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## **Narcissistic CEOs and Executive Compensation**

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### **Abstract**

Narcissism is characterized by traits such as dominance, self-confidence, a sense of entitlement, grandiosity, and low empathy. There is growing evidence that individuals with these characteristics often emerge as leaders, and that narcissistic CEOs may make more impulsive and risky decisions. We suggest that these tendencies may also affect how compensation is allocated among top management teams. Using employee ratings of personality for the CEOs of 32 prominent high-technology firms, we investigate whether more narcissistic CEO's have compensation packages that are systematically different from their less narcissistic peers and specifically whether these differences increase the longer the CEO stays with the firm. As predicted, we find that more narcissistic CEOs who have been with their firm longer receive more total direct compensation (salary, bonus, stock options), have more money in their total shareholdings, and have larger discrepancies between their own (higher) compensation and the other members of their team.

Keywords: Narcissism, leadership, executive compensation, CEO

*The difference between God and Larry Ellison: God doesn't think he's Larry Ellison.* ~ M. Wilson

In the past several years, there has been a growing interest in how narcissistic leaders affect the organizations that they lead (e.g., Maccoby, 2007; Padilla, Hogan, & Kaiser, 2007; Rosenthal & Pittinsky, 2006). Research has suggested that narcissistic leaders—typically characterized by dominance, self-confidence, a sense of entitlement, grandiosity, and low empathy—can both positively and negatively influence organizations. On the positive side, narcissists are more likely to be seen as inspirational, succeed in situations that call for change, and be a force for creativity (Deluga, 1997; Gupta & Spangler, 2011; Maccoby, 2007). On the negative side, narcissistic leaders have been shown to be more likely to violate integrity standards (e.g., Blickle, Schlegel, Fassbender, & Klein, 2006; O'Connor, Mumford, Clifton, Gessner, & Connelly, 1995), have unhappy employees and create destructive workplaces (Blair, Hoffman, & Helland, 2008), and inhibit the exchange of information within organizations (Neivicka, De Hoogh, Van Vianen, Beersma, & McIlwain, 2011).

While provocative, most of the empirical research on narcissism has been conducted using student samples. There is, however, some interesting theorizing about how narcissism among senior managers might affect organizations (e.g., Campbell, Hoffman, Campbell, & Marchisio, 2011; Padilla, et al., 2007). Rosenthal and Pittinsky (2006: 617), for example, note that “narcissists have the charisma and vision that are vital to effective leadership,” but that these leaders are also prone to bullying subordinates, violating ethical standards, and making risky decisions. Campbell and colleagues (Campbell, et al., 2011) hypothesize that narcissistic leaders may succeed in the short term, but over time, they “destroy the systems that they and others depend on to survive and thrive” (p. 280). Despite these mixed findings, there is strong evidence that people who are more narcissistic are more likely to emerge as leaders precisely because of

their dominance and grandiosity (Brunell, Gentry, Campbell, Hoffman, Kuhnert, & DeMarree, 2008).

CEOs of organizations are particularly relevant subjects for deepening our understanding of narcissism in organizational settings. The difference between having healthy levels of self-confidence and self-esteem, which are appealing and useful qualities for leaders, and being narcissistic is that narcissists have an elevated sense of self-worth such that they value themselves as inherently better than others. That said, the difference between those who are self-confident and those who are narcissistic is often difficult to detect. Thus, it is likely that both highly self-confident and narcissistic people are disproportionately selected into CEO jobs.

Further, the characteristics of narcissistic CEO's can affect both an organization's strategies and operations in important ways. For instance, Chatterjee and Hambrick (2007, 2011) have shown that CEOs' narcissism was positively related to their firms' strategic dynamism (the degree to which an organization's strategy adapts to changing environments), as well as to the number and size of acquisitions that the firm made. Narcissistic CEOs were also less sensitive to objective indicators of their performance, however, and tended to overpay for acquisitions. Resick and colleagues (Resick, Whitman, Weingarden, & Hiller, 2009) studied the CEOs of major league baseball organizations over a 100-year period and found that more narcissistic CEOs were less concerned with equitable rewards, but the researchers concluded that some of the CEOs' arrogance and grandiosity could actually improve firm performance.

One area that has not been well explored is the extent to which the CEO's narcissism may affect patterns of executive compensation. Most of the research on CEO compensation has assumed an agency theory model (e.g., O'Reilly & Main, 2010) and explored mechanisms through which compensation systems can be designed by owners, represented by boards of

directors, to ensure that the interests of the executive are aligned with those of the owners. Although there is general support for many of the predictions derived from agency theory, a substantial amount of research has demonstrated that CEOs also can influence the board to develop policies that advantage the CEO (c.f., O'Reilly & Main, 2010; Wade, O'Reilly, & Chandratat, 1990; van Essen, Otten & Carberry, 2012; Westphal & Zajac, 1995). There are a number of mechanisms through which this could take place; however little has been done to identify whether the personality of the CEO is a factor in influencing how compensation decisions are made. Our goal in this paper is to investigate the relationship between the CEO's narcissism and his or her compensation. We first review the general research on narcissism and then describe how narcissism is related to leadership. We then focus on how the characteristics of the narcissistic might provide the opportunity and motivation to influence compensation decisions over time. Given narcissists' tendency to be self-serving, exploit others, and have low empathy, we propose that over time CEOs who are more narcissistic will be more likely to extract higher levels of compensation than will those who are less narcissistic. Further, we predict that, because of their inflated sense of self-worth, CEO's who are more narcissistic will have larger spreads in compensation between their own compensation and compensation among other members of their top management team. We test this in a set of 32 high-technology firms.

### **Narcissism Qualities and Dimensions**

The term *narcissism* comes from the Greek myth of Narcissus, the story of a young man who fell in love with his own image. Building on Freud's (1914) original conception, psychologists have generally thought of narcissism as a relatively stable personality trait (Campbell, Bush, Brunnell, & Shelton, 2005) characterized by a sense of personal superiority (Campbell, Goodie, & Foster, 2004; John & Robins, 1994), grandiosity (Morf & Rhodewalt,

2004), dominance and a desire for power (Emmons, 1987), and a desire for attention and confirmation of their superiority (Bogart, Benotsch, & Pavolic, 2004). Narcissists lack true empathy and therefore can be exploitative, taking credit for others' accomplishments and shifting blame to others (Brunell, et al., 2008; Lubit, 2002; Rauthmann, 2012). They can be aggressive and hostile when confronted with criticism or negative feedback (Exline, Baumeister, Bushman, Campbell, & Finkel, 2004; Vazire & Funder, 2006).

At the same time, narcissistic individuals are often seen as appealing and interpersonally skilled (Chatterjee & Hambrick, 2007; Deluga, 1997). Their sense of self-confidence often leads others to follow them, while their own sense of self-importance leads them to self-promote and seek out situations in which they can dominate (Hogan, Raskin, & Fazzini, 1990). Since they convey an image of a prototypically effective leader, with a strong sense of self-efficacy and capability, they frequently emerge as leaders (Judge, LePine, & Rich, 2006). Upon first impression, narcissists are often seen as charismatic and charming. Young and Pinsky (2006), for instance, showed that celebrities were more narcissistic than the general population, and that reality television personalities were the most narcissistic. Back, Schmulke, and Egloff (2010) examined why people are commonly attracted to narcissists. Across three studies, they found that when first meeting, people who are more narcissistic made a more positive impression and were more popular than were those who were less narcissistic. Their self-confidence and assured body movements made a positive impression on those whom they were meeting for the first time. Surprisingly, it was also the narcissists' sense of entitlement and a tendency to manipulate others that others found attractive.

Although there is general agreement about its overall nature, there is some controversy about how narcissism is most accurately assessed and whether it is a single dimension or

characterized by multiple dimensions. Clinical evaluations of narcissism indicate that it can take at least two broad forms: *grandiose* narcissism reflects traits related to grandiosity and dominance where *vulnerable* narcissism is defined more by defensive responses that obscure feelings of inadequacy and negative affect (Dickinson & Pincus, 2003). Although these two forms of narcissism may be conflated in some overall measures of trait narcissism, they do reflect distinct nomological networks. In terms of the Big 5 personality dimensions, grandiose narcissism is associated with higher extraversion and lower agreeableness while vulnerable narcissism is related to various facets of neuroticism including anxiety, self-consciousness, and depression as well as relatively low levels of self esteem (Miller, Hoffman, Gaughan, Gentile, Maples, & Campbell, 2011; Brown, Budzek, & Tamborski, 2010; Holtzman, Vazire, & Mehl, 2010; Paulhus & Williams, 2002). Interestingly, so-called “thin slice” measures, in which there is a very brief observation of a person, show that individuals who are high on measures of grandiose narcissism are perceived by others as narcissistic while those who are high on vulnerable narcissism are not (Miller, et al., 2011).

Despite the multi-dimensional nature of narcissism, most conceptualizations of trait narcissism in organizational settings use measures that assess some variation of grandiosity rather than vulnerability or use overall measures that place a heavy weighting on grandiosity (c.f., Galvin, Waldman, & Balthazard, 2010; Judge, LePine, & Rich, 2006; Resick, Whitman, Weingarden, & Hiller, 2009). For leaders, this dimension of narcissism seems particularly relevant.

### **The Narcissistic Leader**

In their review of narcissistic leadership, Rosenthal and Pittinsky (2006: 617) note that, “It is clear that a significant number of world leaders have grandiose belief systems and



leadership styles...whose aspirations, judgments, and decisions both good and bad, are driven by unyielding arrogance and self-absorption.” In his book *Narcissistic Leaders*, Maccoby (2007: xiv) characterizes Steve Jobs as a “prototypical productive narcissist” who was also described in a 2006 *Fortune Magazine* article as “the model CEO for the twenty-first century” (Vogelstein, 2006). In Maccoby’s (2007: xix) view, narcissistic leaders want to “change the world to fit their view of how things should be, and they have little or no sense of guilt to constrain them from radical, risky ventures that can be creative or destructive at either a high or low level of moral reasoning.” This evidence, that narcissists are no more competent and, over the long term, are less likable than non-narcissists, raises the paradoxical question, why do they so often emerge as leaders (Brunell, Gentry, Campbell, Hoffman, Kuhnert, & DeMarree, 2008)?

In answering this question, three explanations may be particularly relevant. First, narcissists embody many of the traits associated with a prototypical leader. Studies have shown that individuals hold implicit theories about the attributes of an effective leader (e.g., Epitropaki & Martin, 2004; Offermann, Kennedy, & Wirtz, 1994). These assumptions are used to evaluate whether a person fits the prototype of a leader, including dimensions such as strength, masculinity, charisma, and attractiveness. Narcissists, especially on first impression, embody many of these attributes and are therefore characterized by others (including interviewers, business journalists, and other leaders) as having the requisite characteristics to be an effective leader. In a meta-analysis of 187 studies of individual differences proposed to be relevant to effective leadership, Hoffman and colleagues (Hoffman, Woehr, Magdalen-Youngjohn, & Lyons, 2011) found that seven traits were reliably and significantly associated with leader effectiveness. These included energy, dominance, self-confidence and charisma, all of which are characteristics associated with narcissism.

Second, and partly as a reflection of this, studies of leader emergence (as opposed to leader effectiveness) have shown that narcissists are more likely to be chosen as leaders than are non-narcissists (Paunonen, Lonqvist, Verkasalo, Leikas, & Nissinen, 2006). For instance, in a laboratory study using 56 teams, Nevicka and colleagues (Nevicka, Ten Velden, De Hoogh, & Van Vianen, 2011) found that narcissists were more apt to be chosen as leaders than were non-narcissists regardless of the type of task being performed. In a similar study of leader emergence using leaderless group discussions, Brunell and colleagues (Brunell, et al., 2008) also showed that narcissists were more likely to emerge as leaders than were non-narcissists. Interestingly, this pattern of findings was consistent both for student samples as well as samples of working executives. In explaining their findings, Brunell and colleagues (2008) suggested that narcissists' desire to assume a leadership role along with their extraverted personality accounted for their emergent leadership. Narcissists were more likely to speak up and to express their opinions forcefully and with confidence. Interestingly, narcissism was unrelated to performance in any of the studies, a consistent pattern across many other studies (Blair, et al., 2008; Campbell, et al., 2004).

A third explanation for why narcissists are apt to become leaders is predicated on the context in which leadership is most needed. As Rosenthal and Pittinsky (2006) note, there are situations in which the characteristics of the narcissist (e.g., charisma, grandiosity, lack of empathy) may outweigh the disadvantages. During periods of chaos and crisis, leaders who have the confidence and will to assert a point of view may succeed where those who are more timid, wavering, and self-reflective may fail. Maccoby (2007) makes the point that many successful narcissists thrive under these conditions, whether in wartime (e.g., Churchill, MacArthur, Napoleon) or times of great technological change (e.g., Jobs, Ellison, McCaw). Under these

conditions, it may be that the vision and grandiosity of the narcissistic leader is attractive to their followers who are looking for new ideas or a solution for a recurring problem (Padilla, Hogan, & Kaiser, 2007; Post, 1986). When these conditions occur, it may be, as Campbell and colleagues (2011: 275) note that “There are natural links between narcissism and leadership, and evidence strongly points to the propensity for narcissists to emerge as leaders.”

### **The “Bright Side” and the “Dark Side” of Narcissistic Leaders**

To reconcile the positive and negative aspects of narcissistic leadership, researchers have distinguished what is referred to as the “bright side” and “dark side” of personality (e.g., Campbell, et al., 2011; Hogan & Kaiser, 2005). In focusing on the positive attributes, researchers have noted that many successful leaders can be characterized by high self-esteem, internal locus of control, self-efficacy, and having control over one’s emotions. This construct, labeled Core Self-Evaluation, has been shown to be associated with transformational leadership, job performance, and satisfaction (e.g., Judge & Bono, 2001; Khoo & Burch, 2008; Resick, Whitman, Weingarden, & Hiller, 2009). A number of attributes associated with core self-evaluation are also associated with narcissism. For example, in a study of the effectiveness of U.S. presidents, Deluga (1997) reported that narcissism was associated with perceived charisma and rated effectiveness. Goncalo, Flynn, and Kim (2010) showed that narcissists enhanced creativity in groups. Gupta and Spangler (2011) argued that the dominance and extraversion components of narcissism have positive effects on firm performance in turbulent environments. Other studies found that components of narcissism such as dominance and vision have positive effects under certain conditions (Campbell & Campbell, 2009; Chatterjee & Hambrick, 2007; Harrison & Clough, 2006).

Arrayed against the potentially positive effects of narcissism is a wealth of evidence documenting its negative impact (Lubit, 2002). Studies have shown, for example, that narcissistic leaders are less likely to engage in pro-social organizational behavior and more likely to cheat and violate integrity standards (e.g., Blickle, Schlegel, Fassbender, & Klein, 2006; Chen, 2010; Judge, et al., 2006). Narcissistic leaders are more likely to have unhappy employees and create destructive workplaces (Blair, et al., 2008; Maccoby, 2007; Padilla, et al. 2007; Thompson, 2011). Narcissists have also been shown to inhibit the exchange of information within organizations (Nevicka, et al., 2011) and to reject negative feedback (Kernis & Sun, 1994).

An example of the mixed effects of a narcissistic leader can be seen in the relationship between narcissism and the attribution of charisma. In a recent study, Galvin and his colleagues (Galvin, Waldman, & Balthazard, 2010) found no direct relationship between a leader's narcissism and the extent to which he or she was perceived as charismatic, but that the relationship was mediated by the nature of the vision leaders conveyed to outsiders. Leaders who were seen as charismatic provided both bold and socialized (as opposed to personalized) visions for their organizations. However, narcissistic leaders tended to present a bold but also very personalized, "I-centered" vision for the future. The overall result of this is that the mediating effects of the two characteristics of the vision canceled out any direct relationship between narcissism and charisma. Thus, some behaviors of narcissistic leaders appear to enhance observers' perceptions of the leader's charisma while other behaviors reduced such perceptions.

### **Narcissism and Executive Compensation**

Executive compensation may be a useful lens through which to understand the dynamics of narcissism, and specifically to track how narcissistic leaders' actual capabilities are revealed over time. Research on executive compensation has demonstrated that the CEO often has a significant ability to influence how his or her compensation is set (Bebchuk & Fried, 2004). For example, several studies have shown that both social influence and reciprocity can affect CEOs' compensation beyond what is justified by economic considerations (e.g., Main, O'Reilly, & Wade, 1995; Westphal & Zajac, 1995). Main and O'Reilly (2010) showed that CEOs who had more opportunities to influence the board received higher compensation. Conyon, Peck, and Sadler (2009) noted that the CEO often has a hand in hiring the compensation consultant charged with establishing the CEO's pay, and that it is in the interest of the consultant to ensure that the CEO is well paid. The evidence is that CEOs use their positional power with their boards to garner more favorable pay contracts (Wade, Porac, & Pollock, 1997).

Over time, narcissistic CEOs are likely to be both motivated and have the ability to influence their own compensation. Initially, narcissists fit the prototypical stereotype of a leader—visionary, self-confident, dynamic—and are likely to be evaluated positively. Research suggests that this initial short-term reinforcement of the narcissist's superiority may amplify their tendencies. Once in a position of power, the narcissist's low empathy, willingness to exploit others, and sense of superiority may be sufficient to maintain and leverage that position, especially if they are able to charm those higher in the hierarchy. Wallace and Baumeister (2002) have shown that in situations in which the opportunity for self-enhancement is high, narcissists may perform better. Thus, the initial positive impression made by narcissists may result in their being selected as leaders, and their confidence and manipulateness may help them advance their own interests.

In addition, narcissists have a strong sense of entitlement and a willingness to be aggressive in pursuing what they think is owed them (Bogart, et al., 2004; Exline, et al., 2004; Twenge & Campbell, 2003). Coupled with the narcissist's ability to sell their ideas to others (Goncalo, et al., 2010), this creates both the opportunity and motivation for the narcissist to attempt to influence the board's compensation decisions. Over time, their overconfidence in assessing and portraying their own abilities, willingness to ignore objective feedback to the contrary, persistence, and willingness to manipulate others (Chatterjee & Hambrick, 2011; Higgs, 2009; Kernis & Sun, 1994) allows the narcissist to shape the perceptions of others and ultimately influence compensation systems. More formally, we hypothesize that:

H1: There will be an interaction between CEO narcissism and tenure such that CEOs who are more narcissistic and have longer tenure will receive larger compensation packages (salary, bonus, and stock options) than those who are less narcissistic or lower in tenure or both

H2: There will be an interaction between CEO narcissism and tenure such that the value of all shares of focal-company stock owned by more narcissistic CEOs who have been in the job longer will be greater than that owned by less narcissistic CEOs, those who have shorter tenure, or both.

In addition to their own sense of superiority, narcissists are likely to devalue the contributions of others and overvalue their own contributions (Campbell, Hoffman, Campbell, & Marchisio, 2011). Since they are also low on empathy, narcissistic CEOs likely to be less concerned with maintaining equity and fair systems within their organizations than less narcissistic individuals (Resick, et al., 2009). Consistent with this notion is research using common dilemma games that pit short term interests of the self against overall interests of a collective. In one study, individuals were placed in the role of owners of timber companies that were competing with other companies to harvest trees in the same national forests. The dilemma in the situation is that if companies put their own short term first and claim too many resources,

the forest will be depleted. Narcissists claimed more of the resources for themselves at a long-term cost to others and to the commons than did other individuals (Campbell, et al., 2005). This willingness to take advantage of the commons is directly associated with grandiose aspects of narcissism (Miller, et al., 2011).

This tendency may be exacerbated by the nature of management compensation systems. The high visibility of compensation levels of the top officers of publically traded firms, including the CEO, makes the “worth” of the CEO relative to other executives in his or her firm explicit and also allows for an easy comparison with other CEOs. If a CEO has a grandiose sense of his or her own contributions and little concern about fairness and equity one would expect that the CEO would attempt to influence internal pay systems to both reinforce and make visible the importance of the CEO’s contributions relative to others. Therefore, we predict that:

H3: There will be interaction between CEO narcissism and tenure such that the gap between CEO total compensation and the average total compensation for the five highest-paid executives (named executive officers) will be larger for CEOs who are more narcissistic and have been in the CEO job longer than for those who are less narcissistic, lower in tenure, or both.

## **METHOD**

### **Research Design and Sample**

We used a combination of internal informants (current employees) and secondary data (publicly reported data) to test our hypotheses. As part of a broader data-collection effort in 2009 involving a set of large publicly traded high-technology firms headquartered in the U.S. (n=54 firms with 835 respondents), we collected data on CEO personality as rated by company employees and executive compensation for 2009 from a subset of these firms that met our sampling criteria (described below).

We identified 32 firms to participate in this study using the following criteria: The firms were publicly traded, U.S.-headquartered, had their primary operations in the high-technology sector (hardware, software, internet services - SIC 35xx, 36xx, 38xx, 73xx; GIC Sector 45; S&P Economic Sector 940), and concurrently employed a minimum of 20 alumni from three focal West Coast business schools.

In Spring 2010, we sent prospective informants (alumni of these business schools who were currently working at the focal firms) an email inviting them to participate in an online survey assessing their current CEO's attributes. We specified that informants' responses were confidential and would not be identified to their employers, and that the study results would not identify their organizations by name.

Of the 648 individuals invited to participate, 250 current employees representing 32 firms completed a follow-up survey asking them to assess their CEO's personality. Thus, an average of 7.81 informants (s.d. = 4.97) per firm provided an assessment of their CEO's personality (range: 5-25). Informants' average tenure with the focal firm was 7.22 years and 34 percent were female. Twenty six percent had worked at their focal firm for more than 12 years. All had earned a Bachelor's degree or higher and sixty-eight percent of informants had earned an MBA. Ninety-seven percent of the 32 firms were included in the list of the *Fortune 1000*, representing the largest American firms, and collectively they generated 67% of the total revenue from high-technology *Fortune 1000* firms in 2009. The average age of the CEOs was 51.7 years (s.d.=6.67) and 31 of the 32 CEOs were male.

### **Independent Variables**

**CEO Narcissism.** The email invitation sent to informants included a link to an online personality assessment that prompted them to rate their CEO's characteristics: "Below are a



number of words that describe common human traits. Read each item and indicate how accurately (how well) you think it describes [name of CEO]. This should reflect how [s]he generally or typically behaves or appears.” The adjectives used for the rating were derived from the narcissism personality inventory developed and validated by Resick, et al. (2009)<sup>1</sup>.

Respondents were asked to rate how accurately each of the eight adjectives described their 2009 CEO on a scale of 1-7 (1 = “very inaccurate”, 7 = “very accurate”). Previous research has suggested that the accuracy of observers’ ratings of personality is higher than self-assessments (Funder, 2012; Mount, Barrick, & Strauss, 1994) and that observers are able to make these assessments easily (Lievens, DeFruyt, & Van Dam, 2001). We averaged the eight items to form an overall scale ( $\alpha = .92$ ).

To determine the appropriateness of aggregating narcissism ratings at the firm level, we computed several metrics of inter-rater reliability and agreement. First, we calculated an  $r_{wg(j)}$  value for the ratings of each CEO. The  $r_{wg(j)}$  indicates how highly respondents within the firm agree on their perceptions of the CEO. We obtained values for all firms ( $\bar{x}=0.78$ ,  $s.d.=.11$ ) that exceeded the recommended minimum value of 0.70 (Klein, et al., 2000), indicating high within-firm agreement. Second, we calculated two intra-class correlation (ICC) metrics: ICC(1), which indicates how much variance in ratings of each of the culture factors is explained by firm membership, and ICC(2), which informs us how reliable the firm-level culture factor scores are (Bliese, 2000). The ICC(1) value (0.67) exceeded the recommended minimum value of 0.06. Likewise, the ICC(2) value (0.92) exceeded the recommended minimum value of 0.70. Together,

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<sup>1</sup> The eight Narcissism items included: Arrogant, Assertive, Boastful, Conceited, Egotistical, Self-centered, Show-off, Temperamental. All items were presented in random order.

these measures provide justification for aggregating each of the narcissism ratings at the firm (CEO) level.

Supplemental analysis of the CEOs' word usage provides convergent validity for the narcissism ratings collected from firm employees. Prior research has demonstrated that narcissistic individuals tend to use personal pronouns and first-person singular pronouns more frequently than their non-narcissistic counterparts (DeWall, Buffardi, Bonser, & Campbell, 2011; Raskin & Shaw, 1988). We examined the CEO's letter to shareholders for the fiscal year 2009 (number of CEO letters = 25) and transcripts for fiscal year 2009 quarterly earnings calls in which the CEO participated (number of CEOs who participated in 1 or more calls = 27; average number of earnings call transcripts per CEO = 2.38) to look for word-use patterns. We processed these texts using the Linguistic Inquiry and Word Count (LIWC) text analysis program (Pennebaker, Francis, & Booth, 2001). LIWC calculates the percentage of words within a given text that fall within predefined, standardized content categories (e.g., personal pronouns, words related to social processes). We found that the ratings of CEO narcissism were significantly correlated with the CEO's use of first-person singular pronouns ("I") in fiscal year 2009 letters to shareholders ( $r=0.27$ ,  $p<0.10$ ), as well as with use of personal pronouns ( $r=0.24$ ,  $p<0.10$ ) in fiscal year 2009 earnings call transcripts.

To provide further evidence of the validity of our narcissism measure we had respondents rate the CEO using the Ten-Item Personality Inventory which contains overall measures of the Big Five personality dimensions (Gosling, Rentfrow, & Swann, 2003). Consistent with much of the prior research on the relations between the Big Five and measures of grandiose narcissism, we found that ratings of CEO narcissism were significantly correlated with ratings of both extraversion ( $r=0.50$ ,  $p<0.01$ ) and agreeableness ( $r= -0.83$ ,  $p<0.001$ ) (Brown, Budzek, &

Tamborski, 2010; Holtzman, Vazire, & Mehl, 2010; Miller, et al., 2011; Paulhus & Williams, 2002).

**CEO Tenure.** To assess tenure, we counted the number of full years that each focal executive had consecutively occupied the CEO position in their firm. We obtained these data from publicly available sources and validated them using the start dates as reported in Compustat's ExecuComp database.

**CEO Narcissism-Tenure Interaction.** To assess the combined effects of narcissism and tenure, we generated a grand mean-centered interaction term for each CEO (cf. Aiken & West, 1991) wherein the CEO's narcissism rating is multiplied by his/her tenure.

### **Dependent Variables**

**Executive Compensation.** To determine compensation and shareholdings for the CEO and other named executive officers (NEOs) for 2009, we used a combination of the Compustat ExecuComp database, firms' proxy statement filings with the SEC (form DEF 14A), and both Yahoo finance and the CRSP database for historical share price data.

**CEO Total Compensation.** Each CEO's total compensation ( $\bar{x}$  = \$10.41 million, s.d. = \$11.47 million) for the 2009 fiscal year (FY2009) was obtained from Compustat's ExecuComp database. Total compensation includes salary, bonus, other annual awards, total value of restricted stock units (RSUs) granted, total value of stock options granted (calculated using the Black-Scholes methodology), long-term incentive payouts, and all other remuneration. This total value is reported in the ExecuComp as item #TDC1.

**CEO-NEO Compensation Gap.** To calculate the gap (difference) between the CEO's total compensation and that of the rest of the top management team ( $\bar{x}$  = \$4.21 million, s.d. = \$9.51 million), comparable total compensation metrics (TDC1) were gathered from ExecuComp for

the five highest-paid NEOs at each firm. Where more than five executives were identified by ExecuComp, we selected the top five executives (in terms of total compensation) only. The “gap” was calculated by subtracting the average TDC1 among these five NEOs from the CEO’s total compensation (CEO TDC1 – Average NEO TDC1).

**CEO Total Shareholding Value.** The value of the CEO’s total shareholdings in the focal firm at the end of fiscal year 2009 ( $\bar{x}$  = \$1831 million, s.d. = \$5420 million) was calculated by multiplying the CEO’s shareholdings times the price per share. The CEO’s shareholdings were recorded from the firm’s SEC proxy statement (form DEF 14A) for fiscal year 2009 (total number of shares held by the CEO as of the “record date” indicated in the filing). Price per share was recorded as the equity’s closing price on the record date. Our sample contained one extreme outlier whose total shareholding value was over 10 standard deviations above the second-highest executive. To prevent this extreme value from distorting the overall regression results, we truncated the value of this individual’s holding to one standard deviation above the second highest value before performing the regression analyses.

### **Control Variables**

We controlled for a set of variables that could affect the size and spread of executive compensation. First, even though the sample firms were already concentrated in the high-technology industry, we further identified each firm’s sector as software, hardware, or a combination. We used SIC codes from Compustat North America to create two dummy variables. Firms with SIC 35xx (Industrial and Commercial Machinery and Computers), 36xx (Electrical and Electronic Equipment Except Computers), or 38xx (Instruments and Related Products) were coded as Hardware (variable “Software” = 0), whereas those with SIC 73xx (Business Services) were coded as Software (variable “Software” = 1). If a company was

involved in a mixture of hardware- and software-oriented production (based on the business segments reported in the 200910-K) it was coded as Mixed (variable “Mixed Products” = 1).

We also controlled for firm size, since executives in larger firms are typically paid more (Baker & Hall, 2004). We used the log of the number of employees in fiscal year 2009, gathered from Compustat North America. We included two indicators of firm age in our initial regression equations: number of years since founding and number of years since going public, gathered from company reports and SEC filings; however, we dropped these indicators because they never changed our results and were highly correlated with firm size.

Finally, since CEOs who founded their firms might have different ownership stakes in their firms than non-founders, we determined whether or not the CEO was the founder of the firm (0=no, 1=yes) from corporate websites and included this variable in the analyses (25 percent are founder-CEOs).

## RESULTS

Means, standard deviations, and correlations among study variables are presented in Table 1. Pairwise correlations show that CEO narcissism is significantly correlated with CEO total compensation, the gap in compensation between the CEO and the senior team, and the total value of the CEO’s share holdings. Narcissism is also positively related to CEO tenure and firm size, and marginally associated with the CEO being the founder.

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Insert Tables 1 and 2 about here  
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We tested the hypotheses using hierarchical linear modeling using in Stata 12 following Mundlak’s (1978) recommendation for pooling as described by Antonakis and his colleagues (Antonakis, Bendahan, Jacquart & Lalive, 2010: 1093). The general model uses maximum

likelihood to estimate outcomes for leader  $j$  rated by follower  $i$ , with cluster mean-centering of the leader's narcissism ratings. This approach helps ensure that our results are not subject to omitted variable bias. The pattern of results for the HLM analyses are generally consistent with those obtained from ordinary least-squares regression using only the CEO mean value.

Table 2 presents the results for these HLM models. In hypothesis 1, we proposed an interaction such that more narcissistic CEOs who also had longer tenure would have higher levels of total compensation (salary, bonus, stock options) than less narcissistic CEOs, CEOs with shorter tenure, or both. As shown in Panel 1, after controlling for size, industry, and founder, Model 2 shows that the main effect of narcissism on total compensation is marginally significant ( $\beta = 4,472$ ,  $p < .10$ ) while that of tenure is not significant ( $\beta = 826$ , n.s.). Model 3 shows a significant interaction term ( $\beta = 535$ ,  $p < 0.01$ ). The graph in Figure 1 illustrates the form of this interaction and indicates that narcissistic CEOs who have longer tenure receive significantly more total compensation than do long-tenured CEOs who are less narcissistic ( $t = 2.16$ ,  $p < .05$ ). Narcissism is not related to compensation for short-tenured CEOs ( $t = -1.47$ , n.s.).

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Insert Figures 1-4 about here  
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In hypothesis 2 we predicted that more narcissistic CEOs with longer tenure would be more likely to accumulate greater total share value than less narcissistic CEOs, shorter tenure CEOs, or both. These results are shown in Panel 2 of Table 2. As shown, the main effect of CEO narcissism on the value of the CEO's total shareholdings is marginally significant ( $\beta = 4$ ,  $p < .10$ ) and that the main effect of CEO tenure on total shareholding value is significant ( $\beta = 314$ ,  $p < .01$ ). However, consistent with hypothesis 3, the effect of tenure is subject to the significant interaction between CEO tenure and narcissism ( $\beta = 136$ ,  $p < .01$ ). The form of this interaction

(Figure 2) shows that high tenured narcissists have significantly higher shareholdings than non-narcissists of equal tenure ( $t=2.70$ ,  $p<.01$ ) but that there is no difference due to narcissism when tenure is low ( $t=1.53$ , n.s.). The magnitude of these effects is large. Narcissistic CEOs who have been in the role for a longer time have significantly more share value than any of the other conditions -- \$512 million more than their less-narcissistic counterparts (high tenure: high versus low narcissism), and \$649 million more than their lower-tenured counterparts (high narcissism: high versus low tenure). Of particular interest is the finding that long-tenured CEOs who are not narcissists have lower shareholder value, suggesting that over time the narcissists' tendency to demand more is successful and results in significantly higher amount of stock being awarded to them.

In hypothesis 3 we proposed that the gap between the CEO's total compensation and the average compensation for the five highest-paid executives would be higher for more narcissistic CEOs who had longer tenure compared to those who were lower on narcissism, shorter on tenure, or both. Panel 3 in Table 2 shows, again, that the main effect of CEO narcissism on the gap between CEO and average TMT total compensation is marginally significant ( $\beta =4,438$ ,  $p<.10$ ). As hypothesized, there is a significant interaction between CEO tenure and narcissism ( $\beta =162$   $p<.05$ ). The plot in Figure 3 shows that when tenure is high, the more narcissistic the CEO, the bigger the gap in pay within the team ( $t=4.51$ ,  $p<.01$ ). The relationship does not hold when tenure is low ( $t=.18$ , n.s.). The magnitude of the difference for high-tenured narcissistic CEOs is \$5.1 million; that is, TMT teams wherein the CEO is one standard deviation above the mean on both narcissism and tenure exhibit a pay gap that is \$5.1 million larger than teams wherein the CEO is one standard deviation below the mean on tenure.

### **Supplemental Analyses**

Although long-tenured CEOs who are more narcissistic receive more total compensation and a greater percentage of total executive compensation than do CEOs in the other three conditions, there may be a variety of factors that contribute to this effect. Two seem particularly likely. First, CEOs who also chair the Board of Directors may command higher compensation than those who do not. Since narcissists may seek that role, it is possible that the effects we observed are in part the result of whether or not the CEO also chairs the Board. Second, it may be possible that narcissists may command a higher salary because they are perceived as creating more value for their firms. To rule out these possible alternative explanations, we re-ran the original regression analyses using OLS, first including whether or not the CEO also chaired the Board of Directors, and second including Tobin's Q—a widely used measure of firm value (Bebchuk, Cremers, & Peyer, 2007; Gompers, Ishii, & Metrick, 2003)—as control variables. Including these variables did not substantively change the pattern of results reported in Table 2.

We also repeated our overall analyses including the Big Five personality assessments of the CEO, as well as the CEO's age and sex, as control variables. Overall, the pattern of results did not change with the addition of these variables and the interaction of narcissism and tenure remained significantly related to the compensation measures.

## **DISCUSSION**

A strong assumption in much theorizing about narcissistic leadership is that the personality of the CEO should affect firm performance (e.g., Padilla, et al., 2007; Rosenthal & Pittinsky, 2006). Unfortunately, collecting cross-firm data on CEO personality has proven to be challenging. Three empirical studies have shown that how narcissistic the CEO is can affect the firm's strategy and performance (e.g., Chatterjee & Hambrick, 2007, 2011; Resick, et al., 2008). The results presented here add to that body of evidence and show, as predicted, that over time,



more narcissistic CEOs claim more compensation and have greater dispersion in pay within the senior management team than do CEOs who are less narcissistic, shorter in tenure, or both.

The effects we observed may have implications for firm's long-term performance. Previous research has shown that pay dispersion can negatively affect groups when the work is interdependent (Bloom, 1999; Shaw, Gupta, & Delery, 2002). Siegel and Hambrick (2005) show explicitly the negative effects of pay dispersion in high-tech firms where interdependence among senior executives is high. Other studies have linked pay dispersion among managers to lower firm performance (Bebchuk, Cremers, & Peyer, 2007) and increased managerial turnover (Messersmith, Guthrie, Ji, & Lee, 2011; Wade, O'Reilly, & Pollock, 2006). Thus, our finding that narcissistic CEOs have greater pay dispersion within their senior teams may have negative consequences for their firms, including higher levels of executive team turnover, lower satisfaction, and even lower firm performance. Further, these effects may become more pronounced over time as the CEO stays longer in the role. The long-term negative effects of narcissistic leaders may in part result from those leaders inability to develop a cohesive team.

Also of interest is our finding that executive compensation appears to reflect not only objective firm performance, positional attributes (founder, chairman), and a CEO's tenure, but is also significantly influenced by the CEO's personality. It is notable that we find these effects not only among a set of individuals who may already highly prone toward being narcissistic (CEOs of large publicly traded firms), but also in relation to other powerful, visible leaders with whom the CEO must frequently interact: other TMT members. Since compensation for senior executives is influenced by peer-firm comparison data, it is also possible that as narcissistic CEOs demand higher compensation, over time the effects of their ever-increasing pay may no

longer be contained to their own firms. Narcissistic CEOs may play a leading role in the executive-compensation upward spiral in a pernicious instance of mimetic isomorphism.

The findings for the joint effects of tenure and CEO personality are similarly revealing. Earlier research has shown that narcissists are seen as less likable over longer periods of time (Colvin, Block, & Funder, 1995; Paulhus, 1998), yet we find that the highest-paid CEOs are those who are highest in narcissism and with the longest tenure. This suggests that while narcissists may be less likable, their sensitivity to criticism and low empathy may help them eliminate those who might challenge them or fail to acknowledge their brilliance. In this sense, narcissists (those who are more extraverted and less agreeable) may be more skilled in navigating organizational politics than those who are more agreeable and higher on empathy. Note, however, that despite their higher compensation, the firms that CEOs higher in narcissism lead do not appear to perform more effectively than do those led by CEOs lower in narcissism, as shown by our supplemental analysis of Tobin's Q. Thus, shareholder value may be sacrificed for the CEOs narcissistic personality.

A second possible explanation for these findings is in the nature of executive compensation systems. Because executive compensation policies are formally a responsibility of the board, long-tenured narcissists may have the ability to shape the board by changing its membership or influencing its operations. Short-tenured CEOs may not be in a position to do these things (Westphal & Zajac, 1995). A third possibility may be related to the industry we studied. Technology-driven companies may face recurring challenges due to new competitors, shifts in customer demands, and changes in technology that are greater than in many other industries. If narcissistic leaders are seen as more effective in times of change, it may be that in industries where the necessity of change is seen as chronic rather than episodic the positive

aspects of narcissism may be viewed as important over the long term. These and perhaps other explanations might drive the effects we observe; however, they all suggest the importance of exploring the ways that the personality of the CEO can influence important aspects of the organization over the long-term.

Finally, an interesting though not hypothesized finding was the positive significant correlation between narcissism and founder status. This result suggests that narcissists are more likely to be founders of surviving firms than are those lower on narcissism. It may be that a narcissist's grandiosity, self-confidence, and persistence is useful in raising capital and overcoming obstacles that would intimidate less narcissistic individuals. Given that we are looking only at firms that have survived over comparatively long periods, it is not necessarily the case that narcissists are more likely to found companies, but rather that they are able to persist longer in making their firms successful.

Like all field research on senior leaders, this study has number of strengths and weaknesses. One strength of this study is the use of direct ratings of CEO personality from insider informants. Previous studies of CEO personality have relied on coding of written accounts, public documents, and biographies (e.g., Peterson, Smith, Matorama & Owens, 2005; Deluga, 1997; Resick, et al., 2008). Direct ratings from observers may allow for a truer assessment of the effects of narcissism in that they represent how the leader is perceived by the people he or she actually leads. A second strength of this study is nature of the sample. We were able to obtain reliable assessments of narcissism of CEOs in a limited, but very important industry segment. The companies in our sample are responsible for approximately two-thirds of the revenue generated by high technology companies in the *Fortune* 1000. These companies, and their leaders, are highly visible and frequently cited as the future of American industry.

However, relying on informants from a single-industry group has limitations. The small number of companies makes it difficult to test complex models and explore the mechanisms through which a leader's personality affects the performance of his or her organization. Along these same lines, these data are cross-sectional which also limits the specific nature of the questions they can address. The fact that we focus on a narrow industry segment where narcissism may be rewarded may mitigate some concerns, but clearly the low power of our analyses is a concern.

Although these results suggest that over the long term narcissistic CEOs are able to extract higher salaries than CEOs who do not display that trait, our data do not allow us to completely rule out alternative explanations for why this happens. We assume that it is the characteristics of the narcissist that allows him or her to influence or manipulate others into providing outsized compensation. Other explanations may be possible, however. For example, could the assumed causal direction be reversed so that when a CEO receives a disproportionately high salary he or she will display more narcissistic behaviors? Although possible, this alternative explanation seems unlikely. There seems to be a consensus, particularly among personality theorists, that narcissism is a stable individual difference that is grounded in basic personality traits (Miller & Campbell, 2010). Further, there is strong behavioral genetic evidence for the heritability of narcissism (Vernon, Villani, Vickers & Harris, 2008). Taken together this suggests that the characteristics of the narcissist are dispositional and not simply a state that will easily change in response to a situation. If so, it is unlikely that increasing what is already a large salary would cause a fundamental shift in the CEO's actions. Our supplemental analysis provides some evidence against this alternative explanation.

A second alternative explanation for our results is that narcissism is correlated with some other characteristic and it is this second characteristic of the CEO that leads to an outsized salary.

One possibility is that narcissism is related to the CEO's charisma and that it is in fact charisma that drives our findings. This alternative would be particularly problematic if charisma was an individual trait rather than attribution made by others. A recent review of charismatic leadership argues that the concept lacks some conceptual clarity and is only infrequently operationalized independent of its effects on others (Van Knippenberg & Sitkin, 2013). This conclusion seems to strengthen the notion that the perception of charisma on the part of observers is a function the leader's presentation of a vision and use of language rather than some enduring trait of the leader (Fanelli, Misangyi, & Tosi, 2009; Galvin, Waldman, & Balthazard, 2010).

### **Conclusion**

Narcissists present a puzzle to students of leadership. Many of the characteristics that make them problematic (e.g., self-confidence, grandiosity, exploitativeness, persistence) can, under the right circumstances, also make them successful. When their grand schemes are proven correct, they are hailed as visionaries, named "the model CEO for the 21<sup>st</sup> century" (Vogelstein, 2006), and featured on the covers of business magazines. When these same characteristics cause them to fail, however, narcissists can destroy entire companies (e.g., Bianco, Symonds, & Byrnes, 2002; McLean & Elkind, 2003). Although the mechanisms for how narcissistic leaders affect performance are not fully understood, this study contributes to our understanding of this paradox by showing how a CEO's narcissistic tendencies are related to an important set of policies that can influence the organization.

## References

- Aiken, Leona S. and West, Stephen G. 1991. *Multiple regression: Testing and interpreting interactions*. Newbury Park: Sage.
- Antonakis, John, Bendahan, Samuel, Jacquart, Philippe and LaLive, Rafael (2010). On making causal claims: A review and recommendations. *Leadership Quarterly*, 21: 1086-1120.
- Back, Mitja D., Schmulke, Stefan C. and Egloff, Boris (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.
- Baker, George P. and Hall, Brian J. 2004. CEO incentives and firm size. *Journal of Labor Economics*, 22: 767-798.
- Bebchuk, Lucian and Fried, Jesse 2004. *Pay without performance: The unfulfilled promise of executive compensation*. Cambridge, MA: Harvard University Press.
- Bebchuk, Lucian, Cremers, Martijn and Peyer, Urs. 2007. Pay distribution in the top executive team. Discussion Paper #574. Harvard Law School.
- Bianco, Anthony, Symonds, William and Byrnes, Nanette *Business Week*, December 23.
- Blair, Carrie A., Hoffman, Brian J. and Helland, Katherine R. 2008. Narcissism in organizations: A multisource appraisal reflects different perspectives. *Human Performance*, 21: 254-276.
- Blickle, Gerhard, Schlegel, Alexander, Fassbender, Pantaleon and Klein, Uwe. 2006. Some personality correlates of business white-collar crime. *Applied Psychology: An International Review*, 55: 220-233.
- Bloom, Matt 1999. The performance effects of pay dispersion on individuals and organizations. *Academy of Management Journal*, 42: 25-40.
- Brunell, Amy B., Gentry, William A., Campbell, W. Keith, Hoffman, Brian J., Kuhnert, Karl W. and DeMarree, Kenneth G. 2008. Leader emergence: The case of the narcissistic leader. *Personality and Social Psychology Bulletin*, 34: 166-1676.
- Campbell, W. Keith and Campbell, Stacy M. 2009. On the self-regulatory dynamics created by the peculiar benefits and costs of narcissism: A contextual reinforcement model and examination of leadership. *Self and Identity*, 8: 214-232.
- Campbell, W. Keith, Bush, Carrie P., Brunell, Amy B. and Shelton, Jeremy 2005. Understanding the social costs of narcissism: The case of the tragedy of the commons. *Personality and Social Psychology Bulletin*, 31: 1358-1368.

- Campbell, W. Keith, Goodie, Adam S. and Foster, Joshua D. 2004. Narcissism, confidence and risk attitude. *Journal of Behavioral Decision Making*, 17: 297-311.
- Campbell, W. Keith, Hoffman, Brian J., Campbell, Stacy M. and Marchisio, Gaia 2011. Narcissism in organizational contexts. *Human Resource Management Review*, 21: 268-284.
- Chatterjee, Arijit and Hambrick, Donald C. 2011. Executive personality, capability cues, and risk taking: How narcissistic CEOs react to their successes and stumbles. *Administrative Science Quarterly*, 56: 202-237.
- Chatterjee, Arijit and Hambrick, Donald 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.
- Chen, Stephen 2010. Bolstering unethical leaders: The role of the media, financial analysts and shareholders. *Journal of Public Affairs*, 10: 200-215.
- Colvin, C. Randall, Block, Jack and Funder, David C. 1995. Overly positive evaluations and personality: Negative implications for mental health. *Journal of Personality and Social Psychology*, 68: 1152-1162.
- Conyon, Martin C., Peck, Simon I. and Sadler, Graham V. 2009. Compensation Consultants and Executive Pay: Evidence from the United States and the United Kingdom." *Academy of Management Perspectives*, 23: 43-55.
- Deluga, Ronald J. 1997. Relationship among American presidential charismatic leadership, narcissism, and rated performance. *Leadership Quarterly*, 8: 49-65.
- DeWall, C. Nathan, Buffardi, Laura E., Bonser, Ian and Campbell, W. Keith 2011. Narcissism and implicit attention seeking: Evidence from linguistic analyses of social networking and online presentation. *Personality and Individual Differences*, 51: 57-62.
- Dickinson, Kelly A. and Pincus, Aaron L. 2003. Interpersonal analysis of grandiose and vulnerable narcissism. *Journal of Personality Disorders*, 17, 188-207.
- Emmons, Robert A. 1987. Narcissism: Theory and measurement. *Journal of Personality and Social Psychology*, 52: 11-17.
- Epitropaki, Olga and Martin, Robin 2004. Implicit leadership theories in applied settings: Factor structure, generalizability and stability over time. *Journal of Applied Psychology*, 89: 293-310.
- Exline, Julie J., Baumeister, Roy F., Bushman, Brad, J., Campbell, W. Keith and Finkel, Eli J. 2004. Too proud to let go: Entitlement as a barrier to forgiveness. *Journal of Personality and Social Psychology*, 87: 894-912.

Fanelli, Angelo, Misangyi, Vilmos F., and Tosi, Henry L. 2009. In charisma we trust: The effects of CEO charismatic visions on securities analysts. *Organization Science*, 20: 1011-1033.

Freud, Sigmund 1914. *On narcissism: An introduction*. London: Hogarth

Funder, David C. 2012. Accurate personality judgment. *Current Directions in Psychological Science*, 21: 177-182.

Galvin, Benjamin M., Waldman, David A., and Balthazard, Pierre 2010. Visionary communication qualities as mediators of the relationship between narcissism and attributions of leader charisma. *Personnel Psychology*, 63: 509-537.

Gerstner, Wolf-Christian, Koenig, Andreas, Enders, Albrecht, Esslinger, Adelheid S. and Fleischhacker, Susanne 2010. Are narcissistic CEOs more effective in overcoming incumbent inertia than non-narcissistic CEOs? Paper presented at the Annual Academy of Management Meetings, Boston.

Gompers, Paul A., Ishii, Joy L., and Metrick, Andrew 2003. Corporate governance and equity prices. *Quarterly Journal of Economics*, 118: 107-155.

Goncalo, Jack A., Flynn, Francis, J. and Kim, Sharon, 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.

Gosling, Samuel D., Rentfrow, Peter J., and Swann, William B., Jr. 2003. A very brief measure of the big five personality domains. *Journal of Research in Personality*, 37, 504-528.

Gupta, Alka and Spangler, William D. 2012. The effect of CEO narcissism on firm performance. Paper presented at the annual meetings of the Academy of Management, Boston, August.

Harrison, J. Kline and Clough, M. William 2006. Characteristics of 'state-of-the-art' leaders: Productive narcissism versus emotional intelligence and Level 5 capabilities. *Social Science Journal*, 43: 287-292.

Higgs, Malcolm 2009. The good, the bad, and the ugly: Leadership and narcissism. *Journal of Change Management*, 9: 165-178.

Hoffman, Brian J., Woehr, David J., Magdalen-Youngjohn, Robyn and Lyons, Brian D. 2011. Great man or great myth? A quantitative review of the relationship of individual differences and leader effectiveness. *Journal of Occupational and Organizational Psychology*, 84: 347-381.

Hogan, Robert and Kaiser, Robert B. 2005. What we know about leadership. *Journal of General Psychology*, 9: 169-180.



Hogan, Robert, Raskin, Robert and Fazzini, D. 1990. The dark side of charisma. In K.E. Clark and M.B. Clark (Eds.), *Measures of leadership*, West Orange, NJ: Leadership Library of America, 343-354.

Holtzman, Nicholas S., Vazire, Simine and Mehl, Matthias R. 2010. Sounds like a narcissist: Behavioral manifestations of narcissism in everyday life. *Journal of Research in Personality*, 44: 478-484.

John, Oliver P. and Robins, Richard 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.

Judge, Timothy A. and Bono, Joyce E. 2001. Relationship of Core Self-Evaluation traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, 86: 80-92.

Judge, Timothy A., LePine, Jeffery A. and Rich, Bruce 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: 763-776.

Kernis, Michael H. and Sun, Chien-Ru 1994. Narcissism and reactions to interpersonal feedback. *Journal of Research in Personality*, 28: 4-13.

Klein, K.J., Bliese, P.D., Kozlowski, S.W.J., Dansereau, F., Gavin, M.B., Griffin, M.A., Hofmann, D.A., James, L.R., Yammarino, F.J., & Bligh, M.C. (2000). Multilevel analytical techniques: Commonalities, differences, and continuing questions. In *Multilevel theory, research, and methods in organizations*, Klein, K.J., and Kozlowski, S.W.J. (Eds.). San Francisco, CA: Jossey-Bass, 512-553.

Khoo, Hwee S. and Burch, Giles S. 2008. The ‘dark side’ of leadership personality and transformational leadership: An exploratory study. *Personality and Individual Differences*, 44: 86-97.

Lievens, Filip, DeFruyt, Filip, and Van Dam, Karen 2001. Assessors’ use of personality traits in descriptions of assessment centre candidates: A five-factor model perspective. *Journal of Occupational and Organizational Psychology*, 74: 623-536.

Lubit, Ray 2002. The long-term organizational impact of destructively narcissistic managers. *Academy of Management Executive*, 16: 127-138.

Maccoby, Michael 2007. *Narcissistic leaders: Who succeeds and who fails*. Boston, MA: Harvard Business School Press.

Main, Brian G., O'Reilly, Charles A. and Wade, James B. 1995. The CEO, the board of directors, and executive compensation: Economic and psychological perspectives. *Industrial and Corporate Change*, 4: 293-332.

McLean, Bethany and Elkind, Peter 2004. *The smartest guys in the room: The amazing rise and scandalous fall of Enron*. New York: Portfolio.

Messersmith, Jake G., Guthrie, James P., Ji, Yong-Yeon and Lee, Jeong-Yeon 2011. Executive turnover: The influence of dispersion and other pay characteristics. *Journal of Applied Psychology*, 96: 457-469.

Miller, Joshua D. and Campbell, W. Keith 2010. The case for using research on trait narcissism as a building block for understanding narcissistic personality disorder. *Personality Disorders: Theory, Research, and Treatment*, 1, 180-191.

Miller, Joshua D., Hoffman, Brian J., Gaughan, Eric T., Gentile, Brittany, Maples, Jessica, and Campbell, W. Keith. 2011. Grandiose and vulnerable narcissism: A nomological network analysis. *Journal of Personality*, 79, 1013-1042.

Morf, Carolyn C. and Rhodewalt, Frederick 2001. Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry*, 12: 177-196.

Mount, Michael K., Barrick, Murray R. and Strauss, J. Perkins 1994. Validity of observer ratings of the Big Five personality dimensions. *Journal of Applied Psychology*, 79: 272-280.

Mundlak, Yair 1978. Pooling of time-series and cross-section data. *Econometrica*, 46: 69-85.

Nevicka, Barbora, De Hoogh, Annelies H., Van Vianen, Annelies, E., Beersma, Bianca and McIlwain, Doris 2011. All I need is a stage to shine: Narcissists' leader emergence and performance. *Leadership Quarterly*, 22: 910-925.

Nevicka, Barbora, Ten Velden, Femke S., De Hoogh, Annelies, H. and Van Vianen, Annelies E. 2011. Reality at odds with perceptions: Narcissistic leaders and group performance. *Psychological Science*, 22: 1259-1264.

O'Connor, Jennifer A., Mumford, Michael D., Clifton, Timothy C., Gessner, Theodore L., and Connelly, Mary S., and 1993. Charismatic leaders and destructiveness: An historiometric study. *Leadership Quarterly*, 6: 529-555.

Offermann, Lynn R., Kennedy, John K. and Wirtz, Philip W. 1994. Implicit leadership theories: Content, structure, and generalizability. *Leadership Quarterly*, 5: 43-58.

O'Reilly, Charles A. and Main, Brian G. 2010. Economic and psychological perspectives on CEO compensation: A review and synthesis. *Industrial and Corporate Change*, 19: 675-712.

Padilla, Art, Hogan, Robert and Kaiser, Robert B. 2007. The toxic triangle: Destructive leaders, susceptible followers, and conducive environments. *Leadership Quarterly*, 18: 176-194.

Paulhus, Delroy L. 1998. Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing. *Journal of Personality and Social Psychology*, 74: 1197-1208.

Paulhus, Delroy L. and Williams, Kevin M. 2002. The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36: 556-563.

Paunonen, Sampo, Lonnqvist, Jan-Erik, Verkasalo, Markku, Leikas, Sointu and Nissinen, Vesa 2006. Narcissism and emergent leadership in military cadets. *Leadership Quarterly*, 17: 475-486.

Pennebaker, James W., Francis, Martha E., and Booth, Roger J. 2001. *Linguistic inquiry and word count (LIWC): LIWC2001*. Mahwah, NJ: Erlbaum Publishers.

Peterson, Randall S., Smith, D. Brent, Matorama, Paul V. and Owens, Pamela D. 2003. The impact of Chief Executive Officer personality on top management team dynamics: One mechanism by which leadership affects performance. *Journal of Applied Psychology*, 88: 795-808.

Post, Jerold M. 1986. Narcissism and the charismatic leader-follower relationship. *Political Psychology*, 7: 675-688.

Raskin, Robert & Shaw, Robert. 1988. Narcissism and the use of personal pronouns. *Journal of Personality*, 56: 392-404.

Rauthmann, John F. 2012. The dark triad and interpersonal perception: Similarities and differences in the social consequences of narcissism, Machiavellianism, and psychopathy. *Social Psychological and Personality Science*, 3: 487-496.

Rosenthal, Seth A. and Pittinsky, Todd L. 2006. Narcissistic leadership. *Leadership Quarterly*, 17: 617-633.

Resick, Christian J., Whitman, Daniel, D., Weingarden, Steven M. and Hiller, Nathan J. 2009. The bright-side and the dark-side of CEO personality: Examining core evaluations, narcissism, transformational leadership, and strategic influence. *Journal of Applied Psychology*, 94: 1365-1381.

Siegel, Phyllis A. and Hambrick, Donald C. 2005. Pay disparities within top management groups: Evidence of harmful effects on performance of high technology firms. *Organization Science*, 16: 259-274.

Shaw, Jason D., Gupta, Nina and Delery, John E. Pay dispersion and workforce performance: Moderating effects of incentives and interdependence. *Strategic Management Journal*, 23: 491-512.

Thompson, Katina W. 2011. The effects of narcissistic supervision on job tension and depressed mood. Paper presented at the annual meetings of the Academy of Management, Boston.

Twenge, Jean M. and Campbell, W. Keith 2003. Isn't it fun to get the respect that we're going to deserve? Narcissism, social rejection, and aggression. *Personality and Social Psychology Bulletin*, 29: 261-272.

Van Knippenberg, Dann and Sitkin, Sim B. 2013. A critical assessment of charismatic-transformational leadership research: Back to the drawing board. *The Academy of Management Annals*, in press.

Van Essen, Marc, Otten, Jordan and Carberry, Edward J. 2012. Assessing managerial power theory: A meta-analytic approach to understanding the determinants of CEO compensation. *Journal of Management*, in press.

Vazire, Simine and Funder, Dan C. 2006. Impulsivity and the self-defeating behavior of narcissists. *Personality and Social Psychology Review*, 10: 154-165.

Vernon, Philip A., Villani, Vanessa C., Vickers, Leanne C., and Harris, Julie Aitken 2008. A behavioral genetic investigation of the dark triad and the big 5. *Personality and Individual Differences*, 44, 445-452.

Vogelstein, Fred 2006. Mastering the art of disruption: Steve Jobs is showing why he's the model CEO for the 21<sup>st</sup> century. *Fortune*, January 30.

Wade, James B., O'Reilly, Charles A. and Pollock, Timothy G. 2006. Overpaid CEOs and underpaid managers: Fairness and executive compensation. *Organization Science*, 17: 527-544.

Wade, James B., Porac, Joseph F. and Pollock, Timothy G. 1997. Worth, words, and the justification of executive pay. *Journal of Organizational Behavior*, 18: 641-664.

Wallace, Harry M. and Baumeister, Roy F. 2002. The performance of narcissists rises and falls with perceived opportunity for glory. *Journal of Personality and Social Psychology*, 82: 819-834.

Westphal, James D. and Edward J. Zajac 1995. Who shall govern? CEO-board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, 40: 60-83.

Young, S. Mark and Pinsky, Drew 2006. Narcissism and celebrity. *Journal of Research in Personality*, 40: 463-471.

Table 1

**Means, Standard Deviations, and Correlations among Study Variables<sup>a</sup>**

Variable	Mean	S.D.	1	2	3	4	5	6	7	8
1 Company Size (log of employees)	9.75	1.28	-							
2 Software (0=no, 1=yes)	0.44	0.50	0.08	-						
3 Mixed Products (0=no, 1=yes)	0.63	0.49	0.14	-0.78 **	-					
4 CEO Founder (0=no, 1=yes)	0.25	0.44	-0.05	-0.07	0.15	-				
5 CEO Tenure (years)	7.81	8.11	0.07	-0.01	0.11	0.76 **	-			
6 CEO Narcissism	3.67	1.14	0.38 *	0.03	0.04	0.31 †	0.44 *	-		
7 CEO Total Compensation	10.41	11.47	0.36 *	0.25	-0.28	0.02	0.27	0.40 *	-	
8 CEO-TMT Gap	4.21	9.51	0.23	0.18	-0.20	0.01	0.19	0.40 *	0.93 **	
9 Value of CEO's Shares	1831	5420	0.34 †	0.33 †	-0.14	0.37 *	0.57 **	0.44 **	0.56 **	0.38 *

†  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

<sup>a</sup> Financial variables (#7-#9) are stated in millions (USD). Data above are firm-level (i.e., one case per CEO or firm).  $n=32$

**Table 2: HLM Models Predicting Compensation**

	Panel 1:			Panel 2:			Panel 3:		
	CEO Total Compensation			CEO Share Value			CEO-TMT Compensation Gap		
	.1.	.2.	.3.	.1.	.2.	.3.	.1.	.2.	.3.
Constant	(35,662) †	(28,277)	(29,045) †	(11,500) **	(8,750) *	(8,470) *	(10,890) †	(7,873)	(8,489)
<i>Firm Variables</i>									
Company Size	5,660 **	4,454 *	4,701 *	821 †	321	281	1,831 **	1,343 †	1,448 *
Software	(4,360)	(3,469)	(3,321)	2,030 *	5,780 **	6,130 **	(278)	101	88
Mixed Products	(13,173) †	(12,502) *	(10,947) †	2,710	3,320 †	4,350 **	(4,450) †	(4,196) †	(3,686)
<i>CEO Variables</i>									
CEO Founder	5,997	(7,811)	(3,536)	3,660 **	(1,560)	(543)	1,075	(4,454)	(3,095)
CEO Tenure		<b>826</b>	<b>128</b>		<b>314 **</b>	<b>134</b>		<b>331 †</b>	<b>120</b>
CEO Narcissism		<b>4,472 †</b>	<b>4,362 †</b>		<b>4,473 †</b>	<b>4,371 †</b>		<b>4,438 †</b>	<b>4,406 †</b>
Tenure x Narcissism			<b>535 **</b>			<b>136 **</b>			<b>162 *</b>
LR Test vs OLS (chi-sq)	6,345 **	6,329 **	6,262 **	8,648 **	8,574 **	8,489 **	6,078 **	6,058 **	6,001 **
Wald (F-test)	11.04 *	17.46 **	28.53 **	23.27 **	40.56 **	65.44 **	12.31 *	19.96 **	28.41 **

†  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$

HLM models estimated using maximum likelihood (ML) in Stata 12.

"CEO Narcissism" specified using Mundlak (1978) pooling procedure with mean-centering, as described in Antonakis, et al. (2010: 1093).

### Narcissism-Tenure Graphed Interactions

Figure 1

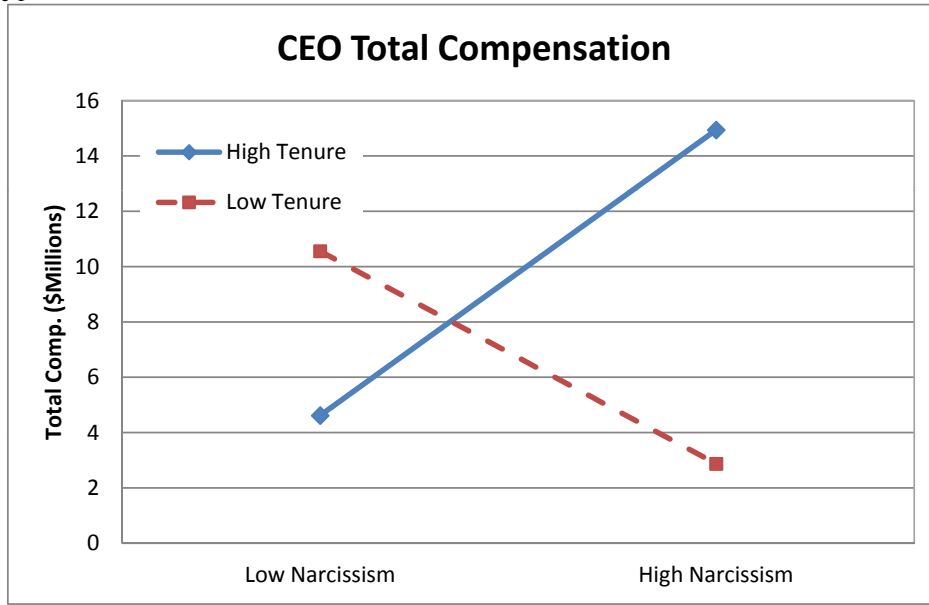


Figure 2

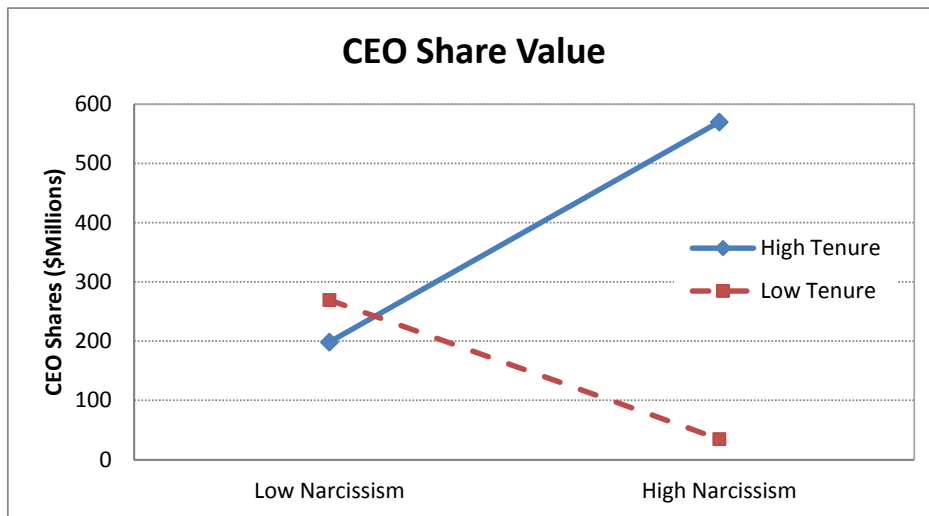


Figure 3

