of Publication	Sample	Narcissism Measure	Source of Leadership Report	<i>N</i>	<i>r<sup>a</sup></i>
Harms (2004) – Sample 1	Leadership Emergence	Unpublished Data	Students	NPI	Student Ratings	305	.11
Harms (2009) – Sample 2	Leadership Emergence	Unpublished Data	Students	NPI	Student Ratings	32	-.001
Harms (2009) – Sample 3	Leadership Emergence	Unpublished Data	Students	NPI	Student Ratings	26	.14
Harms (2009) – Sample 4	Leadership Emergence	Unpublished Data	Students	NPI	Student Ratings	32	.04
Harms (2009) – Sample 5	Leadership Emergence	Unpublished Data	Students	NPI	Student Ratings	28	.09
Harms, Spain, & Hannah (2011a)	Leadership Effectiveness (Officership; Year 4)	Journal Article	Military Sample	HDS Bold	Supervisor	919	.08
Harms, Spain, Hannah, Hogan, & Foster (2011b)	Leadership Effectiveness	Conference Paper	Employees	HDS Bold	Supervisor	117	.09
HDS Technical Manual – Sample 1	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor	79	-.05
HDS Technical Manual – Sample 2	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor	25	-.28
HDS Technical Manual – Sample 3	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor	77	-.31
HDS Technical Manual – Sample 4	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor	103	.07
HDS Technical Manual – Sample 5	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor	73	.09
HDS Technical Manual – Sample 6	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor	103	.001
HDS Technical Manual – Sample 7	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor	14	-.47
HDS Technical Manual – Sample 8	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor; Peer; Subordinate; Self	36	.11
HDS Technical Manual – Sample 9	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor; Peer; Subordinate; Self	810	.06

Appendix A (continued)

Study	Type of Leadership	Type of Publication	Sample	Narcissism Measure	Source of Leadership Report	<i>N</i>	<i>r</i> <sup>a</sup>
HDS Technical Manual – Sample 10	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor; Peer; Subordinate; Self	171	.07
HDS Technical Manual – Sample 11	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor; Peer; Subordinate; Self	25	.00
HDS Technical Manual – Sample 12	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor; Peer; Subordinate; Self	51	-.04
HDS Technical Manual – Sample 13	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor; Peer; Subordinate; Self	22	.01
HDS Technical Manual – Sample 14	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Supervisor; Peer; Subordinate; Self	210	.05
HDS Technical Manual – Sample 15	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Self	141	.16
HDS Technical Manual – Sample 16	Leadership Effectiveness	Technical Manual	Employees	HDS Bold	Self	38	.19
HDS Technical Manual – Sample 17	Leadership Emergence	Technical Manual	Employees	HDS Bold	Supervisor	23	-.30
HDS Technical Manual – Sample 18	Leadership Emergence	Technical Manual	Employees	HDS Bold	Supervisor	120	-.05
Hendin (2001)	Leadership Emergence	Dissertation	Students	NPI	Students; LGD	113	.25
Huang, Harms, & Luthans (2012)	Leadership Effectiveness	Unpublished Data	Employees	NPI	Supervisor	103	-.04
Judge, LePine & Rich (2006) – Study 1	Leadership Effectiveness	Journal Article	Employees	NPI	Mix	134	.20
Judge, LePine & Rich (2006) – Study 2	Leadership Effectiveness	Journal Article	Employees	NPI	Supervisor	131	-.08
Khoo & Burch (2006)	Leadership Effectiveness (Self-Report Only)	Journal Article	Employees	HDS Bold	Self	80	-.12
Lindberg (2006)	Leadership Effectiveness	Master's Thesis	Employees	HDS Bold	Subordiante	134	.15
Nevicka, et al., (2011a)	Leadership Emergence	Journal Article	Students	NPI	Student Ratings; LGD	221	.16
Oshio & Harms (2005)	Leadership Emergence	Unpublished Data	Students	NPI	Student Ratings; LGD	96	.05

Appendix A (continued)

Study	Type of Leadership	Type of Publication	Sample	Narcissism Measure	Source of Leadership Report	<i>N</i>	<i>r<sup>a</sup></i>
Peterson Galvin & Lange (2012)	Leader Effectiveness	Journal Article	Employees	NPI	CFO (Peer Ratings)	126	-.27 <sup>f</sup>
Resick, Whitman, Weingarden, & Hiller (2009)	Leadership Effectiveness	Journal Article	Employees	Historiometric	Student Ratings of Leader Profiles	75	-.33 <sup>e</sup>
Schnure (2010)	Leadership Emergence	Conference Paper	Employees	HDS Bold	Assessment Center	431	.14
Watts, Smith, & Lilienfeld (2013)	Leadership Effectiveness	Conference Paper	Employees	NPI	Self	312	.292
Yocum (2006)	Leadership Effectiveness	Dissertation	Employees	NPI	Subordinate	53	-.25

*Notes.* *N* = total sample size in the meta-analysis; *r<sup>a</sup>* = validity coefficient used in the overall leadership emergence/leadership effectiveness analyses – may be the result of averaging or compositing individual effect sizes – self reports were not used in these overall analyses; NPI = Narcissistic Personality Inventory; HDS Bold = Hogan Developmental Survey – Bold; CPI = California Personality Inventory; Mix = effect size is a mix of different types of observer report; LGD = Leaderless Group Discussion; <sup>b</sup> = composite of strategic dynamism, # of acquisitions, and size of acquisitions; <sup>c</sup> = composite of leader's adaptability, average stock return, risk adjusted avg. stock return, and return on equity; <sup>d</sup> = average of charismatic leadership and mean greatness; <sup>e</sup> = composite of transformational, contingent reward, manager turnover, team winning, and attendance; <sup>f</sup> = composite of firm performance, servant, and transformational leadership.

## APPENDIX B

### Main Codes and Input Values for Extraversion/Narcissism Studies in the Meta-Analysis

Study	Type of Publication	Sample	Narcissism Measure	Extraversion Measure	<i>N</i>	<i>R</i>
Ames, Rose, & Anderson (2006) Study 1	Journal Article	Students	NPI	NEO FFI	766	.26
Ames, Rose, & Anderson (2006) Study 2	Journal Article	Students	NPI	BFI	167	.41
Barelds & Dijkstra (2010)	Journal Article	Students	NPI	NEO FFI	136	.44
Bradlee & Emmons (1992) Study 2	Journal Article	Students	NPI	NEO PI	175	.43
Brown, Budzek, & Tamborski (2009) Study 1	Journal Article	Students	NPI	BFI	740	.44
Brunell, Gentry, & Campbell (2008) Study 1	Journal Article	Students	NPI	BFI	432	.42
Brunell, Gentry, & Campbell (2008) Study 1	Journal Article	Students	NPI	BFI	408	.57
Buss & Chiodo (1991)	Journal Article	Newlywed Couples	NPI	EPQ	214	.38
Clark, Lelchook, & Taylor (2010)	Journal Article	Working Students	NPI	BFI	322	.47
Corry, Merrit, Mrug, & Pamp (2008)	Journal Article	Students	NPI	NEO FFI	238	.29
CPI Manual Appendix C	Technical Manual		CPI	EPI	89	.32
CPI Manual Appendix C	Technical Manual		CPI	EPI	86	.28
CPI Manual Appendix C	Technical Manual		CPI	Goldberg's Adjectival Big Five Markers	289	.36
CPI Manual Appendix C	Technical Manual		CPI	Goldberg's Adjectival Big Five Markers	411	.39
Egan & McCorkindale (2007)	Journal Article	Community Sample	NPI	NEO FFI-R	103	.38
Emmons (1984) Study 2	Journal Article	Students	NPI	16PF	65	.53
Hendin & Cheek (1992)	Journal Article	Students	NPI	BFI	151	.33
Hill & Roberts (2011)	Journal Article	Students	NPI	BFI	144	.33
Hogan Technical Manual (p. 37)	Technical Manual	Employees	HDS	HPI	754	.32
Hogan Technical Manual (p. 37)	Technical Manual	Community Sample	HDS	NEO-PI-R	146	.30
Jakobwitz & Egan (2006)	Journal Article	Employees	NPI	NEO FFI	82	.10
Appendix B (continued)						
Study	Type of Publication	Sample	Narcissism Measure	Extraversion Measure	<i>N</i>	<i>r</i>

Jonason, Li, & Teichner (2010)	Journal Article	Students	NPI	BFI	216	.37
Jarvis (2010)	Master's Thesis	Students	NPI	BFI	122	.34
Judge, LePine, & Rich (2006) Study 1	Journal Article	Employees	NPI	NEO FFI	134	.36
Judge, LePine, & Rich (2006) Study 2	Journal Article	Employees	NPI	BFI	131	.31
Kovacs (2008)	Dissertation	Employees	NPI	BFI	64	.56
Kubarych, Deary, & Austin (2004)	Journal Article	Students	NPI	NEO FFI	338	.36
Lee & Ashton (2005)	Journal Article	Students	NPI	BFI	164	.46
Marcus, Machilek, & Schutz (2006)	Journal Article	Web Site Owners	NPI	BFI	898	.45
Miller & Campbell (2008) Study 1	Journal Article	Students	NPI	NEO PI-R	271	.39
Miller & Campbell (2008) Study 2	Journal Article	Parents of Undergrads	NPI	NEO PI-R (short form)	211	.39
Miller, Gaughan, Pryor, Karmen, & Campbell (2009) Sample 2	Journal Article	Students	NPI	NEO PI-R	49	.50
Miller, Price, & Campbell (2012)	Journal Article	Students	NPI	NEO PI-R	148	.24
Nathanson, Paulhus, & Williams (2006) Study 1	Journal Article	Students	NPI	BFI	291	.37
Paulhus (1998) Study 1	Journal Article	Students	NPI	15 items (McCrae & Costa, 1987)	124	.35
Paulhus (1998) Study 2	Journal Article	Students	NPI	NEO FFI	89	.25
Paulhus & Williams (2002)	Journal Article	Students	NPI	BFI	245	.42
Samuel & Widiger (2008)	Journal Article	Students	NPI	NEO PI-R	150	.28
Trzesniewski, Donnellan, & Robbins (2008)	Journal Article	Students	NPI	BFI	18,274	.49
Williams, Nathanson, & Paulhus (2010) Study 1	Journal Article	Students	NPI	BFI	228	.48
Williams, Nathanson, & Paulhus (2010) Study 2	Journal Article	Students	NPI	BFI	107	.36
Wonneberg (2007)	Dissertation	Employees	NPI	Big Five Mini Markers	212	.26

*Notes.* *N* = total sample size in the meta-analysis; *r*= observed validity coefficient; 16PF = Sixteen Personality Factor Questionnaire; BFI = Big Five Inventory, NEO-FFI = NEO Five Factor Inventory; NEO-PI-R = NEO Personality Inventory Revised; EPQ = Eysenck Personality Questionnaire; EPI = Eysenck-Maudsley Personality Inventory; HPI = Hogan Personality Inventory.

y.