

**It's All About Me:  
Narcissistic CEOs and Their Effects on Company Strategy and Performance**

**Arijit Chatterjee**

The Pennsylvania State University  
418A Business Building  
University Park, PA 16802  
(814) 865-6651  
[azc127@psu.edu](mailto:azc127@psu.edu)

**Donald C. Hambrick**

The Pennsylvania State University  
414 Business Building  
University Park, PA 16802  
(814) 863-0917  
[dch14@psu.edu](mailto:dch14@psu.edu)

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**Abstract**

Our study extends upper-echelons theory by introducing CEO narcissism as a formal construct for explaining company strategy and performance. Drawing on psychological research indicating that narcissism is a personality dimension, rather than just a pathological disorder, we argue that narcissism in CEOs is positively related to strategic dynamism and grandiosity, and it engenders extreme and volatile organizational performance. We empirically study 111 CEOs in the computer and software industries, relying on six unobtrusive indicators of CEO narcissism. These indicators, which come from multiple sources, strongly cohere and allow us to develop a multi-item CEO narcissism index. We find considerable support for our hypotheses, indicating that CEOs vary in how narcissistic they are, and that these differences affect important organizational outcomes. We conclude the paper by suggesting future research on CEO narcissism.

Keywords: CEO narcissism, upper echelons, executive personality

Researchers in strategic management and organizational theory have produced considerable evidence that top executives inject a great deal of themselves – their experiences, preferences, and dispositions – into their decisions and leadership behaviors (see Finkelstein and Hambrick, 1996 and Carpenter, Geletkanycz, and Sanders, 2004 for summaries). Some researchers have followed the suggestion of Hambrick and Mason (1984), by examining how the characteristics of top management teams (TMT) affect strategic behavior and performance (e.g. Wiersema and Bantel, 1992; Eisenhardt and Schoonhoven, 1990; Iaquinto and Fredrickson, 1997; Jensen and Zajac, 2004), while others have focused on how the characteristics of chief executive officers (CEOs ) alone influence what happens to organizations (Zajac and Westphal, 1996; Finkelstein and Boyd, 1998; Sanders, 2001).

Although prior research has generated a wealth of insights about how executive characteristics are manifested in organizational outcomes, almost no attention has been devoted to one of the most vivid qualities observed in some CEOs: extreme narcissism. Journalists, other analysts, and citizen-observers often comment on, and usually bemoan, the narcissistic tendencies of some business leaders (e.g., Vogel, 2006). At the same time, some writers have pointed to the benefits of narcissism, as when Deutschman (2005: 44) said, “Narcissists are visionaries..., which can make them excel as innovators,” and when Maccoby (2003: xiv) asked, “Why do we go along for the ride with narcissistic leaders? Because the upside is enormous.” Apart from a few qualitative descriptions (e.g., Kets de Vries, 1994; Lubit, 2002), however, organizational researchers have not systematically examined this fundamentally important executive trait. Highly narcissistic CEOs – defined as those who have very inflated self-views, and who are preoccupied with having those self-views continuously reinforced (Campbell, Goodie, and Foster, 2004) – can be expected to engage in behaviors and make decisions that

have major consequences not only for the individuals who interact directly with them, but also for broader sets of stakeholders.

There may be at least three reasons why researchers of top executives have not undertaken research on narcissism. First, they may believe that narcissism, derived as it is from Greek mythology, is a fanciful or lay concept, but not grounded in good psychological science. As we shall discuss, however, psychologists have extended the psychoanalytic concept of narcissism to the realm of large-sample psychometric analysis; as a result, narcissism passes contemporary, rigorous tests of construct validity (Emmons, 1987; Raskin and Terry, 1988). Research has shown that narcissism is a personality dimension, not just a clinical disorder, and that individuals can be reliably arrayed on this continuum.

Second, organizational researchers may be dissuaded by difficulties in data collection or measurement. The use of a clinical, or psychoanalytic, methodology requires skills and access that elude all but a few scholars of top executives (e.g., Kets de Vries, 1993); a survey methodology, while not impossible with executives (e.g., Westphal, 1999; Miller, Kets de Vries and Toulouse, 1982), is highly unlikely to succeed on a topic as sensitive as narcissism, and it rules out any assessment of past CEOs; analysis of published biographies is also feasible, but only for limited (and distinctly nonrandom) samples (e.g., Peterson, Smith, Martorana, and Owens, 2003). As we shall demonstrate, however, another method is available in the use of unobtrusive trace indicators of narcissistic tendencies. Following the methods laid out by Webb, Campbell, Schwartz, and Sechrest (1966) and Webb and Weick (1983), it is possible to obtain, from archival sources, multiple indicators that directly represent the elements of the narcissistic personality and that cohere to capture this robust characteristic in CEOs.

Third, and perhaps causing the most reluctance, organizational researchers may not believe that executive narcissism is of much theoretical or practical significance. They may see executive narcissism as incidental to organizational functioning – annoying to those who must endure it, grist for jokes about self-absorbed CEOs, but little more. However, narcissism in the corporate executive suite can be expected to lead to substantial consequences, potentially including strategic grandiosity and submissive top management teams. Moreover, if enough of a society's CEOs are extreme narcissists – absorbed by themselves and dismissive of others – then pervasive ill will, anger, and mistrust toward business leaders can accumulate. Thus, CEO narcissism may matter greatly to individual organizations, their stakeholders, and to entire social systems.

We pursue three primary objectives in this paper. First, we introduce executive narcissism as a formal construct of significance for the field of organizational theory and strategic management. The concept of narcissism opens the way for an array of new insights in such research domains as top management teams, organization design, impression management, executive compensation, governance, executive celebrity, and risk-taking. We highlight several ideas for future research at the end of the paper. Second, we use narcissism as a new theoretical element in the study of strategic behaviors of firms. We hypothesize, and demonstrate empirically, that CEO narcissism substantially contributes to explaining the variance in key outcomes of concern to strategic management scholars, including strategic dynamism, strategic grandiosity, and performance. Third, we make a methodological contribution by developing a novel, highly replicable measure of narcissistic tendencies of CEOs. Our use of unobtrusive indicators might serve as a guide for measuring other personality dimensions in executives; at a minimum, it provides a ready foundation for further work on CEO narcissism.

Our paper is organized as follows: First, we review the concept of narcissism in the psychology literature. Next, we discuss the relevance of narcissism in the executive arena, setting forth hypotheses about how narcissism will influence a CEO's strategic choices and the organization's performance. We then describe an empirical study of 111 CEOs in the computer software and hardware industries, which relies on our use of unobtrusive indicators of CEO narcissism. These six indicators, which come from multiple sources, strongly cohere and allow us to develop a multi-item CEO narcissism index. We find considerable support for our hypotheses, including evidence that CEO narcissism (measured in the early years of CEO tenure) is significantly positively related to several company outcomes (in the later years of CEO tenure), including strategic dynamism, number and size of acquisitions made, extreme performance, and volatile performance.

## **THEORETICAL BACKGROUND**

### **The Concept of Narcissism**

Ellis (1898) introduced narcissism to the psychology literature, drawing the label from the young man in Greek mythology, Narcissus, who fell in love with his own reflection in a pool and ultimately perished as a result of his self-preoccupation. The concept had a major influence on Freud's thinking (1914/1957), who ultimately identified various manifestations of narcissism, including self-love, self-admiration, self-aggrandizement, and a tendency to see others as an extension of one's self. By 1980, according to Raskin and Terry (1988), over 1000 books and articles had been written on narcissism, almost all of which viewed it as a clinical disorder.

In an effort to reconceptualize narcissism as a personality dimension, rather than just as a clinical syndrome, psychologists have developed psychometric scales for measuring narcissism.

Raskin and Hall's (1979) Narcissistic Personality Inventory (NPI) has received the most attention. Using the DSM-II (Diagnostic and Statistical Manual of Mental Disorders; American Psychiatric Association, 1968) behavioral criteria as a template, Raskin and Hall originally developed a 220-item instrument for measuring narcissism. Through a series of internal consistency tests, the instrument has been gradually culled to fewer items (reviewed in Raskin and Terry, 1988; Campbell, Goodie, and Foster, 2004), which have formed the basis for extensive subsequent tests and applications.

In a factor analysis of the NPI, Emmons (1987) identified four factors and labeled them (1) *Exploitativeness/Entitlement* (I insist upon getting the respect that is due to me); (2) *Leadership/Authority* (I like to be the center of attention); (3) *Superiority/Arrogance* (I am better than others); and (4) *Self-absorption/Self-admiration* (I am preoccupied with how extraordinary and special I am). Notwithstanding his derivation of these four facets of narcissism in the NPI, Emmons also reaffirmed that they cohere as a unitary personality construct. Other studies (Raskin and Terry, 1988; Watson and Biderman, 1993; Judge, LePine, and Rich, in press) also indicate that narcissism is a coherent, but multi-faceted personality dimension, which can be defined as the degree to which an individual has an inflated sense of self that is reflected in feelings of superiority, entitlement, and a constant need for attention and admiration (Bogart, Benotsch, and Pavlovic, 2004).

Narcissism has been found to be positively associated with self-esteem (Emmons, 1984; Morf and Rhodewalt, 1993); with biased self-enhancement (John and Robins, 1994); with affective intensity (mood swings) (Emmons, 1987), especially following criticism (Rhodewalt, Madrian, and Cheney, 1998); and with use of singular personal pronouns in speech (Raskin and Shaw, 1988). Research has shown that individuals scoring high in narcissism react to negative

feedback with more anger and aggression than do individuals low in narcissism (e.g., Kernis and Sun, 1994; Rhodewalt and Morf, 1998). NPI scores also have been shown to be negatively associated with the discrepancy between one's sense of self and sense of ideal-self (Emmons, 1987). That is, subjects scoring high on narcissism are pleased with the way they are and see little room for improvement.

As a personality characteristic, then, narcissism has both cognitive and motivational elements. On the cognitive side, narcissism entails a belief in one's superior qualities. Narcissists rate themselves highly (and more highly than is objectively warranted) on an array of agentic dimensions, including intelligence, creativity, competence, and leadership abilities (John and Robins, 1994; Farwell and Wohlwend-Lloyd, 1998; Judge, et. al., in press). As such, narcissists are very confident about their abilities in task domains, to the point of being objectively over-confident (Campbell, et al., 2004).

On the motivational side, narcissism carries an intense need to have one's superiority reaffirmed. Paradoxically, the self-admiring narcissist craves further admiration. "Narcissistic supply" (Kernberg, 1975), or the fuel for a reinforced self-image, can be derived to some extent from within, including from one's own exhibitionism or diminishment of others (Bogart, Benotsch, and Pavlovic, 2004). More importantly, however, narcissistic supply must come from others, in the forms of affirmation, applause, and adulation (Wallace and Baumeister, 2002).

A little appreciated aspect of the narcissist's craving for admiration is that it is continuous (Morf, Weir, and Davidov, 2000). Morf & Rhodewalt (2001: 177), for example, referred to the narcissist's "chronic goal of obtaining continuous external self-affirmation." Thus, the narcissist requires a steady stream of self-image reinforcement, not just occasional or much-delayed recognition (Kohut and Wolf, 1986). The narcissist is not content with being eventually praised

for a success long-in-the-coming, but instead needs applause at frequent intervals (Buss and Chiodo, 1991). To obtain such applause, the narcissist must regularly undertake challenging or bold tasks that are highly visible to a respected audience (Wallace and Baumeister, 2002); those tasks must be of the type that will earn admiration either for their inherent boldness or because they provide prompt indications of success. In a related vein, narcissists are susceptible to boredom (Wink and Donahue, 1997) and engage in various forms of “sensation-seeking” (Emmons, 1981) to overcome the essentially “mediocre” nature of day-to-day life (Kernberg, 1986). Therefore, narcissists favor the extreme, the grandiose, and the colorful. Discreet or mundane actions are not satisfying.

In sum, then, narcissism entered the literature as a label for a mental disorder, and still retains that meaning among clinicians. However, research has shown that narcissism can be thought of, and measured, as a personality dimension, and that individuals can be assigned scores along that dimension (Emmons, 1987; Raskin and Terry, 1988). Research in the latter tradition has had relatively little interest in drawing the dividing line between healthy and unhealthy narcissism. Instead, the prevailing dual themes have been that: a) a moderate amount of narcissism is essential for effective human functioning, but b) increased amounts of narcissism beyond a moderate level bring monotonic increases in other accompaniments and outcomes.

### **Narcissism in CEOs**

Because business executives, particularly CEOs, have considerable control over the forms and fates of companies (Chandler, 1962; Finkelstein and Hambrick, 1996), researchers have long been interested in their personalities and how those personalities are manifested in organizational outcomes. Some researchers have approached CEO personality from the psychoanalytic tradition, by providing descriptions and examples of various personality

syndromes in executives (e.g., Zaleznik and Kets de Vries, 1975; Kets de Vries and Miller, 1985b). Others have used psychometric surveys of executives to examine specific personality dimensions, including locus of control (Miller, Kets de Vries and Toulouse, 1982), need for achievement (Miller and Droge, 1986), and tolerance for risk (Gupta and Govindarajan, 1984); these researchers have been able to demonstrate significant links between executive personality dimensions and organizational outcomes. Some scholars have relied on content analysis of biographies (or other historical data) about executives, as a way to gauge their personalities (e.g., House, Spangler and Woycke, 1991); one such recent study used biographies to detect associations between CEO personality (in terms of the “Big Five” dimensions) and top management team dynamics (Peterson, Smith, Martorana and Owens, 2003).

Despite this wealth of attention paid to CEO personality, very few works have considered CEO or executive narcissism, and they have taken strictly a psychoanalytic tack (Kets de Vries, 1994; Lubit, 2002). We believe there is now a need and opportunity to incorporate recent theorizing about narcissism as a personality dimension – as opposed to only a pathological category – and to apply it to relatively large-scale quantitative examination of narcissistic tendencies among CEOs.

Because narcissism drives people to assume positions of power and influence (Kernberg, 1975), and because the self-esteem associated with narcissism helps in professional advancement (Raskin, Novacek and Hogan, 1991), we can anticipate that CEOs will tend, on average, to be more narcissistic than the general population. However, CEOs will still vary in their degree of narcissism, just as they have been shown to vary on other personality dimensions (Miller and Toulouse, 1986; Gupta and Govindarajan, 1984). There may be very few CEOs who have an

absence of, or very little, narcissism; but we can expect variance otherwise, with moderate, high, and very high levels of narcissism amply represented in executive populations.

In our theoretical formulation, we avoid the distinction between “healthy” and “unhealthy” (or “reactive” or “destructive”) narcissism (Kets de Vries and Miller, 1985a). Instead, we treat narcissism as a scalar construct, ranging from low to high. It may be that executives at the very high end of this scale – those who are exceedingly narcissistic – would be seen by clinicians as unhealthy. But that distinction is not important for our theoretical predictions or measurement. We will be alert to the possibility that the narcissism continuum has an inflection point or a threshold at its upper end, and that that threshold may yield stronger predictions of executive behavior than do interval scores; but our hypothesized predictions will all be based on a conceptualization of narcissism as a continuum. Nonetheless, for the sake of brevity, we will sometimes refer to “narcissists” and “non-narcissists” when the more accurate terms would be “more narcissistic” and “less narcissistic.”

### **Related Constructs**

It is useful to briefly distinguish executive narcissism from related constructs that also deal with positive self-regard – most notably self-esteem, core self-evaluation and hubris. Self-esteem refers to an individual’s overall self-acceptance, self-liking, and self-respect (Harter, 1990; Baumeister, Smart, and Boden, 1996). As such, self-esteem aligns with that aspect of narcissism dealing with self-admiration; accordingly, the two variables have been found to be significantly correlated ( $r=.56$ ; Emmons, 1984). Narcissists have high, but fragile self-esteem and they dwell upon protecting, managing and enhancing their self-esteem (Raskin, Novacek, and Hogan, 1991). Self-esteem also differs from narcissism in its absence of certain features: arrogance, sense of entitlement, and especially a continuous need for affirmation.

Core self-evaluation (CSE) is a broad, latent, higher-order trait indicated by: 1) self-esteem, 2) generalized self-efficacy, an evaluation of how well one can perform across a variety of situations; 3) emotional stability, the degree to which an individual is free of anxiety; and 4) locus of control, or beliefs about the causes of events in one's life (Judge, Erez, Bono, and Thoresen, 2003). As such, CSE aligns with that aspect of narcissism that deals with positive self-regard and self-potency. Like self-esteem, however, CSE does not encompass the continuous need for applause and adulation that characterizes narcissism. We are not aware of any studies that have examined CSE and narcissism, but we would expect correlations similar to those between self-esteem and narcissism.

Hubris is exaggerated self-confidence (with the connotation that retribution will follow) (Hayward and Hambrick, 1997). Psychologists have not formally considered hubris, but Hayward and Hambrick proposed that it is a state of extreme confidence that is triggered by a combination of external stimuli and internal disposition. On the one hand, for example, the authors argued that a firm's recent performance is a basis for CEO hubris (recently good performance induces confidence). On the other hand, they also argued that the CEO's own disposition, specifically his or her "sense of self-importance" is a precursor of hubris. Self-importance, of course, is a central aspect of the narcissistic personality (Judge, et al., in press), and thus Hayward and Hambrick were partially invoking the concept of narcissism as a contributor to hubris. But the two constructs are distinct. First, hubris is a psychological state that is brought on by some combination of confidence-buoying stimuli *and* one's narcissistic tendencies. An abundance of research on narcissism as a dispositional trait leads us to conclude that narcissism is the more fundamental, ingrained property (Emmons, 1984; Raskin and Terry, 1988; Rhodewalt and Morf, 1998). Second, just as with self-esteem and CSE, hubris lacks key

elements of the narcissistic personality – most notably, a sense of entitlement, preoccupation with self, and continuous need for affirmation and applause.

### **CONSEQUENCES FOR COMPANY STRATEGY AND PERFORMANCE**

A company's strategy is a human construction. While objective opportunities and threats play a role in shaping the actions taken by managers (Porter, 1980; Barney, 1991), evidence consistently indicates that executives' biases, experiences, and preferences influence strategic choices and company performance (summarized in Finkelstein and Hambrick, 1996; Carpenter, et al., 2004). As Hambrick and Mason (1984: 193) asserted in their presentation of the upper-echelons perspective, "organizations become reflections of their top executives."

Therefore, beyond the very direct personal effects that narcissistic CEOs may have on those who closely interact with them (as emphasized in prior psychoanalytic work (e.g., Kets de Vries, 1994; Lubit, 2002)), we can also anticipate strategic consequences. Recall that narcissism is both a cognitive frame and a motivational mechanism, consisting simultaneously of 1) a belief in one's superior abilities and 2) an intense, continuous need for affirmation. This combination of psychological qualities will lead narcissistic CEOs to engage in certain types of strategic actions: bold, quantum, highly visible initiatives, rather than incremental elaborations on the *status quo*. In turn, narcissistic CEOs will tend to deliver extreme and volatile performance for their organizations.

Narcissism can be expected to lead to strategic actions through two main operative mechanisms: the CEO's assignment of probabilities to outcomes, and preference ordering among alternatives. We do not present data to verify these mechanisms, but it is important to at least explicate how narcissism enters into a CEO's strategic choices.<sup>1</sup>

First, narcissism can be expected to affect the CEO's assignment of subjective probabilities to various outcomes. At the most basic level, the narcissist's elevated self-image will lead to relative optimism and confidence about positive outcomes, shifting estimates of payoffs – for essentially *all* alternatives – in an upward direction (Shapira, 1995; Sanders, 2001). Thus, a given action that is seen as infeasible, or of long-odds, by most CEOs might be seen in a positive light by the highly narcissistic CEO. But beyond this tendency for narcissism to generally buoy the CEO's estimates of outcomes, it will especially color the CEO's estimates of the payoffs from bold or unconventional actions, or those that align with his/her narcissistic motives. Under this mode of selective interpretation, the executive “sees what he wants to see,” “hears what she wants to hear” (Postman, Bruner, and McGinnies, 1948; Weick, 1979) and arrives at probability estimates accordingly. An alternative that feeds the narcissist's need for attention will be rated more highly, in terms of its likelihood of economic or instrumental payoff, than it would be by another executive.

Second, narcissism may influence executive choices by its direct effect on preference ordering, or what England (1967) referred to as “behavior channeling.” In this vein, Thompson (1967) described how CEOs use their organizations as “tools” in service to their own personal needs. Confronted with multiple alternatives that may seem equally attractive from the standpoint of the organization's goals, CEOs favor those alternatives that most suit their personal preferences. For the narcissist, this would be the alternative that offers the greatest “narcissistic supply” (Kernberg, 1975), or the greatest potential for attention and applause.

In sum, highly narcissistic CEOs are likely to gravitate to different types of strategic choices than other CEOs. Their inflated self-views and intense need for attention will affect their identification and assessment of strategic alternatives: They will search for the novel and

dramatic, which they will rate favorably for their organizations' purposes, and which they will rate favorably for their own personal purposes. As we shall now argue, narcissistic CEOs, thus favor strategic dynamism and grandiosity, as opposed to strategic incrementalism and stability. In turn, narcissistic CEOs tend to deliver extreme performance (big wins or big losses) and volatile performance for their organizations.

### **Strategic Consequences**

Strategic dynamism, or the degree to which an organization's strategy changes, is a central construct in the study of strategic management. Researchers have found that industry conditions (Birkinshaw, Morrison and Hulland, 1995), organizational size (Chen and Hambrick, 1995), slack (Singh, 1986), and other contextual factors affect the degree of dynamism observed in company strategies. But scholars have also found that, after controlling for contextual conditions, executive characteristics are associated with the amount of flux, or change, that occurs in strategies. For example, researchers have found that CEO tenure (Miller, 1991) and TMT tenure (Finkelstein and Hambrick, 1990) are negatively related to strategic dynamism. And Wiersema and Bantel (1992) determined that the average amount of formal education of TMT members, as well as the heterogeneity of their educational specializations, was positively related to strategic change. Thus, there is evidence that some executives are more inclined to change their company strategies than are others.

Narcissistic CEOs can be expected to favor strategic dynamism. It is through bold strategic initiatives that narcissistic CEOs can engage in the exhibitionism that will garner an attentive audience. Merely maintaining the status quo, or simply refining and elaborating on an existing strategy, may seem a reasonable course of action for a CEO who has only moderate level of narcissism; such an executive is willing to pursue what Miles and Snow (1978) called a

defender strategy, or what Levinthal and March (1993) called an exploitation strategy. But incrementalism is too invisible, too mundane, to suit the needs of the highly narcissistic CEO. Narcissists need an attentive audience, which in turn means they need drama. Thus, narcissistic CEOs will favor strategic flux or dynamism, in order to deliver a drama that will gain attention in a way that strategic stability cannot. Therefore:

*Hypothesis 1: The greater the narcissistic tendencies of a CEO, the greater the dynamism of the company's strategy.*

This hypothesis warrants additional note because it is somewhat at odds with the portrayal, by some authors, of narcissists as visionaries (Deutschman, 2005; Maccoby, 2003). To the extent that visionaries favor the bold, then narcissists would seem to qualify. However, to the extent that visionaries must be persistent, unwavering in their pursuit of a given course of action, and content to go without approval until their vision is achieved, then narcissists do not qualify. Narcissists need on-going attention and applause; they will engage in highly visible actions, perhaps even reversing their own prior decisions, to deliver the requisite drama.

Narcissists are exhibitionists (Raskin and Terry, 1988); in order to gain attention and admiration of others, they must engage in bold, attention-getting behaviors (Wallace and Baumeister, 2002). Quiet, discreet actions will not attract or impress an audience in the way that colorful or grandiose actions will.

In business, some strategic initiatives are more grandiose and attract more attention than others. Acquisitions, and particularly large acquisitions, are among the most visible initiatives a CEO can take. By their very nature, acquisitions represent quantum action, and they are attention-getters (Haspeslagh and Jemison, 1991). In one bold stroke, the CEO can expand the size, and often the scope, of the company. While acquisitions do not always garner positive acclaim (Sirower, 1994; Shleifer and Vishny, 1991), they are highly visible, attract the audience

that is needed by the narcissistic CEO, and feed his or her need to be seen as bold and daring (Wallace and Baumeister, 2002). By comparison, incremental improvements of product quality, lining up new distributors, and reducing costs do not have much visibility; they do not attract much note or acclaim. Incremental initiatives might lead to competitive success, but they are not the preferred route, or the primary route, taken by the narcissistic CEO.

In an effort to explain why CEOs make acquisitions even though most such deals destroy shareholder value, Roll (1986), introduced the “hubris hypothesis,” or the idea that CEOs mistakenly believe that they can run the acquired company better than the incumbent management. Hayward and Hambrick (1997) later invoked the concept of hubris as a determinant of the size of premiums that CEOs will pay for acquisitions. As discussed earlier, Hayward and Hambrick’s portrayal leads to the interpretation that hubris is a psychological state brought on by a combination of external factors (such as recent success) *and* one’s intrinsic narcissistic tendencies. Narcissism, then, can be thought of as the more ingrained trait. A narcissistic personality stirs hubris, and therefore the hubris hypothesis of acquisitions needs to be supplemented with the more fundamental “narcissism hypothesis.” Narcissists will favor acquisitions, both because they are highly confident in their ability to perform better than the incumbent managers *and* because acquisitions are grandiose attention-getters:

*Hypothesis 2: The greater the narcissist tendencies of a CEO, the greater the number and size of acquisitions made by the company.*

## **Performance Outcomes**

The narcissist’s tendency to pursue dynamic, grandiose strategies will be reflected in the company’s performance. Most notably, we can expect that narcissistic CEOs will tend to deliver extreme performance – big wins or big losses. The grandiose, bold actions that are preferred by

narcissistic CEOs will be high-risk, high-reward (D'Aveni, 1994; Eisenhardt, 1989). For example, the large acquisitions favored by narcissists are known to increase performance variance (Fowler and Schmidt, 1988; Lubatkin, 1987). Other types of grandiose actions that might be preferred by narcissistic CEOs – such as large increases in R&D spending, aggressive international expansion, and large-scale new product launches – will similarly tend to generate more extreme outcomes than will more moderate, or measured, strategic initiatives. (Agrawal and Mandelker, 1987; Shapira, 1995; Wiseman and Gomez-Mejia, 1998). The bold initiatives taken by narcissistic CEOs will tend to either reap big benefits from first-mover advantages (Lieberman and Montgomery, 1988) or suffer major losses from misjudging the environment (Finkelstein, 2003).

Additionally, the ongoing strategic flux that is preferred by the narcissistic CEO will cause the company to be continuously at the leading edge of new opportunities or newly envisioned pathways to success, instead of trying to refine existing formulas. This strategy of continuous novelty will give rise to extreme performance; each new, transitory direction will tend to either be a big hit or a big miss (Finkelstein and Hambrick, 1990). Thus:

*Hypothesis 3: The greater the narcissistic tendencies of a CEO, the more extreme the company's performance.*

The grandiose and ever-shifting strategic actions taken by the narcissistic CEO will not only cause extreme performance, but also wide fluctuations in performance. Big, quantum initiatives that are quickly followed by yet more, but different, large-scale actions will give rise to relatively unstable performance patterns (Bromiley, 1991; Wiseman and Gomez-Mejia, 1998). A narcissistic CEO, then, will tend not to be a consistently high performer or a consistently low performer (either of which could follow from Hypothesis 3), but will instead be prone to wide swings in performance, or instability, from one period to the next. In contrast, the more

incremental and persistent strategic approaches that are favored by non-narcissists will yield steadier, more consistent business outcomes. Thus:

*Hypothesis 4: The greater the narcissistic tendencies of a CEO, the more volatile the company's performance.*

## METHODOLOGY

### Sample

We analyzed a sample of CEOs in the computer software and hardware industries. We chose these related industries because they have substantial numbers of publicly-held firms, which was important for our data collection. Moreover, these industries are not highly regulated or otherwise tightly confined by their environments, allowing an array of managerial dispositions and strategic profiles to be potentially observed (Hambrick and Finkelstein, 1987).

We started by identifying all software (primary SIC 737)<sup>2</sup> and hardware (SIC 357)<sup>3</sup> companies listed in Execucomp (which consists of roughly the 1500 largest public U.S. firms) between 1992 and 2004. The year 1992 was the earliest that some of our indicators of narcissism were available in digital form (which was essential for their feasible coding), and 2004 was the last year for which data were available. We identified the CEO for every firm-year in this timeframe and then imposed two filters. First, we only considered those CEOs who started their tenures (which we designate as year  $t$ ) in 1991 or later. (As we shall discuss, we coded narcissism in years  $t+1$  and  $t+2$ , i.e., the second and third years of CEO's tenures). Second, we included only those CEOs who had four or more years of tenure within our time panel. These two filters generated 111 CEOs in 105 unique firms.

We averaged data from the second and third years of each CEO's tenure ( $t+1$  and  $t+2$ ) to measure narcissistic tendencies; we omitted any attention to the first year of the CEO's tenure,

because it often carries many anomalies associated with succession. Our dependent variables were measured annually for each of the subsequent years of the CEO's tenure ( $t+n$ , where  $n>2$ ), yielding a total of 352 firm-years for testing the effects of narcissism. Thus, our measure of CEO narcissism was invariant (reflecting the view that narcissism is a relatively stable disposition) and temporally preceded the measurement of company outcomes. This lagged design puts our hypotheses to a conservative test, because there is no circular or recursive relationship between our narcissism measure and the dependent variables. We included a number of CEO-, firm-, and industry-level controls. In addition, we controlled for endogeneity, or the possibility that narcissists are drawn to certain types of situations; and we controlled for selection bias due to varying CEO exits. Because we used several data sources, we will report them as we describe our measures.

### **Measurement of Narcissism**

The prevailing instrument for measuring narcissism, the Narcissistic Personality Inventory (NPI), was not feasible for our project. Top executives of public companies are very reluctant to participate in survey research; questions about traits as sensitive as narcissism would yield especially low response rates (Cycyota and Harrison, 2006), and answers would be greatly influenced by social desirability bias. Moreover, since part of our aim was to study the association between CEOs' narcissistic tendencies and subsequent organizational outcomes, it was important to study prior CEOs.

We chose instead to use unobtrusive indicators of narcissistic tendencies in CEOs. Webb, Campbell, Schwartz and Sechrest (1966) urged social scientists to use physical traces (evidence people leave behind them in their physical environment), non-participant observation, documentary sources, and the written and spoken words of subjects as ways to learn about their

preferences, perceptions, and personalities. Such unobtrusive measures eliminate problems of reactivity, demand characteristics, and researcher expectancies that often plague other methods. One of the governing principles of using unobtrusive measures is to not discard what at first sight may seem trivial or ordinary. Moreover, the researcher should “ponder the variance rather than the mean” (Webb and Weick, 1983: 214).

Several unobtrusive measures of personality have recently been used by researchers. Word usage has been used to detect individual differences (Pennebaker, Mehl and Niederhoffer, 2003); offices and bedrooms have been studied as physical manifestations of personalities (Gosling, Jin Ko and Mannarelli, 2002); personal websites have been examined as indicators of identity claims (Vazire and Gosling, 2004); and consumption patterns have been used as carriers of personality constructs (Aaker, Benet-Martinez and Garolera, 2001). In the management literature, unobtrusive measures of over-confidence and power have been used (Malmendier and Tate, 2003; Finkelstein, 1992).

Our selection of specific trace indicators of narcissism was based on two main criteria. First, each indicator needed to reflect the CEO’s volition. To qualify as a manifestation of the CEO’s personality, the indicator needed to be greatly under the control of the CEO, and not driven primarily by institutional or other external forces (DiMaggio and Powell, 1983). Second, and of paramount importance, each indicator needed to clearly reflect one or more aspects of the narcissistic personality. We were guided primarily by the four facets of narcissism identified by Emmons (1987): superiority/arrogance, exploitativeness/entitlement, self-absorption/self-admiration, and leadership/authority. We did not attempt to identify indicators that would fit cleanly into these distinct categories; instead, as will be seen, most of our indicators can

reasonably be thought to align with more than one of Emmons' facets. Our definition considers narcissism to be a superordinate construct (Edwards, 2001) that has multiple elements.

Our six indicators of narcissistic tendencies are as follows: the prominence of the CEO's photograph in the company's annual report; the CEO's prominence in the company's press releases; the length of the CEO's *Who's Who* entry; the CEO's use of first person singular pronouns in interviews; the CEO's cash compensation divided by that of the second-highest paid executive in the firm; and the CEO's non-cash compensation divided by that of the second-highest paid executive in the firm. As will be seen, these indicators co-varied greatly in our sample, allowing their combination into a 6-item narcissism index.

***Prominence of the CEO's photograph.*** The company's annual report provides an opportunity for the CEO to report on the company's progress and prospects, but also to showcase himself or herself as the firm's leader. While CEO photographs are standard features of annual reports, they are not universal or of uniform prominence. Our discussions with several corporate communications executives indicated that CEOs are very attentive to the content and design of annual reports, and they particularly have strong opinions and control over how they themselves are portrayed. We can expect that the narcissistic CEO will seek a great deal of visibility in the annual report, both as an exercise of vanity and as a strong declaration that he/she is more important than all others in the firm. We rated this indicator, as follows: four points if the CEO's photo was of him/her alone and occupied more than half a page; three points if the photo was of the CEO alone and occupied less than half a page; two points if the CEO was photographed with one or more fellow executives; and one point if there was no photograph of the CEO. We obtained annual reports from Mergent Online and company websites.

***CEO prominence in company press releases.*** Companies issue press releases on a variety of matters, including earnings results, new products, large contracts, restructurings, major new hires, and more. The content of these press releases is completely under the CEO's control. Indeed, our discussions with communications executives indicated that each CEO has very stringent guidelines for external announcements and personally reviews all but the most routine issuances. These press releases, of course, provide yet one more forum for the narcissistic CEO to remind external constituencies of who is running the firm. The narcissistic CEO will insist on being mentioned in as many press releases as possible, both as an exercise of vanity, or the desire to be showcased, as well as an assertion of authority. To develop this measure, we calculated the number of times the CEO was mentioned by name in the company's press releases and divided it by the total number of press releases.<sup>4</sup> We obtained company press releases from Factiva, a joint venture of Dow Jones and Reuters.

***Length of CEO's Who's Who entries.*** Individuals can nominate themselves for inclusion in most *Who's Who* volumes; and the CEOs in our sample – if they had sought inclusion – headed sufficiently noteworthy companies as to clearly qualify to appear in *Who's Who in Finance and Industry* (published by Marquis). Moreover, individuals have complete control over the content and length of their *Who's Who* entry, so long as their material fits into these broad categories: 1) positions of leadership held at significant organization, 2) educational attainments, 3) noteworthy achievement in creative works (writings, music, television, movies, etc.), 4) significant publishing or public speaking experience, and 5) contributions to the community. While CEOs no doubt differ in the extent of their genuine accomplishments and contributions, we also expect that narcissistic CEOs will savor the opportunity to appear in *Who's Who* and will put the opportunity to maximum advantage, describing every possible

credential and salutary activity. The narcissistic CEO believes that he or she has many accomplishments to report, and, as importantly, believes that the world needs to know about them. We coded this indicator as the number of lines of the CEO's entry in *Who's Who in Finance and Industry*; this variable was coded zero if there was no entry, on the premise that a CEO with narcissistic tendencies would readily submit his/her entry to *Who's Who*. In this vein, communications executives told us that the most egoistic (i.e., narcissistic) CEOs retain external publicists (at company expense) to enhance their positive visibility in all outlets, including *Who's Who*.

***CEO's use of first person singular pronouns.*** Speech is a form of expressive behavior, reflecting the most dominant and consistent personality traits of an individual (Ramsay, 1968; Hogben, 1977). Personal pronoun usage is an indicator of narcissism, indicating self-absorption in particular (Raskin and Shaw, 1988). We used digital transcripts of interviews of CEOs (conducted by journalists or financial analysts), isolating only those portions that represented the CEO's words. Then we counted the number of first person singular pronouns (I, me, mine, my, myself) used by the CEO, divided by the sum of those pronouns plus all first person plural pronouns (we, us, our, ours, ourselves). Thus our measure is the percentage of all first person pronouns that were singular. We used transcripts that were available through the Lexis-Nexis academic database and *Wall Street Transcript*.

***Two measures of relative pay.*** CEOs are known to have considerable influence in the setting of their own pay (Tosi and Gomez-Mejia 1989; Bebchuk and Fried, 2004), and they have nearly total control over the pay of other executives. The narcissistic CEO believes that he/she is far more valuable than anyone else in the firm, and this then becomes reflected in the CEO's compensation relative to others. Following Hayward and Hambrick's (1997) measure of self-

importance, we used two measures of the CEO's relative pay. Relative cash pay was the CEO's cash compensation (salary and bonus) divided by that of the second highest-paid executive in the firm. Relative non-cash pay was the CEO's non-cash compensation (deferred income, stock grants, and stock options (using Black-Scholes valuation) divided by that of the second highest-paid executive. Compensation data came from the Execucomp database. (Our results did not change if we used the pay of the top four executives, except the CEO, in the denominators of our measures.)

Table 1 portrays how our six indicators align with the elements of narcissism as articulated by Emmons (1987); it also provides illustrative items from the NPI that loaded onto Emmons' four facets of narcissism.

----- Insert Table 1 about here -----

Table 2 presents descriptive statistics and correlations for the six narcissism indicators. The correlations among the indicators were all strongly positive and significant at  $p < .05$ .

----- Insert Table 2 about here -----

As a further confirmation of the coherence among the indicators, we conducted factor analysis. With a principal axis factoring procedure, all six indicators loaded on a single factor (all with loadings above .40) that had an eigenvalue of 2.76 and explained 35% of the variance. All indices from confirmatory factor analysis and maximum likelihood estimation were at or above recommended standards (Non-Normed Fit Index = .92, Comparative Fit Index = .94, Standardized Root Mean Square Residual = .07, and Root Mean Square Error of Approximation = .09) (Bagozzi and Yi, 1988).

Finally, we calculated the Cronbach alpha for the standardized values (mean = 0; s.d. = 1) of all the variables. The alpha was .76, well above the level acceptable for forming a new index

(Nunnally, 1978). To develop our narcissism index, then, we calculated the simple mean of the six measures, after standardization, for each CEO. Therefore, for example, a CEO who averaged one standard deviation above (below) the mean on each of the six indicator variables would receive a narcissism score of 1.00 (-1.00).

We acknowledge that our unobtrusive indicators of CEO narcissism do not, purely speaking, provide a gauge of personality in the way that a survey instrument would. Rather, they might be more accurately thought of as indicators of “narcissistic tendencies.” For the sake of brevity, however, we will refer to our index as tapping narcissism.

### **Dependent variables**

*Strategic Dynamism.* We used two measures of strategic dynamism. Our first measure follows prior research (e.g., Westphal, Siedel and Stewart, 2001) in measuring changes in key resource allocation indicators: 1) advertising intensity (advertising/sales), 2) research and development intensity (R&D/Sales), 3) selling, general and administrative (SGA) expenses/sales, and 4) financial leverage (debt/equity). We chose these four indicators because they are controllable by the CEO and are important strategic choices in our sampled industries.

We first calculated the absolute change (without regard to direction) on each dimension for each firm between the prior year ( $t+n-1$ ) and the focal year ( $t+n$ ). We then standardized each dimension over all observations (mean = 0; s.d.=1). Finally, we summed the four standardized indicators to yield our composite measure of strategic dynamism. These four indicators yielded a one-factor solution with an eigenvalue of 1.91 explaining 47.7 % of the variance. Financial ratios were collected from COMPUSTAT.

Our second indicator of strategic dynamism measured the extent to which a firm changed its portfolio of businesses from one year to the next, using four-digit SIC codes.<sup>5</sup> Although our

companies all had primary SICs of 737 and 357, they all had additional SICs too. Our measure was the sum of all SICs added *and* dropped between the prior year (t+n-1) and the focal year (t+n). For example, a company that added two new SICs and dropped one SIC would receive a score of three. We collected these data from Ward's Business Directory of US Private and Public Companies.

***Acquisitions.*** Securities Data Corporation's (SDC) merger and acquisitions database was the source of acquisition data. We examined two measures for each focal year (t+n): a) a simple count of the number of acquisitions, and b) the ratio of the combined revenues of all acquisitions divided by the revenues of the acquiring firm, as a measure of aggregate size of acquisitions.

***Extreme performance.*** We examined extreme performance using two common measures of firm performance: total shareholder returns (TSR), calculated as change in share price plus dividends, divided by start-of-year share price; and return on assets (ROA), calculated as net income divided by assets. Both of these measures are widely used indicators of company performance (Schmalensee, 1985; Rumelt, 1991; Bloom and Milkovich, 1998; Finkelstein and Boyd, 1998). For each year (t+n), we computed the industry average TSR and ROA. Then, we measured the firm's absolute difference from the industry average. We did not consider directionality because, as hypothesized, we were interested strictly in the deviations from central performance tendencies in the industry. TSR and ROA data came from Execucomp.

***Volatile performance.*** Volatile performance was also calculated using TSR and ROA. We measured the absolute difference, or fluctuation, in the firm's TSR and ROA between the prior year (t+n-1) and the focal year (t+n). Here again, we did not consider directionality because we were interested strictly in the magnitude of the annual performance swing for each firm.

## Control Variables

We controlled for potentially confounding factors at three levels: the CEO, the firm, and the industry.

**CEO controls.** Because the tendency to engage in grandiose or dynamic strategies may vary with age or tenure, we controlled for CEO age  $_{t+n-1}$  and CEO tenure  $_{t+n-1}$ , using data from proxy statements. To control for the CEO's structural power (Finkelstein, 1992), we coded whether the CEO was also chairman, again using proxy statements, for each firm-year  $_{t+n-1}$ . Using data from Execucomp, we controlled for the percentage of company stock owned by the CEO $_{t+n-1}$ , which is another basis of power (Finkelstein, 1992). Finally, as a control for overall trends, we included the calendar year in which the CEO's tenure started (year  $t$ ), measured as a continuous variable.

**Firm controls.** To control for immediate resource availability, or slack, we included the ratio of current assets to current liabilities  $_{t+n-1}$ . We also controlled for the prior year's performance, measured by ROA  $_{t+n-1}$ . Because large and old firms may face bureaucratic momentum, we controlled for firm size (natural logarithm of revenues  $_{t+n-1}$ ) and age.

To account for the possibility that a given firm may have ingrained, or institutionalized, strategy or performance tendencies, we included another firm-level control. Specifically, for each dependent variable, we included its value for the firm in the year prior to the start of the CEO's tenure ( $t-1$ ).

**Industry controls.** We controlled for the industry central tendencies for each of our dependent variables, by including the industry average (for all firms in the sample, always excluding the focal firm) in each year ( $t+n$ ), for each dependent variable. We included these

controls, respectively, for each firm-level dependent variable examined. We also included a dummy variable for our two industry sectors (coded to one for the computer sector).

*Correction for endogeneity.* We controlled for endogeneity, or the possibility that narcissistic CEOs are drawn to certain situations and/or that some conditions particularly allow demonstration of narcissistic tendencies. To do this, we regressed our measure of CEO narcissism (again, measured in years t+1 and t+2) against a set of antecedent and contemporaneous variables. The antecedent variables, which captured key aspects of the CEO's entry conditions, were measured in t-1 (the year prior to the CEO's start); they included firm revenues, age, ROA, and calendar year. We also included ROA change between t and t+1, on the assumption that early performance improvements might stimulate narcissistic tendencies. The contemporaneous variables, measured in t+1, included two measures of power (CEO/chair duality and CEO ownership), CEO age, and a dummy variable for whether the CEO was an outside hire (defined as having arrived at the firm within a year prior to becoming CEO). We also included a dummy variable for whether the CEO was a founder of the firm. Finally, we also included a dummy variable to indicate whether the firm was in the software or hardware sector.

Among all these 10 variables, only two were significantly predictive of CEO narcissism. Specifically, revenues in the year prior to the CEO's start was positively related to CEO narcissism ( $p < .01$ ), and ROA in that same year was negatively related to CEO narcissism ( $p < .01$ ). These results are consistent with the view that narcissists are drawn to highly visible settings (larger companies) in which they face challenging conditions that enhance the chances of applause (poorly performing companies). These results are additionally noteworthy, because they indicate that our measure of narcissism is not related to structural power, thus supporting the view that it is more a reflection of personal disposition than power. Using the regression coefficients for the two significant variables,

we calculated each CEO's predicted narcissism score and included that value as an endogeneity control in our analyses.

***Correction for sample selection bias.*** We analyzed an unbalanced data set, with CEOs of varying tenure lengths. If narcissistic CEOs have systematically different tenures than non-narcissists, our results would be biased. To correct for this possible sample selection bias, we estimated the likelihood that the CEO would remain in office in year  $t+n$ ; the predictor variables were CEO age, CEO tenure year, CEO ownership, CEO/chair duality, ROA, and revenues (all measured in  $t+n-1$ ). We used the *xtprobit* function in Stata to calculate the Mill's ratio (for each firm-year  $t+n$ ). This control variable, however, was highly collinear with two of its predictors: CEO tenure ( $r = .90$ ) and CEO age (.40). Because we use these latter two variables as controls, we excluded the Mill's ratio from our reported analyses – with no effect on results.

### **Model and estimation**

Because we had multiple observations for almost all firms, we used generalized estimating equations (GEE) (Liang and Zeger, 1986), which derive maximum likelihood estimates and accommodate non-independent observations. To define our model, we needed to specify 1) the distribution of the dependent variable, 2) a link function, 3) the independent variables, and 4) the covariance structure of the repeated measurements. When our outcome measure was discrete and with limited range (change in SICs and number of acquisitions), we specified a negative binomial distribution with a log link function. For all other measures we specified a Gaussian (normal) distribution with an identity link function. Finally, we used robust variance estimators (White, 1980) in all our models. We used the *xtgee* routine in Stata 9.0.

## RESULTS

Table 3 presents means, standard deviations and correlations among the variables. To conserve space, we have not shown the statistics for firm-level control variables in the year prior to the CEO's start (t-1).

----- Insert Table 3 about here -----

Table 4 presents GEE results for our tests of the effects of narcissism on company strategy. For each dependent variable we present two models: one with control variables and one that adds the CEO narcissism measure. The results provide considerable support for Hypotheses 1 and 2, and all models are highly significant, by Wald  $\chi^2$  test.

----- Insert Table 4 about here -----

Hypothesis 1 predicted that CEO narcissism is positively associated with strategic dynamism. For our first measure of strategic dynamism, reflecting changes in resource deployment, results supported the hypothesis; CEO narcissism showed a positive and highly significant ( $p < .01$ ) effect in Model 2. For the second indicator of strategic dynamism, change in SICs, CEO narcissism had a marginally significant effect ( $p < .10$ ), as reported in Model 4.

Hypothesis 2 posited that CEO narcissism is positively related to strategic grandiosity, as indicated by number and size of acquisitions. We find support for both of these indicators. As shown in Model 6, CEO narcissism was positively related to the number of acquisitions ( $p < .05$ ); and in Model 8, narcissism was positively related to the aggregate size of acquisitions ( $p < .01$ ).

Table 5 presents results for company performance, using the same format as Table 4. For our test of Hypothesis 3 – that CEO narcissism is positively associated with extreme performance – we find considerable support. Model 10 indicates that CEO narcissism was

positively related to ROA extremeness ( $p < .01$ ), and Model 12 indicates a positive effect of CEO narcissism on TSR extremeness ( $p < .05$ ).

----- Insert Table 5 about here -----

Our final Hypothesis 4, regarding the effect of CEO narcissism on performance volatility, was only partially supported. As shown in Model 14, narcissism was positively related to ROA volatility ( $p < .01$ ), but Model 16 indicates no significant effect on TSR volatility.

In sum, we find substantial support for our hypotheses. Our measure of CEO narcissism (which was based on indicators early in the CEO's tenure) was predictive of company outcomes (observed in subsequent years): strategic dynamism, strategic grandiosity (as indicated by number and size of acquisitions), extreme performance, and (for ROA) volatility of performance.

## DISCUSSION

### Theoretical Contribution

In recent years, researchers in a variety of academic fields – including strategic management (Jensen and Zajac, 2004), organizational theory (Palmer and Barber, 2001), psychology (Peterson, et. al, 2003), and finance (Bertrand and Schoar, 2003) – have shown considerable interest in understanding the effects of top executives on their organizations. Among the executive characteristics examined, demographic descriptors (Carpenter and Fredrickson, 2001) and Big 5 personality dimensions (Peterson, et. al., 2003) have been most prevalent. Almost no scholarly attention has been paid to the personality trait that most vividly comes to mind in describing some CEOs: narcissism.

We have drawn upon contemporary psychological theory and research to argue that narcissism in CEOs is a personality dimension, rather than only a pathological disorder (Kets de

Vries and Miller, 1985a). Moreover, we have taken a tack that differs from those writers who primarily focus on the effects that narcissistic CEOs have on the people immediately around them (e.g., Kets de Vries, 1994; Lubit, 2002), by arguing and showing empirically that narcissistic CEOs, through their concrete decisions, generate different company strategies and performance profiles than do their less narcissistic counterparts.

Following from the theoretical argument that narcissistic CEOs favor actions that attract an attentive audience, we find considerable evidence that CEO narcissism is positively related to multiple indicators of strategic dynamism and grandiosity. While less narcissistic CEOs may be inclined to pursue incrementalist strategies that entail refining and elaborating on the *status quo*, narcissistic CEOs gravitate to more extreme choices. In particular, they engage in substantial strategic change and considerable acquisition behavior. These findings add to the evidence that company strategies are highly susceptible to human factors in the executive suite (Finkelstein and Hambrick, 1996; Bertrand and Schoar, 2003), and they particularly highlight the role of CEO narcissism in generating bold strategies.

As a logical accompaniment of the tendency for narcissistic CEOs to engage in extreme strategic behaviors, we find evidence, as hypothesized, that CEO narcissism is also related to extreme and volatile company performance. Narcissistic CEOs, who tend to pursue dynamic and grandiose strategies, also tend to generate more extreme performance – more big wins and big losses – than their less narcissistic counterparts (as measured both by accounting and shareholder returns). The evidence of volatile performance was less complete, but there was a strong indication that CEO narcissism was associated with large annual fluctuations in accounting returns (ROA).

One might reasonably ask whether CEO narcissism is related to the *level* of company performance generated. That is, do narcissistic CEOs perform better or worse than non-narcissists? There is no theoretical rationale for hypothesizing one or the other, but we explored this question in a supplementary analysis. We re-ran Models 9-12 (which dealt with performance extremeness), but changed the dependent variables to simply ROA and TSR. The results were null. There was no indication that CEO narcissism was related to the level of company performance generated. Thus, although narcissists tend to generate more extreme and volatile performance than non-narcissists, they do not generate systematically better or worse performance. Of course, a different result might have been observed in a different industry. In this vein, it is interesting to consider Maccoby's (2003) assertion that narcissism is a valuable executive trait in a highly dynamic industry. Since narcissism had no discernible effect on level of performance in the highly dynamic industries we studied, we might reasonably expect that it would have a negative effect in more stable settings.

**Testing for Threshold Effects.** Although we conceptualized CEO narcissism as a scalar continuum, the psychoanalytic perspective calls for narcissism to be viewed as a discrete, distinct pathology (e.g., Lubit, 2002). If narcissism is a syndrome, rather than a personality dimension, then the highly significant statistical results we found, and which we have interpreted as linear relationships, might be masking a set of nonlinear patterns, in which increments in narcissism have no effect on company outcomes unless they reach very high levels – in a threshold-type of pattern.

To test for such nonlinearities, we divided our sample of CEOs into quartiles based on their narcissism scores. We re-ran all the analyses in Tables 4 and 5, but included dummy variables for the narcissism quartiles (instead of the simple narcissism score). Figure 1 shows

graphs of the coefficients for each narcissism quartile, for each dependent variable (except TSR volatility, which was not significant). Although the graphs vary somewhat, they collectively indicate that the full range of our narcissism scale is relevant in predicting company outcomes. Contrary to the view that only extremely high levels of narcissism matter, these graphs indicate that increments across the full range of our narcissism scale tend to bring increments in the several dependent variables. In turn, these results support the recent view among psychologists that narcissism is a personality dimension rather than just a pathologic category.

**On the Stability of Narcissism.** According to psychological research, one's degree of narcissism is relatively enduring and stable (Cramer, 1998; Campbell, Foster and Finkel, 2002). Narcissistic tendencies are thought to stem from a combination of genetic (Alvarez and Jaffe, 2004) and early childhood factors (Kernberg, 1975; Millon, 1981), and therefore are relatively fixed within adulthood. We adopted this premise that narcissism is an enduring trait when we measured CEO narcissism at just one point in time – the average of the CEO's second and third years of tenure.

It might reasonably be asked whether our measure exhibited stability over time. As a partial test, we calculated our narcissism score in the fourth year of the tenures of the 111 CEOs in our sample. Its correlation with the measure from years two and three was .59 ( $p < .001$ ), indicating substantial short-term stability. Then, for those 60 CEOs who served at least six years, we calculated their narcissism scores for year six; the correlation of narcissism in year six with our measure from years two and three was .54 ( $p < .001$ ), again demonstrating considerable stability – but over an even longer period. The lack of a perfect correlation is due to some unknown combination of measurement error and minor changes in narcissism over time (which

would be very interesting to study). For the most part, however, it appears that narcissistic tendencies of CEOs are highly persistent.

### **Methodological Contribution**

Beyond our theoretical contribution to the study of the effects of CEO personality on strategic outcomes, our paper also makes a methodological contribution. By relying on unobtrusive trace indicators of narcissistic tendencies, we overcome the well-known difficulties of administering personality batteries to CEOs. We identified six distinct indicators of various facets of the narcissistic personality, from an array of sources, and determined that they cohered strongly and could be used to form a narcissism index. Notwithstanding the fact that, purely speaking, we have tapped ‘demonstrations of narcissistic tendencies’ rather than the narcissistic personality directly, our method may provide a template for using unobtrusive indicators of other personality dimensions in CEOs, and it particularly provides a foundation for a wide-ranging stream of research on narcissism in CEOs.

### **LIMITATIONS, FUTURE RESEARCH AND SUMMARY**

Our findings and future research on CEO narcissism must be considered in the context of this study’s limitations. The most notable limitation is that we have introduced a measure of CEO narcissism that is less than fully-tested. Even though our six indicators have face validity, statistically cohere, and yield an index that predicts logically-derived outcomes, our measure of narcissism warrants additional validation and refinement. New unobtrusive indicators might be identified, or current ones dropped or revised, as part of the refinement process. The index, and perhaps our entire project, needs to be replicated on other samples.

It would be especially desirable to determine the correlation between our narcissism scale and the well-tested NPI. Although we are very doubtful about getting CEOs to complete the NPI, it may be possible to obtain NPI ratings on CEOs from their close subordinates or others. Such an exercise could confirm the validity of our measure, and it could also help answer another important question: Where do CEOs fall on the NPI scale? Our sample of CEOs exhibited substantial variance on our narcissism measure, but it is possible (indeed likely) that they almost all had above-average levels of narcissism. If so, our tests were based on a highly restricted range of narcissistic tendencies (say, the upper half of the NPI distribution), thus imposing a bias that made it difficult to find the significant patterns we did.

Apart from research projects that would validate and improve our measure, we can envision many other projects on narcissism. We will note just a few. First, it would be very interesting to examine multiple industries, but with a theoretical eye rather than just testing generalizability. Specifically, it would be useful to explore whether narcissistic CEOs are more prevalent in some industries than others. If narcissistic individuals need settings that allow them to feed their narcissistic tendencies, they may be drawn to, and rise to the top in, high-discretion industries (Hambrick and Finkelstein, 1987), such as computers, media and entertainment, and fashion; but they may not be commonly found in low-discretion, more constrained settings, such as utilities, insurance or basic metals.

Second, it would be very interesting to study the interaction of narcissism and a CEO's recent performance. It may be, for instance, that narcissism and recent high performance amount to a 'combustible combination' that triggers particularly aggressive acts of hubris (Hayward and Hambrick, 1997).

Third, there is a need to study the effects of CEO narcissism on those individuals who interact most closely with CEOs. What effects does narcissism have on TMT processes (Peterson, Smith, Martorana, and Owens, 2003)? And what effects does it have on the turnover and career trajectories of executives who report to the CEOs? When narcissistic CEOs perform well, do they hoard the glory? And when they perform poorly, are they relatively likely to scapegoat those around them?

In sum, CEO narcissism is a highly promising topic of study. Our project indicates that CEO narcissistic tendencies can be objectively measured in large-scale samples, and these tendencies substantially affect what happens to companies. An abundant array of research questions on executive narcissism awaits scholars of strategy and organizations.

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**TABLE 1**  
**Unobtrusive Indicators of Narcissism in CEOs**

Conceptual Elements of Narcissism (from Emmons, 1987)				
	Leadership/ Authority	Self-absorption/ Self-admiration	Superiority/ Arrogance	Exploitativeness/ Entitlement
<b>Illustrative Items From Narcissistic Personality Inventory (NPI)</b>	I really like to be the center of attention. I like having authority over other people.	I like to look at myself in the mirror. I am an extraordinary person.	I usually dominate any conversation. I am a born leader.	I insist on getting the respect that is due to me. I am envious of other people's good fortune.
Unobtrusive Indicators of Narcissism in CEOs		Interpretive Alignment With Elements of Narcissism		
<ul style="list-style-type: none"> <li>• <b>Prominence of CEO's Photograph in Annual Reports</b></li> <li>• <b>CEO Prominence in Press Releases</b></li> <li>• <b>Length of <i>Who's Who</i> Entries</b></li> <li>• <b>First Person Singular Pronouns in Interviews</b></li> <li>• <b>CEO Relative Pay (cash and non-cash)</b></li> </ul>	I am the central figure in this company.  I am the central figure in this company.  Leadership is a solo endeavor, not a group activity.	I enjoy the visibility that comes with being CEO.  I enjoy the visibility that comes with being CEO.  I have a lot of impressive credentials and accomplishments.	The public will want to know about all my credentials and accomplishments.  The company and I are synonymous.  I am, by far, the most valuable person in this organization.	I deserve to be showcased.  I deserve to be showcased.  I deserve to be showcased.  I deserve far more compensation than anyone else in this organization.

**TABLE 2**  
**Six Indicators of CEO Narcissistic Tendencies: Descriptive Statistics and Correlations**  
**(2-year averages, Pearson correlations)**

Variable	Mean	S. D.	1	2	3	4	5
1. CEO prominence in annual reports	2.52	.79					
2. CEO prominence in press releases	.49	.30	.38**				
3. Length of entry in Who's Who	2.39	3.80	.29**	.35**			
4. Relative use of first person singular pronouns	.21	.09	.43**	.44**	.33**		
5. CEO relative cash compensation	1.65	.72	.49**	.26**	.34**	.32**	
6. CEO relative non-cash compensation	2.55	2.35	.33**	.21*	.22*	.36**	.51**

N = 111

\* p < .05

\*\* p < .01

**TABLE 3**  
**Correlations and Descriptive Statistics**

<i>Variables</i>	<i>Mean</i>	<i>S. D.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>	
1 CEO narcissism	.03	.69																	
2 CEO age $t+n-1$	49.22	6.92	-.01																
3 CEO ownership $t+n-1$	1.85	5.29	-.09	-.30															
4 CEO is chair $t+n-1$	.68	.47	.07	.07	.12														
5 CEO tenure year $t+n-1$	5.65	1.74	.08	.17	-.01	.25													
6 Firm age $t+n-1$	24.68	25.65	.13	.34	-.17	.21	.16												
7 Firm slack $t+n-1$	2.81	2.79	-.03	-.29	.06	-.14	-.11	-.25											
8 Firm revenues (Log) $t+n-1$	2.82	.83	.19	.31	-.12	.10	.17	.58	-.41										
9 Prior year ROA $t+n-1$	-1.46	29.62	.08	-.06	-.02	.01	.05	.11	-.08	.21									
10 Prior year TSR $t+n-1$	26.21	99.30	-.03	-.05	.05	-.08	-.09	-.07	.01	-.06	.04								
11 Industry average strategic dynamism $t+n$	.07	.04	.02	-.01	.01	.01	.05	-.01	-.05	.02	.02	.12							
12 Industry average change in SICs $t+n$	.41	.25	.01	-.01	-.02	.05	-.13	-.05	.06	-.02	.05	-.10	-.24						
13 Industry average no. of acquisitions $t+n$	1.72	.33	.03	-.01	.08	-.09	-.11	.02	-.09	.02	.05	.21	.31	-.07					
14 Industry average size of acquisitions $t+n$	.11	.12	.07	.05	-.03	.06	.19	.01	-.04	.04	.04	.03	.06	.06	.13				
15 Industry average ROA $t+n$	-2.53	6.24	-.01	.03	.04	-.06	-.06	.02	-.11	.08	.02	.24	.55	-.36	.45	.07			
16 Industry average TSR $t+n$	27.9	35.08	.01	-.01	.05	-.09	-.05	.01	-.09	.07	.08	-.07	.39	.04	.39	-.03	.27		
17 Industry average ROA volatility $t+n$	13.42	4.88	.01	-.04	-.01	.05	.02	-.04	.11	-.11	-.07	-.13	-.68	.21	-.47	-.21	-.82	-.44	
18 Industry average TSR volatility $t+n$	79.07	17.72	-.01	-.04	-.02	.06	.14	-.06	.04	-.09	.01	-.11	.70	-.24	-.16	.01	.01	.26	
19 Calendar year $t+n$	2000.59	2.44	-.07	.02	-.12	-.01	.25	-.02	.03	-.06	-.08	-.16	.02	-.53	-.49	-.01	-.21	-.22	
20 Sector dummy	.23	.43	.03	.12	.01	.01	-.03	.39	-.15	.47	.08	.04	-.02	.07	.16	.02	.08	.06	
21 Strategic Dynamism $t+n$	-.03	.38	.22	.02	-.01	.05	-.09	-.09	.01	-.23	-.16	.02	.07	.11	-.01	-.02	.06	-.01	

**TABLE 3 (Contd.)**  
**Correlations and Descriptive Statistics**

<i>Variables</i>	<i>Mean</i>	<i>S. D.</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>
22 Change in SICs <sub>t+n</sub>	.41	1.02	.19	.17	-.07	.08	-.15	.38	-.12	.28	.06	-.05	-.05	.06	.01	-.02	-.09	.01
23 Number of acquisitions <sub>t+n</sub>	1.72	2.06	.23	.03	-.01	.05	.01	.26	-.03	.37	.12	.09	.05	.01	-.07	.05	.07	.06
24 Size of acquisitions <sub>t+n</sub>	.11	.30	.14	-.13	.03	.11	.06	-.10	.15	-.11	.05	.01	.02	-.01	.02	.30	.04	-.02
25 ROA extremeness <sub>t+n</sub>	14.95	32.37	.17	.02	.02	.07	-.04	-.11	.12	-.17	-.13	-.12	-.16	.11	-.09	.04	-.36	-.11
26 TSR extremeness <sub>t+n</sub>	54.77	68.56	.13	-.05	-.09	.02	-.08	-.12	.11	-.15	-.08	.11	.19	.07	.18	-.02	.04	.22
27 ROA volatility <sub>t+n, t+n-1</sub>	.19	.25	.10	-.12	.01	-.03	-.08	-.25	.20	-.31	-.17	.01	-.01	.05	-.01	-.01	-.15	-.01
28 TSR volatility <sub>t+n, t+n-1</sub>	.81	.91	-.08	.04	.04	.02	-.04	-.14	.04	-.19	-.03	.32	.07	-.01	-.06	-.05	-.04	.05
29 Endogeneity control	.01	.32	.40	.19	-.11	.13	.08	.51	-.13	.58	.04	.01	.01	.06	.01	-.01	.04	.04

<i>Variables</i>	<i>Mean</i>	<i>S. D.</i>	<i>17</i>	<i>18</i>	<i>19</i>	<i>20</i>	<i>21</i>	<i>22</i>	<i>23</i>	<i>24</i>	<i>25</i>	<i>26</i>	<i>27</i>	<i>28</i>	<i>29</i>
18 Industry average TSR volatility <sub>t+n</sub>	79.07	17.72	-.04												
19 Calendar year <sub>t+n</sub>	2000.59	2.44	.08	.39											
20 Sector dummy	1.23	.43	-.08	-.16	-.19										
21 Strategic Dynamism <sub>t+n</sub>	-.03	.38	-.01	-.02	-.11	-.04									
22 Change in SICs <sub>t+n</sub>	.41	1.02	.06	.02	-.13	-.06	-.01								
23 Number of acquisitions <sub>t+n</sub>	1.72	2.06	-.01	.05	-.08	-.03	-.06	.08							
24 Size of acquisitions <sub>t+n</sub>	.11	.30	-.05	-.01	-.01	-.01	.04	-.01	.19						
25 ROA extremeness <sub>t+n</sub>	14.95	32.37	.33	-.07	.32	.04	.18	-.02	-.07	.08					
26 TSR extremeness <sub>t+n</sub>	54.77	68.56	.15	.18	-.08	.16	.21	-.01	-.06	.02	.12				
27 ROA volatility <sub>t+n, t+n-1</sub>	.19	.25	.13	-.01	.15	.08	.33	-.07	-.15	.03	.20	.19			
28 TSR volatility <sub>t+n, t+n-1</sub>	.81	.91	.08	.06	.04	.15	.03	-.05	-.09	-.05	.01	.14	.07		
29 Endogeneity control	.01	.32	-.02	.03	-.15	-.05	-.08	.22	.45	-.09	-.07	-.04	-.14	-.06	

Correlations greater than |.10| are significant at the p< .05 level.

N=352

**TABLE 4**  
**CEO Narcissism and Strategic Consequences: Results of GEE Analysis\***

Predictor Variables	Model:	<i>Strategic Dynamism</i>		<i>Change in SICs<sup>a</sup></i>		<i>Number of Acquisitions<sup>a</sup></i>		<i>Size of Acquisitions</i>	
		1	2	3	4	5	6	7	8
CEO age <sub>t+n-1</sub>		.01 (.01)	.01 (.01)	.03 (.02)	.03 (.02)	-.02 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)
CEO is chair <sub>t+n-1</sub>		.05 (.05)	.05 (.05)	.19 (.29)	.17 (.29)	-.01 (.15)	-.01 (.15)	-.09** (.04)	.09** (.03)
CEO ownership <sub>t+n-1</sub>		-.01 (.01)	-.01 (.01)	-.01 (.01)	-.01 (.01)	.01 (.01)	.01 (.01)	-.01 (.01)	.01 (.01)
CEO tenure <sub>t+n-1</sub>		-.01 (.01)	-.01 (.01)	-.42*** (.13)	-.41*** (.13)	-.03 (.03)	-.03 (.04)	-.01 (.01)	-.01 (.01)
Firm age <sub>t+n-1</sub>		-.01 (.01)	-.01 (.01)	.01 (.01)	.01 (.01)	.01* (.01)	.01 (.01)	-.01 (.01)	-.01 (.01)
Firm slack <sub>t+n-1</sub>		-.05* (.03)	-.05* (.03)	.01 (.14)	.02 (.13)	.20 (.14)	.21 (.13)	.06 (.05)	.06 (.05)
Firm revenues (Log) <sub>t+n-1</sub>		-.15* (.08)	-.14** (.06)	.14 (.24)	.15 (.25)	.52*** (.15)	.52*** (.14)	-.01 (.03)	.01 (.02)
Firm ROA <sub>t+n-1</sub>		-.04 (.03)	-.04* (.02)	.29 (.27)	.29 (.28)	.29*** (.09)	.30*** (.09)	.02 (.04)	.01 (.04)
Industry average strategic dynamism <sub>t+n</sub>		.46 (.46)	.48 (.45)						
Industry average change in SICs <sub>t+n</sub>				-.08 (.42)	-.07 (.44)				
Industry average number of acquisitions <sub>t+n</sub>						-.29* (.17)	-.31* (.17)		
Industry average size of acquisitions <sub>t+n</sub>								.64*** (.10)	.63*** (.09)
Sector Dummy		.06 (.08)	.08 (.08)	.38 (.41)	.47 (.40)	-.66*** (.16)	-.61*** (.17)	-.03 (.05)	-.03 (.04)
Number of SICs <sub>t+n</sub>				.23*** (.07)	.23*** (.07)				
Strategic dynamism <sub>t-1</sub>		-.03 (.08)	.01 (.06)						
Change in SICs <sub>t-1</sub>				.04 (.08)	.01 (.08)				
No. of acquisitions <sub>t-1</sub>						.03 (.03)	.05 (.03)		
Value of acquisitions <sub>t-1</sub>								-.15*** (.06)	-.12*** (.04)
Control for endogeneity		.12 (.10)	-.05 (.09)	-.25 (.36)	-.41 (.37)	.04 (.18)	-.16 (.21)	-.02 (.04)	-.09* (.05)
CEO Narcissism			.18*** (.05)		.29* (.17)		.23** (.09)		.08*** (.03)
Wald chi <sup>2</sup>		21.12**	48.11***	96.97***	104.54***	165.37***	150.87***	69.96***	98.76***
Pseudo R <sup>2</sup>		.10***	.18***	.25***	.27***	.28***	.29***	.15***	.17***

\*N=352; Standard errors are in parentheses; \* p < .10; \*\* p < .05; \*\*\* p < .01;

<sup>a</sup>. Specified as negative binomial in the GEE analysis

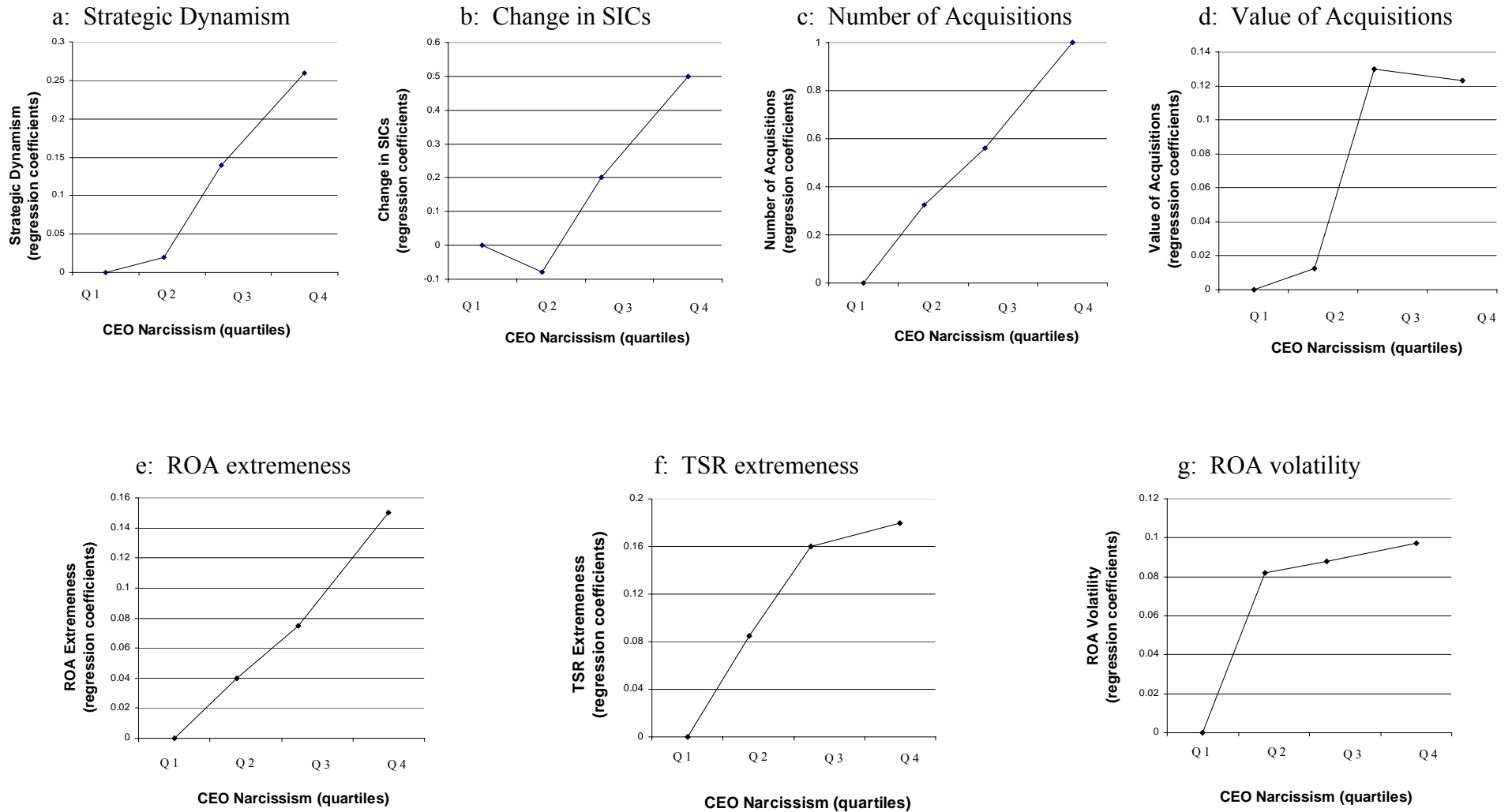
**TABLE 5**  
**CEO Narcissism and Company Performance: Results of GEE Analysis\***

Predictor Variables	Model:	ROA extremeness		TSR extremeness <sup>a</sup>		ROA volatility		TSR volatility <sup>a</sup>	
		9	10	11	12	13	14	15	16
CEO age <sub>t+n-1</sub>		.01 (.01)	.01* (.01)	-.01 (.01)	.01 (.01)	-.01 (.01)	-.01 (.01)	.02 (.01)	.02 (.01)
CEO is chair <sub>t+n-1</sub>		.03 (.03)	.02 (.03)	.17*** (.09)	.17** (.08)	.01 (.03)	.02 (.03)	.12 (.09)	.12 (.09)
CEO ownership <sub>t+n-1</sub>		-.01 (.01)	.01 (.01)	-.02*** (.01)	-.02*** (.01)	.01 (.01)	-.01 (.01)	.01 (.01)	.01 (.01)
CEO tenure <sub>t+n-1</sub>		-.01 (.01)	-.01 (.01)	-.01 (.03)	-.01 (.03)	-.03 (.10)	.01 (.01)	-.03 (.12)	-.03 (.03)
Firm age <sub>t+n-1</sub>		-.01* (.01)	-.01** (.01)	-.01** (.01)	-.01** (.01)	-.01*** (.01)	-.01*** (.01)	-.01*** (.01)	-.01*** (.01)
Firm slack <sub>t+n-1</sub>		-.01 (.02)	-.01 (.02)	.06* (.03)	.06** (.03)	.01 (.02)	.01 (.03)	-.01 (.06)	-.01 (.05)
Firm revenues (Log) <sub>t+n-1</sub>		-.07*** (.04)	-.08*** (.04)	-.14*** (.05)	-.14*** (.05)	-.08** (.04)	-.08** (.04)	-.16*** (.17)	-.16*** (.10)
Firm ROA <sub>t+n-1</sub>		-.02 (.06)	-.02 (.06)			-.03 (.04)	-.02 (.02)		
Firm TSR <sub>t+n-1</sub>				.07 (.05)	.08 (.05)			.34*** (.08)	.34*** (.08)
Industry average ROA <sub>t+n</sub>		-.12*** (.01)	-.12*** (.01)						
Industry average TSR <sub>t+n</sub>				.16*** (.03)	.16*** (.03)				
Industry average ROA volatility <sub>t+n</sub>						.01** (.01)	.01** (.01)		
Industry average TSR volatility <sub>t+n</sub>								.12*** (.04)	.14*** (.05)
Sector Dummy		.15** (.07)	.17*** (.06)	.12 (.11)	.15 (.10)	.06* (.03)	.07* (.04)	.13 (.10)	.13 (.10)
ROA extremeness <sub>t-1</sub>		.07 (.09)	-.17* (.09)						
TSR extremeness <sub>t-1</sub>									
ROA volatility <sub>t-1</sub>						-.01 (.01)	-.03 (.01)		
TSR volatility <sub>t-1</sub>									
Control for endogeneity		.04 (.08)	-.05 (.08)	.12 (.09)	-.02 (.11)	-.07 (.05)	-.01 (.04)	.22 (.16)	.29* (.17)
CEO Narcissism			.13*** (.04)		.16*** (.06)		.08*** (.03)		-.08 (.05)
Wald chi <sup>2</sup>		128.37***	149.58***	68.79***	93.00***	74.33***	115.23***	40.73***	41.35***
Pseudo R <sup>2</sup>		.20***	.27***	.14***	.16***	.15***	.19***	.21***	.21***

\* N=352; Standard errors are in parentheses; \* p < .10; \*\* p < .05; \*\*\* p < .01

<sup>a</sup> Because of considerable missing data, we did not include TSR in the year prior to the CEO's start as a control in these models. When we included that control and examined a reduced sample, results remained the same as reported

**FIGURE 1**  
**Relationships of CEO Narcissism with Strategic Dynamism, Strategic Grandiosity and Performance**



## Notes

1. It is important to note that our line of thought does not require, or imply, that CEOs will directly make all strategic decisions. CEOs also create the context – through hiring, allocations of rewards and power, design of systems and procedures – by which others identify and promote certain courses of action (Bower, 1970; Burgelman, 1996). It may be through this context-creation that narcissistic CEOs generate the strategic actions we anticipate.
2. SICs included: 7370, 7371, 7372, 7373, 7374, 7377
3. SICs included: 3570, 3571, 3572, 3577, 3578, 3579
4. An intriguing possibility is that narcissistic CEOs strive to be visible in positive press releases, but invisible in releases of negative news. However, the overwhelming majority of releases convey positive or neutral news; moreover, bad news is often buried or disguised within broader announcements. Therefore, we did not attempt to pursue the idea that narcissists only want to be associated with certain kinds of announcements.
5. The SIC system was supplanted by the six-digit North American Industry Classification System in 1997. Because 1997 is in the middle of our time panel, we used the SIC system (which continued to be reported by *Ward's Directory*, our data source) for all our calculations.