

**NARCISSISM AND ITS MEASUREMENT: A CONDITIONAL
REASONING MEASURE FOR NARCISSISM**

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**NARCISSISM AND ITS MEASUREMENT: A CONDITIONAL
REASONING MEASURE FOR NARCISSISM**

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SUMMARY

Narcissism, which is broadly defined as a grandiose sense of self-importance (Judge, LePine, & Rich, 2006), is a construct that is associated with many potentially toxic traits and behaviors (Back, Schmukle, & Egloff, 2010; Hogan, Raskin, & Fazzini, 1990; Paulhus & Williams, 2002). Recently, interest in determining the effects of narcissism in organizations has increased (e.g. Blair, Hoffman, & Helland, 2008; Chatterjee & Hambrick, 2007; Judge et al., 2006; Penney & Spector, 2002).

Psychometric issues with the Narcissistic Personality Inventory (NPI; Raskin & Hall 1979, 1981) and other measures of narcissism necessitate a more robust measure that can more accurately capture the facets of a complex construct. Conditional Reasoning Tests are designed to indirectly measure implicit cognitive processes (James & LeBreton, 2011), and are especially useful in measuring “socially unacceptable” traits such as narcissism. A 20-item Conditional Reasoning Test for Narcissism (CRT-NR) was created and underwent preliminary validation testing. Results support a 15-item measure to be used in continued validation of the instrument.

CHAPTER 1

THE CONSTRUCT OF NARCISSISM

History

The term “Narcissism” is derived from a greek myth that relays the tale of a handsome young man named Narcissus who caught his reflection one day in a spring, and became so enamored of the person that he saw that he decided to reach out and try to touch the beautiful figure. Upon reaching his hand out, instead of connecting with the handsome person he saw looking back at him, he fell into the spring and drowned. His body was transformed into the flower which now bears his name (Powell, 2000).

The first noted reference to narcissism in the psychological literature was made by Havelock Ellis in 1898, when he used the term “narcissus-like” to describe a psychological attitude. One year later, Paul Näcke used the word “narcismus” to describe a sexual perversion in which one treats one’s own body as they would the body of a sexual object (Freud, 1914/1957). The study of narcissism as it relates to clinical, social, and personality psychology largely began with Freud’s work in the early 1900s, when he described narcissism as the relationship between the libido and the ego (Freud, 1914/1957). Psychoanalytic theories of narcissism provided the some of the most extensive descriptions of the construct until the early 1980s.

Psychoanalytic Theories of Narcissism

Freud (1914/1957) initially incorporated narcissism as a part of his libido theory, giving it a place in the normal course of human sexual development. He used the term narcissism to mean “self-love.” Freud discussed both “normative” and “pathological”

levels of narcissism. “Normative” narcissism tended to designate a dominant individual likely to assume leadership roles and have others rely upon him, whereas a pathological level of narcissism was associated with sexual deviance, amongst other things.

Freud believed that those with pathological narcissism were virtually incapable of creating meaningful relationships with other people. It represented a regression to a primary, infantile state of interacting with the world (Freud, 1914/1957; Maniacci, 2007), resulting in infant-like behaviors. According to Freud, pathological narcissists act like spoiled, misbehaved children who will erupt in anger and cause a scene when they don’t get what they want, and expect others to respond to their every demand while not offering any help in return. This led Freud to call the narcissist “His Majesty the Baby” to indicate his entitled, child-like relationship with the world (Freud, 1914/1957).

German psychiatrist Otto Kernberg also wrote extensively on narcissism (Kernberg, 1975, 1986, 1991), and contends that individuals with narcissistic personalities had inconsistent and empty relationships with their parents, only receiving attention from their parents in particular situations (Kernberg, 1975). Ultimately, Kernberg believed the narcissistic individual would eventually immerse himself in the exhibitionism that earned him the occasional attention from his parents, and would thrive on the attention received from others, while never fully revealing his true self. And, much like the parent from whom he so desired attention, he will give limited or inconsistent feedback or affection to those around him.

Heinz Kohut, another German psychiatrist, also developed a psychoanalytic theory of narcissism. Like Kernberg, Kohut (1971, 1972) contended that pathological narcissism is rooted in a cold, distant mother who rejected the child entirely, or merely

used him as a tool by which to earn admiration and praise from others (i.e. as her own narcissistic object). However, Kohut argues that pathological narcissism stems from a developmental arrest or disruption in the normal stages and sequences of childhood. This would most likely stem from a childhood in which a child was not appropriately “mirrored” by its mother, meaning the child was not congratulated or made to feel fulfilled or proud of developmental accomplishments (i.e. learning to walk, talk, ride a bike, etc.), and therefore become stuck in a phase in which that child will constantly be seeking affirmation from external sources.

Modern Definitions

Today, the construct of narcissism seems to have an array of definitions in circulation. There is, of course, the “narcissist” in pop culture, who is typically self-obsessed, vain, and arrogant, and will tend to act in ways that benefit one’s own self-interest. Even within the sphere of psychological research, the definition can vary from area to area, and psychologists have recently become frustrated by the inconsistencies in measuring and defining the construct across disciplines (e.g. Miller & Campbell, 2008; Pincus et al., 2009). The varying definitions of narcissism in clinical, personality, and social psychology speak to the disconnect in the understanding of the construct across fields of psychology.

Narcissism in Clinical Psychology

Clinical psychology tends to view the definition of narcissism in the context of Narcissistic Personality Disorder as defined by The Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV; American Psychiatric Association, 2000). The DSM-IV (American Psychiatric Association, 2000) states that those with Narcissistic Personality

Disorder are preoccupied with fantasies of unlimited success, believe they are special and unique, require excessive admiration, have a sense of entitlement, are interpersonally exploitative, lack empathy, and exhibit high levels of arrogance.

The DSM-IV hypothesizes that interpersonal relations are often impaired in those with NPD, largely as a result of “entitlement, the need for admiration, and the relative disregard for the sensitivities of others (American Psychiatric Association, 2000, pp. 716).” Independent of the DSM-IV criteria, research has suggested that interpersonal vulnerability, underlying emotional distress, anger, difficulty in regulating affect, and interpersonal competitiveness are also core elements of NPD (Russ, Shedler, Bradley, & Westen, 2008, p. 1473). Though not included in the official diagnostic criteria, these themes can be seen throughout the discussion of the behaviors and traits associated with subclinical narcissism in this paper, underscoring their important to the construct in spite of their exclusion from the DSM-IV. These behaviors are also commonly incorporated into discussions of narcissism in the clinical literature.

Narcissism in Social Psychology

In contrast to the taxonic or categorical view of narcissism in clinical psychology, social psychological research on narcissism tends to view the construct as dimensional, operating along a continuum on which no specific point signifies a shift from a “normal” individual to a “narcissist” (Foster & Campbell, 2007). This notion is supported by empirical research, and emphasizes that there has been little empirical evidence to back up the categorical approach (Foster & Campbell, 2007). Narcissism research in the field of social psychology often looks to determine whether movement up or down the continuum correlates with a particular behavior or set of behaviors.

Narcissism in Personality Psychology

Personality psychologists take a largely trait-based approach to narcissism, viewing it on a continuous scale that encompasses both normal and pathological narcissism. A sizeable portion of the research on narcissism done by personality psychologists has been focused on the measurement of narcissism, and on the validity and factor structure of narcissism measures. Most of the remainder of the personality research on narcissism looks for correlations or moderator relationships between the construct and myriad other personality constructs or behaviors associated with certain personality profiles.

Definition in the Present Study

In the above sections, it should be clear that the definition of narcissism varies across and even within different areas of research in the field of psychology. Given the various approaches to defining and studying the construct of narcissism across psychology, one needs to specify what “kind” of narcissism is being researched or discussed in any given exploration of the topic. For the purposes of discussing narcissism and its measurement, the “type” of narcissistic individual upon which this research will be focusing is best explicated by Kets de Vries and Miller (1985):

A certain dose of narcissism is necessary to function effectively. We all show signs of narcissistic behavior. Among individuals who possess only limited narcissistic tendencies, we find those who are very talented and capable of making great contributions to society. Those who gravitate toward the extremes, however, give narcissism its pejorative reputation. Here we find excesses of rigidity, narrowness, resistance, and discomfort in dealing with the external environment (p. 588).

Though narcissism should be viewed on a continuum, when using the term “narcissistic individual,” I am referring to an individual in the aforementioned extreme. For the purposes of this study, I define a narcissism as an excess of arrogance and an inherent

lack of empathy paired with willingness to exploit others as a means of getting what one believes he or she is entitled. It is marked by a need to dominate, control, and use others when they are necessary to move forward toward those same “entitled” goals or achievements.

The Relationship of Narcissism to other Constructs

Various studies have been conducted across numerous areas of psychology that have examined the relationship between narcissism and other constructs or behaviors. In this section, those relationships provide a more well-rounded understanding of the construct and the context in which it will be investigated in this research project will be discussed.

Narcissism and Psychopathy

Recent research has alleged that psychopathy is found at an increased rate within corporations, and more specifically within management development programs, when compared to the overall population (Babiak & Hare, 2006; Babiak, Neuman, & Hare, 2010). Incidentally, narcissism and psychopathy, along with the construct of Machiavellianism comprise the so-called “Dark Triad” of personality which constitutes a notable fraction of the research exploring toxic leadership (e.g. Conger, 1990; Hogan & Hogan, 2001; Hogan et al., 1990; Paulhus & Williams, 2002). In comparing narcissism and psychopathy, the NPI was determined to have a correlation of 0.50 ($p < .001$) with a measure of subclinical psychopathy (Paulhus & Williams, 2002). This level of correlation between the two factors suggests that they are ultimately distinct entities, but that there is some significant overlap (and perhaps comorbidity) between the two.

Relationship to Self-Esteem

Several studies have shown a positive correlation between the total score on the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979) and self-esteem (e.g. Emmons, 1987; Raskin, Novacek, & Hogan, 1991a; Raskin & Terry, 1988; Rhodewalt & Morf, 1998). However, some researchers attest that the high levels of self-report self-esteem amongst narcissistic individuals may mask low levels of implicit self-esteem (Bosson et al., 2008; Brown & Zeigler-Hill, 2004; Zeigler-Hill, 2006). More eloquently stated, some researchers suggest that the construct of narcissism is comprised of “...individuals who simultaneously entertain notions of the own grandeur while also seeking constant external affirmations of their self-concept (Samuel & Widiger, 2008, p. 364).”

Furthermore, some of the more toxic or maladaptive qualities and behaviors associated with narcissism can interfere with narcissistic self-esteem management. Narcissistic individuals thrive on external affirmation of their efforts, building up their fragile self-esteems by consistently seeking and garnering external praise, and shaping their concept of how others perceive them in order to bolster their self-image (Zeigler-Hill, 2006). Yet, oddly, common practices of narcissistic individuals include exploiting those around them in order to remain in sight of what they feel they are entitled to, and alienating others within their social or organizational circles as a result of their inability to express empathy toward others (Morf & Rhodewalt, 2001). This creates a virtually endless cycle, with narcissistic individuals drawing in new allies with their charisma and charm, only to see most of those allies abandon them once their more maladaptive behaviors and tendencies become apparent.

In trying to reconcile the paradox of possessing both a high and low self-esteem, some researchers have considered narcissism to be a form of defensive self-esteem management rather than a defined dimension of personality (Morf & Rhodewalt, 2001; Raskin et al., 1991a; Raskin, Novacek, & Hogan, 1991b). This defensive self-esteem management focuses on social desirability and a need for approval, and results in defensive self-enhancement marked by grandiosity (Morf & Rhodewalt, 2001). In engaging in this process, they “encounter the reality of failures and social disconfirmation from others who do not always share narcissists’ high opinion of themselves (Morf & Rhodewalt, 2001, p. 179).” In order to continue to see themselves in the best possible light, the narcissistic individuals will inflate their own opinions of themselves in order to ward off negative feedback.

Social Comparison

The responses and reactions to social interactions and social comparison have been shown to be moderated by narcissism in multiple studies (Bogart, Benotsch, & Pavlovic, 2004; Horton & Sedikides, 2009; Rhodewalt, Madrian, & Cheney, 1998). Rhodewalt et al. (1998) found that narcissistic individuals showed more extreme variation and reactivity in self-esteem, especially in the face of negative social interactions.

A further investigation of the relationship between narcissism and social comparison found that individuals with high scores on the NPI displayed more “amplified” responses to social comparison than others (Bogart et al., 2004), showing greater positive affect as a result of downward social comparisons, and greater hostile affect as a result of upward comparisons. The authors noted that the effects were larger

for positive affect and downward comparisons than for hostile affect, and suggest that downward social comparison may be used as a self-regulatory process to bolster self-esteem or engage in self-enhancement. This idea supports a theory promoted by Festinger (1954), suggesting that social comparison is more prevalent among those who feel threatened, uncertain, or fragile, while also underscoring the idea that narcissistic individuals struggle with “feeling superior but threatened (Bogart et al., 2004, p. 35).”

Narcissistic Rage

The fragile self-images of narcissistic individuals are very easily threatened, and they have a near-constant concern that others will get in the way of what they feel they deserve, often responding to any perceived threat to their self-image in an extremely overstated way. Kohut (1972) and others have called this tendency to overreact “narcissistic rage,” which is characterized by hostility, extreme anger, and hypersensitivity (Horowitz & Arthur, 1988; Kernberg, 1986; Kohut, 1972).

Kohut (1972) notes that narcissistic rage is, “From the point of view of social psychology...clearly analogous to the fight component of the fight-flight reaction with which biological organisms respond to attack (p. 379).” More specifically, he notes that narcissistic individuals respond to narcissistic injury (i.e. perceived ego threats) with either withdrawal (the flight response) or narcissistic rage (the fight response). In engaging in the fight response, a narcissistic individual will become enveloped by narcissistic rage, stopping at nothing to achieve retribution. Kohut notes that narcissistic rage is a distinct reaction amongst the range of human aggression (Kohut, 1972, p. 380).

The phenomenon of narcissistic rage can have significant ramifications in social interactions and relationships. In the realm of leadership specifically, narcissistic

individuals are prone to being “intensely, vengefully hostile as an exaggerated response to an insult,” and have no crisis of conscience in reacting to a threat with a cruel, over-the-top rebuttal (Horowitz & Arthur, 1988, p. 136). According to Horowitz and Arthur (1988), the situations or comments that more often trigger those reactions are likely to be those that, in the eyes of the narcissistic leader, threaten the powerful and grandiose self-concept of the leader, or those in which the leader may think others will frame him or her as having been victimized, potentially causing the leader to appear weak in the face of a hostile aggressor. Moving into a state of narcissistic rage will allow the narcissistic leader to become the aggressor, shifting his or her potential position in the situation from weak to strong (Horowitz & Arthur, 1988).

In this state of rage, the narcissistic leader also manages to satiate some of the needs associated with his or her narcissism, including dominance, attention, and possibly praise. Horowitz and Arthur (1988) further note that the leaders may “...Freely express fierce and brutal, but pleurably exciting, hostility. The pleasure is an assumption of dominance over a dehumanized other, a pleasure heightened by feelings of...exhibition of the self to that critic (or group) to gain attention, admiration, and praise (p. 137).”

Empathy

The diagnostic criteria for Narcissistic Personality Disorder in the DSM-IV (American Psychiatric Association, 2000) include a notable “lack of empathy.” Studies exploring the relationship between narcissism and empathy have largely found an inverse relationship between the two constructs (Munro, Bore, & Powis, 2005; Watson, Grisham, Trotter, & Biderman, 1984; Watson & Morris, 1991). High total scores on the NPI (which are said to be indicative of high levels of trait narcissism) showed an inverse

relationship with two of three measures of empathy, predicted lower levels of “empathetic concern” (Watson & Morris, 1991). There is also initial support for the idea that narcissism shows an inverse relationship with professional ethical behavior (Munro et al., 2005).

When the NPI factors were parsed, scores on the more “maladaptive” or “dark” factors of narcissism (exploitativeness and entitlement, discussed at length later in this paper) were negatively related to feelings of social responsibility and showed an inverse relationship with all three measure of empathy, while the more “prosocial” factors (leadership and authority, also covered in later sections) showed a positive relationship with social responsibility (Watson & Morris, 1991).

Risk-taking

Narcissism has been linked with increased risk-taking (Campbell, Goodie, & Foster, 2004; Foster, Shenese, & Goff, 2009), with increased engagement in risky behaviors like aggressive driving (Britt & Garrity, 2006), gambling (Lakey, Rose, Campbell, & Goodie, 2008), or business decisions (Chatterjee & Hambrick, 2007), and with traits that tend to be associated with risk-taking, like impulsivity (Miller et al., 2009; Vazire & Funder, 2006).

Many researchers agree this increased risk-taking in narcissistic individuals is associated with somewhat deficient decision-making, noting that overconfidence on the part of the narcissistic individual will lead to increased risk-taking behavior (Campbell, Goodie, et al., 2004). Others suggest that narcissistic individuals tend to be focused on rewards or payoffs, and will bias the decision-making process, which interferes with an accurate estimation of the likelihood of a payoff or reward versus a loss (Lakey et al.,

2008). Still others suggest that narcissistic individuals are fully aware of the risk and likelihood of success or payoff in a situation, but are fueled by their perception of the benefits that may be derived from taking the risk (Foster et al., 2009). In this line of thinking, narcissistic individuals do not engage in risky behaviors because they are unaware or uninformed about the consequences of risky behaviors, but rather because they cannot resist the payoff or reward that taking the risk could possibly bring, even if the odds are narrow.

Reactions to Success and Failure

Rhodewalt and Morf (1998) measured the responses of high-narcissism individuals and low-narcissism individuals (as identified by the NPI) to success and failure on a series of tests that they believed to be part of an IQ measure. Each participant received feedback based on “success” on one test and feedback based on “failure” on another. Narcissism level was found to be a moderator for the effects of the success-failure feedback.

Overall, the high-narcissism individuals responded with more extreme fluctuations in mood, most notably in anger and anxiety. Additionally, the high-narcissism individuals showed greater changes in self-esteem as a result of perceived success or failure. Attributions of success and failure were also captured, and the high-narcissism individuals were more likely to make internal attributions regarding ability when met with success, while making attributions similar to those of the low-narcissism individuals when faced with failure (Rhodewalt & Morf, 1998).

In the same vein, those with higher scores on the NPI were likely to perceive an evaluator as being more competent and the feedback process as being more diagnostic

when given positive feedback regarding their nonverbal cues during a presentation (Kernis & Sun, 1994). Those with high narcissism scores given negative feedback on nonverbal cues perceived the evaluator as being less competent and likeable, and the feedback process as being less diagnostic. Furthermore, the perceived status of the evaluator influenced the response of narcissistic individuals to insults or ego threat (Horton & Sedikides, 2009), with narcissistic individuals using more indirect methods of self-esteem preservation (e.g. discounting the test or instrument used rather than the evaluator) when insulted by a high-status evaluator than when insulted by a low-status evaluator.

Self-Enhancement, Self-Estimated Abilities, and Overclaiming Behavior

Narcissistic individuals have shown a propensity for inflating self-estimated abilities, showing overconfidence in various abilities (Ames & Kammrath, 2004; Campbell, Goodie, et al., 2004; John & Robins, 1994). One particularly creative study found that narcissism predicted the self-estimated mind-reading abilities of participants much more accurately than any actual competence in mind-reading (Ames & Kammrath, 2004). John and Robins (1994) found that individual differences in narcissism predicted relative self-enhancement in performance ratings after a group discussion as compared to the ratings of group members and uninvolved staff psychologists. In another study conducted using beach patrol employees, scores on narcissism measures significantly and positively predicted self-ratings of leadership potential in a multivariate regression, but significantly and negatively predicted ratings of leadership from fellow employees (Judge et al., 2006), further supporting the idea that narcissism can be related to a somewhat inaccurate belief in one's own abilities.

Campbell, Goodie, & Foster (2004) asked study participants to rate their confidence in each their answers to a general knowledge questionnaire. The authors compared narcissism levels to overconfidence, which referred to “an inflated subjective probability of particular outcome occurring (Campbell, Goodie, et al., 2004, p. 299). Narcissism ultimately served as a significant predictor of overconfidence, which was measured by the extent to which the confidence of participants outweighed their overall accuracy.

Over-claiming, which goes beyond overconfidence and is defined as “the tendency to claim knowledge about non-existent items (Paulhus, Harms, Bruce, & Lysy, 2003, p. 891),” has also shown a strong relationship with narcissism. In fact, narcissism was one of the best predictors of scores on the Over-Claiming Questionnaire, a measure of over-claiming, to the extent that the construct was used in the validation of the measure (Paulhus, 2011; Paulhus et al., 2003). When told in advance that a number of items on an over-claiming measure did not exist, claims of knowledge about those topics fell dramatically (vs. the condition where this fact was not revealed) except in those who scored highly on a narcissism measure (Paulhus et al., 2003). Overall, over-claiming shows a robust and consistent relationship with narcissism in various conditions (Paulhus, 2011).

CHAPTER 2

MEASURES OF NARCISSISM

The Narcissistic Personality Inventory

Since the 1980s, the most widely-used measure of narcissism has been the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979, 1981). In fact, between 1985 and 2008, “the NPI was used as the main or only measure of narcissistic traits in approximately 77% of social/personality research on narcissism (Cain, Pincus, & Ansell, 2008, pp. 642-643).” Developed by Raskin and Hall in 1979 and validated in 1981, the NPI is a dichotomous forced-choice self-report measure that initially contained 54 items. Items ask test takers to choose between two statements (e.g., “I just want to be reasonably happy” or, “I want to amount to something in the eyes of the world”). Responses to each item are scored as either “narcissistic” or “non-narcissistic” based on an item key (Raskin & Hall, 1981).

In 1988, Raskin and Terry created a 40-item version of the measure that was more parsimonious than the original 54-item version while maintaining its originally hypothesized factor structure. The NPI-40 is the most common form of the test used today, having even been published in mainstream publications such as “USA Today” (Jayson, 2009).

The NPI has been shown to be effective in measuring narcissism levels, especially within a subclinical population (Ames, Rose, & Anderson, 2006; Raskin & Hall, 1981; Raskin & Terry, 1988; Watson et al., 1984). Several short-form versions of the NPI have been validated in recent years (Ames et al., 2006; Daig et al., 2010; Svindseth et al.,

2009). However, these shorter form versions do not have the capability of capturing or reporting the scores on subscales contained in the more popular factor models of the NPI.

NPI factor structure

There are several models of the factor structure of narcissism as measured by the NPI (e.g. Ames et al., 2006; Corry, Merritt, Mrug, & Pamp, 2008; Daig et al., 2010). The two most popular models in the narcissism literature are a 4-factor model outlined by Emmons (1984, 1987) and a 7-factor model proposed by Raskin and Terry (1988).

Emmons (1984, 1987) supported a 37-item form of the NPI that closely resembles the NPI-40. His model outlines four central factors: Exploitativeness/Entitlement, Leadership/Authority, Superiority/Arrogance, and Self-absorption/Self-admiration (Emmons, 1984). Emmons (1984) described Exploitativeness/Entitlement as measured “expectation of favors and exploitation of others” (p. 292). Leadership/Authority measures the extent to which a person enjoys being in charge and being viewed as an authority figure by others (Emmons, 1984). Superiority/Arrogance measures the underlying feelings of grandiosity and dominance over others, while Self-absorption/Self-admiration looks at a person’s level of physical infatuation with him or herself (Emmons, 1984).

Raskin and Terry (1988) believed that Emmons used selection criteria that were too conservative in determining an NPI factor structure. Their model outlines 7 components of narcissism as measured by the NPI-40: Authority, Self-Sufficiency, Superiority, Exhibitionism, Exploitativeness, Vanity, and Entitlement. Their results supported the hypothesis of a weak general factor and seven “relatively interdependent components (p. 899).” However, these seven factors did not exhibit levels of internal

consistency that many would deem to be acceptable in fully supporting the model (Corry et al., 2008; Pincus et al., 2009; Raskin & Terry, 1988), with Vanity and Superiority showing especially low correlates with observational and self-report criteria (Raskin & Terry, 1988).

With this reenergized interest in narcissism in the field of industrial and organizational psychology and personality psychology, several researchers have expressed their displeasure with the continued use of the NPI in narcissism research (Blais & Little, 2010). With regard to the NPI-40, even the authors themselves stated, “Although we believe that we have made a reasonably good start in developing a measure of narcissism, we do not believe that the current item pool of the NPI accounts for all of the psychological themes and behavioral dimensions that are central to narcissism (Raskin & Terry, 1988, p.900).” The authors go on to suggest that more items needed to be created and incorporated to better address the various dimensions of narcissism and the domain of behaviors. To date, no new items have been added to any version of the NPI.

Other Measures of Narcissism

There are few other measures of narcissism that are used frequently in the research. The Narcissistic Personality Disorder Scale (NPDS: Ashby, Lee, & Duke, 1979) focuses on capturing the “maladaptive” side of narcissism (Ashby et al., 1979; Wink, 1991). In three studies examining the relationship between the NPI and NPDS (Emmons, 1987; Mullins & Kopelman, 1988; Watson et al., 1984), little correlation was found ($r=.12$, $r= -.09$, and $r= -.04$, respectively). Though the NPDS was used in conjunction

with the NPI with some frequency in the 1980s, it has become increasingly rare in the literature.

The Pathological Narcissism Inventory (PNI; Pincus et al., 2009) is a new measure of narcissism that was developed to aid in filling the void of instruments specifically designed to measure the pathological elements of narcissism, especially in a clinical setting. Though the PNI is designed to strictly measure pathological narcissism, initial research on the instrument seems to align with other more recent findings regarding the NPI. More specifically, the maladaptive content of the measure is limited to factors related to items linked to exploitativeness and entitlement, and that the rest of the measure largely “assesses nondistressed adaptive expressions of the construct (Pincus et al., 2009, p. 366).” Those “adaptive expressions” of narcissism include psychological adjustment, interpersonal dominance, and aggression.

The Psychological Entitlement Scale (PES; Campbell, Bonacci, Shelton, Exline, & Bushman, 2004) was created in order to improve the assessment of the “entitlement” facet of narcissism. Test-takers are asked to respond to statements such as, “Great things should come to me,” and, “If I were on the Titanic, I would deserve to be on the *first* lifeboat!” (Campbell, Bonacci, et al., 2004). High scores on the PES were linked to patterns of “selfish and self-serving beliefs and behaviors (p.43),” and were generally viewed as being a negative quality when seen in high levels. The authors note the potential benefit of the use of the PES in the context of workplace functioning and organizational justice, and also its more broad benefit to social, personality, and developmental psychology research.

CHAPTER 3

THE “DARK SIDE” OF NARCISSISM VS. “PRODUCTIVE NARCISSISM”

More recently, a debate weighing the “good” versus the “bad” in the realm of subclinical narcissism has arisen in the literature. Some argue for the idea of “productive narcissism,” pointing to the innovation, risk-taking, charisma, and ambition of narcissists as something that may have a negative effect on interpersonal relationships, but can be beneficial to groups, networks, or society as whole (Harrison & Clough, 2006; Maccoby, 2007). Others argue that narcissists operating as truly “good” leaders tend to be the exception rather than the rule, and that those in the social circles of narcissists suffer greatly as a result of the narcissist’s lack of empathy, propensity to erupt in “narcissistic rage,” and willingness to exploit or harm others in order to maintain a positive self-image (Horowitz & Arthur, 1988). Those in the latter group would consider many narcissistic behaviors to be “toxic” or maladaptive (Conger, 1990; Hogan & Hogan, 2001; Resick, Whitman, Weingarden, & Hiller, 2009; Watson & Morris, 1991) and would likely question the concept of “Productive Narcissism.”

Toxic Behaviors and the Exploitativeness/Entitlement Factor(s)

Research using factors derived from the NPI has suggested that the most “toxic” factors are the Exploitativeness and Entitlement factors of the Raskin and Terry model, and the combined single factor of Exploitativeness/Entitlement under the Emmons model of the NPI. Raskin and Novacek (1989) note that the most psychological maladjustment was found in factors related to Entitlement, Exhibitionism, and Exploitativeness, with all three showing strong correlations with a general measure of maladjustment.

Watson and Morris (1991) found that Emmons' Exploitativeness/Entitlement factor was the only trait determined to be broadly maladaptive (Leadership/Authority was "somewhat prosocial," whereas Superiority/Arrogance and Self-admiration/Self-absorption were relatively ambiguous). More specifically, Exploitativeness/Entitlement was determined to be associated with greater Personal Distress and anxiety, was inversely related to levels of Social Responsibility, and showed an inverse relationship with Social Desirability and Perspective Taking. The latter finding led the researchers to suggest that the Exploitativeness/Entitlement factor "might offer another indication of the antisocial nature of some narcissistic tendencies (Watson & Morris, 1991, p. 578)."

Productive Narcissism

Freud (1914/1957) explained that a narcissist's expectation of success and belief that he or she should receive what they feel they deserve will often translate into real success. A person high in narcissism has a prepotent need to be dominant over others, and to gain authority in order to prove oneself (Harrison & Clough, 2006; Paunonen, Lonngqvist, Verkasolo, Leikas, & Nissinen, 2006). As noted by Kets de Vries and Miller (1985), "If there is one personality constellation to which leaders tend to gravitate, it is the narcissistic one (p.586)." Research supports this idea, finding that those with high overall scores on the NPI do often ascend to leadership positions (Blair et al., 2008; Brunell et al., 2008; Chatterjee & Hambrick, 2007; Rosenthal & Pittinsky, 2006). Some researchers for the existence of a "productive narcissist" whose need for reaffirmation and admiration leads them to excel in certain areas, and to achieve effective leadership (Harrison & Clough, 2006; Maccoby, 2007).

Many suggest the leadership/authority factor in the four-factor model of the NPI (Emmons, 1984, 1987) or the Authority factor in the seven-factor model (Raskin & Terry, 1988) reflects the least maladjustment of any of the factors associated with the construct (Raskin & Novacek, 1989; Watson & Morris, 1991), and can possibly be a positive attribute in situations. The leadership/authority factor of the NPI has been linked to personality characteristics that are typically viewed as being positive traits in leadership roles, such as extraversion, dominance, warmth, social responsibility, and social boldness.

Maccoby (2000) outlines two specific characteristics of “productive narcissists” that aid them in leadership: they tend to be visionaries, and their vision enables them to inspire a number of followers. Their ability to articulately enumerate upon their ideas, innovations, and visions coupled with apparent self-confidence and seeming superiority give narcissistic individuals the element of “charisma” they are often labeled as possessing (Maccoby, 2000; Paunonen et al., 2006; Rosenthal & Pittinsky, 2006). Because they eloquently convey so much passion for their ideas, sometimes the quality of the actual content in those ideas, plans, and agendas are be ignored by the audiences, simply because of the manner in which the idea was presented, especially when one does not know the individual particularly well (Back et al., 2010).

Maccoby (2000) argues that there are times that the perceived confidence levels and charisma of narcissists can be beneficial to a group. Narcissists show patterns of risk-taking that can often spur innovation, vision, and definitive action (Morf & Rhodewalt, 2001). In addition to historical figures such as Alexander Hamilton, the cases of several modern-day CEOs such as Bill Gates of Microsoft, the late Steve Jobs of

Apple, David Geffen of Geffen Records and DreamWorks, and Jack Welch of GE are frequently used as examples of productive narcissists (Maccoby, 2000; Rosenthal & Pittinsky, 2006).

Do Toxic Behaviors Outweigh Potential Benefits?

Initial research exploring negative outcomes of narcissistic leaders for both the leaders themselves and for organizations as a whole (Hogan & Hogan, 2001) stands to support the idea that in the majority of cases, the inherent risks in having a narcissistic individuals lead within an organization are not offset by the potential for “Productive Narcissism.” This claim is supported by numerous investigations of the consequences of narcissism in the workplace and of narcissistic leadership. In the last decade, high levels of narcissism have been found to be associated with risky and/or volatile decision-making and performance levels (Chatterjee & Hambrick, 2007), the tendency to underperform when no opportunity for glory or praise exists (Wallace & Baumeister, 2002), resource destruction (Campbell, Bush, Brunell, & Shelton, 2005), two types of cheating (Brown, Budzek, & Tamborski, 2009), and, perhaps not surprisingly, with some white-collar crimes (Blickle, Schlegel, Fassbender, & Klein, 2006), with narcissism having seen a surge of recent interest in predicting fraud risk among auditors (E.N. Johnson, personal communication, August 20, 2011; Johnson, Kuhn, Apostolou, & Hassell, 2011).

It is important to establish that while productive narcissism may exist, it is more often the exception to the rule. Narcissistic leaders are more frequently linked with potentially toxic behaviors than with positive ones, and any tool designed to measure narcissism needs to approach the construct from a holistic perspective that does not discount negative, toxic, or maladaptive behaviors in light of any “productive” outcomes.

CHAPTER 4

THE NEED FOR NEW MEASURES OF NARCISSISM LEVELS

The inherent flaws in the Narcissistic Personality Inventory have been highlighted in this paper. In the absence of a superior measure, an instrument that was criticized by one of its own authors as being underequipped to fully assess a construct as complicated as narcissism (Raskin & Terry, 1988) has served as the go-to measure of the construct for 30 years. Though the Pathological Narcissism Inventory (PNI; Pincus et al., 2009) represents a step forward in measuring narcissism and fills a great need in the area of clinically-relevant measurement tools, it is designed to measure pathological narcissism, still leaving a great need for a new measure of subclinical narcissism levels.

The Importance of an Assessment Tool for Organizations

There are a number of potential benefits for organizations in having a more comprehensive measure of narcissism available for use in an assessment context. Examples of situations in which an understanding of the behavior patterns associated with a narcissistic leader or individual within an organization within the specific organizationally relevant areas of selection, training, and succession planning are discussed below. Given the lack of research in this area, these examples are purely hypothetical and by no means comprehensive, representing just a few examples of situations in which the results of a more comprehensive narcissism measure could be useful.

Selection and Training

Selecting and training the right people for the right roles necessitates a large part of the continued existence of industrial and organizational psychology. The research on

narcissism suggests that the presence of the construct would be a useful piece of information to an organization that is considering hiring or has just hired a narcissistic individual. Given that any “dark side” behaviors are rarely seen in early interactions (Back et al., 2010), it is likely that Human Resources and other individuals involved in the hiring process are either completely or mostly unaware of the presence of the construct in an applicant or brand new hire.

With the controversy surrounding the NPI and its lack of any evidence of predictive validity in an organizational setting, it would be ill-advised to use the measure as a “select-out” instrument. Because it often necessitates using a total score rather than gaining information about the presence or absence of specific factors and their associated behaviors, would be of limited relatively useless tool in designing onboarding and training programs for new hires.

Whether used as a “select-out” measure for those scoring highly on the “maladaptive” pole of narcissism, or for reasons related to employment law, used as a measure to cater training and onboarding initiatives to try to prevent future problem behaviors, or if only to serve as an alert to the potential for maladaptive and toxic behaviors down the road, a more directly validated, comprehensive measure of subclinical narcissism needs to be created. An awareness of the presence of a potentially toxic trait in an individual or leader that can have ramifications throughout an organization can at least give an organization the opportunity to test out intervention strategies that have been shown to be useful in some other populations (e.g. Thomaes, Bushman, Orobio de Castro, Cohen, & Denissen, 2009).

Succession Planning

It would seem absolutely essential that a Board or other high-ranking group be aware of the presence of maladaptive narcissism in any leader they may consider as a candidate for a role with even greater leadership responsibility. Even if the pattern of behaviors associated with narcissism does not overshadow the individual's potential contributions in a leadership role in the mind of the Board or group, the promotion of a potentially toxic narcissistic individual may give rise to the necessity of a reorganization of the group or company in order to minimize the toxic impact of the narcissistic individual. For example, in rehiring CEO Steve Jobs, alleged by many to be a narcissistic individual (Maccoby, 2000; Rosenthal & Pittinsky, 2006), it is rumored that Apple reorganized the company in such a way that most of the organization reported in to the COO, rather than into Jobs himself, thereby limiting the interactions between much of the leadership team to larger meetings and reducing one-on-one exchanges with Jobs. This allowed Jobs to display his characteristic charisma to the masses, while only having to maintain more intimate working relationships with a few employees at Apple.

The usefulness of a measure of narcissism in high-level succession planning would also present itself at any level of an organization if a narcissistic individual is *not* selected to be promoted to the next level of leadership. Because of a strong sense of entitlement, if the lack of the promotion is viewed as an ego threat, narcissistic behaviors including narcissistic rage may not be far behind. Again, the knowledge of this possibility gives an organization the ability to try to prepare for any potential repercussions, and work to prevent the narcissistic individual from engaging in any toxic behaviors such as aggression or hostility, or to prevent that individual from leaving his or her current role as

a result of interpreting a lack of promotion as a narcissistic injury (if that's the outcome that's preferred).

Toward a New Measure of Narcissism

Overall, narcissism is largely considered to be a socially unacceptable trait. An excessive sense of entitlement, a willingness to exploit others, and feelings of superiority and grandiosity are generally looked upon as unsavory character traits. Much like the case of aggressive individuals, while some narcissistic individuals may openly admit to and discuss their narcissism, many will try to rationalize or “protect” their behaviors through the use of justification mechanisms (Frost, Ko, & James, 2007; James, 1998; James, McIntyre, Glisson, Bowler, & Mitchell, 2004). The fact that most people would be unwilling to label themselves as narcissistic individuals as defined in this paper supports the idea that an implicit measure may be more effective in capturing and measuring the construct, especially amongst those who do not believe themselves to be narcissistic consciously, but engage in narcissistic behaviors every day.

The argument for an implicit measure of narcissism is further underscored by the finding that narcissistic individuals may exhibit high explicit self-esteem and low implicit self-esteem (Zeigler-Hill, 2006). The hypothesized disparity between implicit and explicit self-esteem in narcissistic individuals may extend to other areas that have yet to be explored, making it important to further investigate other facets of the construct where differences in implicit and explicit functioning may exist.

Furthermore, the evidence that suggests that narcissistic individuals are able to carefully manage the impressions they make upon others (Back et al., 2010) can lead to an excellent ability mask any dark tendencies in interviews and other explicit methods of

assessment (such as self-report measures). That same ability to impress others during initial interactions could translate to an ability to engage in a socially desirable response pattern on an explicit personality measure to ensure they are perceived in a positive light by a potential employer.

Given the potential importance of the implicit drives, self-esteem, and personality traits of a narcissistic individual, and taking into account the continued questions about the use of self-report personality measures in personnel selection contexts (for a detailed analysis, see Morgeson et al., 2007), an implicit personality measure may reflect the best course of action in working to create a more comprehensive instrument to capture the construct. Freud (1914/1957) emphasized the importance of the unconscious in understanding drives and motives in the narcissistic personality, and it would be fitting to bring the construct nearly full circle with a valid implicit measure that taps into the influence of the unconscious.

Conditional Reasoning Tests

Conditional Reasoning Tests are measurement systems designed to indirectly assess implicit cognitive processes involved in various personality constructs (see James & LeBreton, 2011). Although they are designed to assess personality, Conditional Reasoning Tests are disguised as reasoning or “logic” tests through the use of word problems. The measures are created to lack face validity in order to reduce the potential influence of erroneous self-perception, bias, socially desirable responding, or faking (see Ellingson, Sackett, & Hough, 1999; Nisbett & Wilson, 1977; Rosse, Stecher, Miller, & Levin, 1998; Zickar & Robie, 1999). Although Conditional Reasoning Tests represent a relatively new method of trait measurement, several recent articles have included

comments about the usefulness and potential of Conditional Reasoning measures (Berry, Sackett, & Wiemann, 2007; Kanfer, 2009; Landy, 2008; Morgeson et al., 2007; Ones, Dilchert, Viswesvaran, & Judge, 2007). Scholars in the field seem to agree that at the very least, Conditional Reasoning represents a viable measurement technique with desirable psychometric properties, serving as a possible alternative to traditional self-report measures.

The Conditional Reasoning Test for Aggression (CRT-A; James, 1998) is the most scientifically established Conditional Reasoning Test, and is particularly relevant in this review as it measures a “toxic” or “socially unacceptable” construct. Though aggression can be exhibited in many different ways, the CRT-A examines the extent to which aggressive actions and responses to situations are viewed as rational by an individual (Bergman, McIntyre, & James, 2004). Similarly, even though narcissism can be exhibited in different ways, it is expected that narcissistic individuals often see their pattern of responses to various situations as rational behaviors. These behaviors are rationalized through the use of justification mechanisms.

The term “justification mechanisms” was first proposed by James (1998). Justification mechanisms (JMs) are described as “...implicit predispositions that direct seemingly logical ways of framing and reasoning that are in fact biased and serve rationalizations by making the rationalizations seem reasonable and sensible (James & LeBreton, 2011, pp. 28-29).” For reference, the JMs associated with the CRT-A are presented in Appendix 1. JMs present an important understanding of the biases inherent in processing information. They allow others to recognize, for example, the way an

aggressive individual reasons, by emphasizing that he or she is more likely to frame responses and decision-making through the prism of a particular bias (James, 1998).

The fact that narcissistic individuals continue to exhibit the same behavior patterns repeatedly suggest that like aggressive individuals, narcissistic individuals are also rationalizing their behavior, and there are likely justification mechanisms related to the construct that underlie those behaviors. Conditional Reasoning Tests are especially adept at capturing the JMs and mental processes behind the behavior associated with a particular construct (James, 1998). This ability makes a Conditional Reasoning test a particularly attractive medium for a new measurement of narcissism.

Justification Mechanisms for Narcissism

It can be surmised that much like aggressive individuals, narcissistic individuals possess internal mechanisms that frame the world in such a way that they are also able to reconcile behavior that they (and the rest of society) may otherwise categorize as unacceptable. It is likely that many of the biases inherent in the rationalization of narcissistic behavior are closely related to some of the terms seen repeatedly throughout this paper such as Exploitativeness, Entitlement, Arrogance, Authority, Narcissistic Rage, Grandiosity, and Vulnerability, among others. In this early analysis of the implicit motives associated with narcissism, I will propose 4 justification mechanisms for narcissism that are based on the factors of narcissism as determined by various analyses of narcissism measures. These JMs represent an initial attempt at uncovering the underlying rationale for narcissistic behaviors, and may not be supported by future research exploring narcissism.

Hostile Attribution Bias

Perhaps one of the best-known examples of a JM is the hostile attribution bias, which is categorized as a JM for aggression that represent a “tendency to see malevolent intent in actions of others (James et al., 2004, p. 275).” Aggressive individuals utilizing the hostile attribution bias will be able to rationalize their aggressive behaviors toward others because they will believe they are responding to the malicious intent of those they are aggressing toward, whether that unsavory intent existed or not in reality. This view of the inherent intentions of others allows aggressive individuals to justify behaving in an aggressive way in interacting with the rest of the world.

Like aggressive individuals, narcissistic individuals also possess a tendency to see a malicious intent in others that is aimed toward taking away what the narcissistic individual believes is rightly theirs. Just as it does with aggressive individuals, the idea that others are “out to get them,” rationalizes the use of toxic behaviors in order to prevent or head-off perceived attempts to thwart a narcissistic individual’s efforts. Hostile Attribution Bias would allow for the exploitation of others and the use of narcissistic rage when necessary.

Insignificant Others Bias

Going all the way back to Freud, narcissistic individuals have been repeatedly characterized as people who believe they have been and always will be truly superior to other people (Bogart et al., 2004; Freud, 1914/1957). This bias allows them to see any poor treatment of others as reasonable, given their superior status among the human race, and also justifies their belief that they are more capable of leading people than others (e.g. Emmons, 1987; Raskin & Terry, 1988). Insignificant others bias effectively gives them carte blanche to act unkindly toward others – especially subordinates and those of a

lower social or socioeconomic standing – as the feelings and outcomes associated with mistreating or being abusive toward inferior beings has no real bearing on the narcissistic individual’s future. In other words, they can engage in narcissistic behavior because “people that aren’t as good as me don’t matter.” This bias is somewhat related to the Potency Bias JM for aggression, which causes aggressive individuals to see the world in terms of dominant and submissive others (James & LeBreton, 2011; James et al., 2004), with narcissistic individuals instead seeing superior and inferior others.

Self-Image Maintenance Bias

This bias is related to the “Retribution Bias” JM for Aggression, which justifies aggression as a response to humiliation (James & LeBreton, 2011). In measuring their self-worth and self-esteem, narcissistic individuals place great importance on their self-image in the eyes of others (Bosson et al., 2008; Zeigler-Hill, 2006). Because of the importance of their understanding of the way they are perceived by others, narcissistic individuals often respond to even minor perceived insults with narcissistic rage (Horowitz & Arthur, 1988). Narcissistic individuals rationalize these over-the-top responses to perceived slights with their belief that a retaliation or rebuttal may restore them to their former status in the eyes of others, or maintain their image of superiority. This allows them to justify their “rage” based behaviors through the belief that the outburst was necessary and appropriate in defending their reputations.

Exploitation Bias

Related to the factors of exploitativeness and entitlement, Exploitation Bias justifies the exploitation of others in pursuit of a goal. Because narcissistic individuals frequently behave in ways that contribute to working toward a lofty endgoal and often

lack empathy (Munro et al., 2005; Watson et al., 1984; Watson, Little, Sawrie, & Biderman, 1992), they often have no real qualms with exploiting, using, or hurting others in order to achieve an endgoal (Watson & Morris, 1990, 1991). Narcissistic individuals are able to frame others as meaningless pawns in an elaborate game of chess, and can rationalize the exploitation of others through the notion that pawns need often need to be sacrificed in order to win the game. By viewing others as means to an end, a narcissistic individual can rationalize treating them in any way that is necessary in order to achieve victory. This bias is distinct from Insignificant Others bias, in that it acknowledges the active importance of another person in achieving a particular goal, and leads the narcissistic individual to justify utilizing that individual in any way that is necessary to attain an achievement. In this bias, the end justifies the means.

CHAPTER 5

PRESENT RESEARCH QUESTION AND HYPOTHESES

In reviewing the literature on the construct of narcissism and on measures of narcissism, two things become clear: 1) narcissism is an important trait to measure, and may be especially relevant to organizations, and 2) the NPI is inadequate for comprehensively measuring narcissism levels across the entire spectrum of the trait, from the level of almost nonexistent to clinically diagnosable. In light of these findings, a new Conditional Reasoning Measure for Narcissism will be created, and initial validation of this measure will occur.

Though overt narcissism has a consistent pattern that allows the well-trained observer to spot it quickly, behavioral criterion measures of narcissism are harder to come by, as extended observation of behaviors and behavioral outcomes may be necessary. The lack of a clear, consistent behavioral criterion to measure necessitates the use of existing measurement instruments to gauge levels of narcissism in this initial validation. The research on the measurement of narcissism was extensively reviewed in determining which instruments should serve as criterion measures. Ultimately, narcissism showed some of the strongest predictive power in studies that utilized self-enhancement/overconfidence, and in those that examined over-claiming. In turn, methods that capture both self-enhancement/overconfidence and over-claiming will be used. The NPI will also be incorporated as a measure of construct-related validity.

Hypotheses

This study involves the creation of 20 CRT-NR items, which will be administered to participants along with a measure that captures general knowledge or problem-solving,

one that measures over-claiming, one that measures entitlement, and the NPI. The general knowledge measure is a practice measure for the admission exam for Mensa, a “high-IQ society,” and much like those in the study conducted by Campbell, Goodie, and Foster (2004), participants will be asked to rate their confidence in their responses, and to estimate their final scores on the Mensa workout test.

Hypothesis 1a: Because narcissism has frequently shown a positive correlation with increased self-estimated abilities and self-enhancement/overconfidence (Ames & Kammrath, 2004; Campbell, Goodie, et al., 2004; John & Robins, 1994), *it is hypothesized that CRT-NR scores will show a positive correlation with the estimated score on the Mensa Workout Test.*

Hypothesis 1b: It is further hypothesized that narcissism will show an *inverse correlation with the ratio that measures the difference between actual score and estimated score* (i.e. those with higher scores on narcissism measures will show a larger negative discrepancy between actual score and estimated score).

The measure designed to capture over-claiming has been tested against narcissism levels numerous times (Paulhus, 2011; Paulhus et al., 2003). The measure consistently shows a positive correlation with narcissism levels (Paulhus, 2011; Paulhus et al., 2003).

Hypothesis 2: Because narcissism has repeatedly been shown as a strong predictor of scores on measures designed to capture over-claiming (Paulhus, 2011; Paulhus et al., 2003), *it is hypothesized that CRT-NR item and total scores will show a strong positive correlation with scores on the Over-claiming Questionnaire (OCQ; Paulhus et al., 2003), a measure of over-claiming behavior. More specifically, CRT-NR scores will show a strong positive correlation with the OCQ Exaggeration Index.*

The NPI will also be used in this study as a measure of construct-related validity, in order to gage the relationship between the CRT-NR and the NPI. It will also be used as a way to indicate whether the measure of over-claiming and the measure of self-enhancement or overconfidence are both behaving as they have in previous studies regard to their relationship with the NPI.

Hypothesis 3a: Because implicit and explicit measures of the same construct often display a relatively weak correlation (see Frost et al., 2007; McClelland, Koestner, & Weinberger, 1989) it is hypothesized *that CRT-NR scores will show a weak positive correlation with participant NPI scores.*

Hypotheses 3b: The NPI will show correlations with the other two measures that are reflective of previous findings regarding the NPI and self-enhancement/overconfidence and over-claiming (see Campbell, Goodie, et al., 2004; Paulhus, 2011; Paulhus et al., 2003).

Hypothesis 4a: In previous studies incorporating the Psychological Entitlement Scale (PES; Campbell, Bonacci, et al., 2004), participant scores have shown a strong positive relationship with NPI scores (Campbell, Bonacci, et al., 2004). Therefore, it is hypothesized that *CRT-NR item and total scores will show a similarly weak positive correlation with the PES.*

Hypothesis 4b: Given the results of previous studies, it is further predicted that NPI and PES scores will be significantly positively correlated.

CHAPTER 6

METHOD

Participants

The 222 participants in this study were comprised of students volunteering for extra credit in psychology courses at the Georgia Institute of Technology in Atlanta, GA. They were recruited through Experimentix, an online repository for active experiments within the School of Psychology at the Georgia Institute of Technology. 123 of the participants were male (55.4%), and 99 female (44.6%). The participants ranged in age from 18 to 38 with a mean age of 19.77 years. Two hundred of the participants (90.09%) were native English speakers, and the remaining 22 participants (9.91%) indicated English was not their first language, but that they were fluent. Fluency was noted as a requirement for participation. Many participants took the measures alone (50 or 22.52%), and the number of fellow participants in the room was recorded during each session to determine whether the presence of other students had any impact on participant estimates of their own performance. Only one participant withdrew from the study before completing it as a result of a time constraint. Two participants were determined to have skipped two pages of one measure (the OCQ-90), and as participant identities were not attached to the measure, they could not be contacted to complete it.

Materials

Primary Predictor Measure

The Conditional Reasoning Test for Narcissism

The Conditional Reasoning Test for Narcissism (CRT-NR) consisted of 20 multiple-choice items, and was written and built for use in this study. The measure was

built according to the recommendations presented in a comprehensive review of the mechanics of CRTs by James and LeBreton (2011). All the items written were repeatedly edited (or dismissed entirely) by the author, and by Lawrence James and other members of the Laboratory of Innovative Assessment and Personality at the Georgia Institute of Technology. Ultimately, 20 items were included in the final version of the measure to be used in this study. Each item contains one narcissistic response. This response is internally or selfishly focused and represents a lack of empathy, a willingness to exploit others, a view of superiority or arrogance, or some combination of any of the above, one logical or “prosocial” response is included in each item. This response represents a non-narcissistic point of view. Finally, two illogical responses included in each item. These responses are designed to be clearly illogical, as the measure is designed to resemble a reasoning measure, and reasoning measures must contain incorrect answers among the options. Ideally, a narcissistic individual will see the narcissistic response as the best and most logical answer, and a person with “normal” narcissism levels will see the prosocial response is the best and most logical answer. Here is a sample item:

The phrase "It's lonely at the top" is sometimes used to describe the feeling of CEOs (Chief Executive Officers) or Presidents of large organizations. To what does this phrase logically refer?

- a) Most CEOs or Presidents are recluses who do not leave their homes.
- b) CEOs and Presidents are typically rude and don't like other people very much.
- c) People in high-level positions often have to make decisions that will be unpopular, making it difficult for them to feel a part of the rest of the organization.
- d) Very few people are truly qualified to run organizations, and their subordinates are often envious of their abilities, and thus don't associate with them.

In the case of this item, a narcissistic individual will put him/herself in a position of superiority and choose response “d,” believing that “it’s lonely at the top” because others are simply jealous of the authority and preeminence of a leader. A person with

“normal” narcissism levels will see response “c” as being the most logical, believing it’s not that people are jealous of leaders, its that leaders have to make tough decisions that lead them to be treated differently, thus leading them to feel less a part of the everyday organizational community.

Each of the 20 items was scored by determining whether the respondent chose the NR (Narcissistic) response option, or another option. For each item, the respondent received a score of one if he or she chose the NR option, and a score of zero if he or she chose one of the other three options (two illogical options, and one “prosocial” option). The CRT-NR total score was computed by counting the number of NR options chosen by the test-taker, with a potential range of zero (for individuals choosing none of the NR options) to twenty (for individuals choosing every possible NR option).

Criterion Measures

Narcissistic Personality Inventory

The Narcissistic Personality Inventory (NPI), created by Raskin and Hall (1979), is the most widely-used measure of narcissism in non-clinical populations. The NPI-40 (Raskin & Terry, 1988) is a 40-item version of the NPI developed to be more parsimonious than the original 59-item version, and is now the most frequently used version of the NPI. The measure contains forced-choice dichotomous items, presenting two statements (such as “Modesty doesn’t become me” and “I am essentially a modest person”) of which that participants must choose one that they believe best reflects their thoughts and behaviors. The NPI-40 items are contained in Appendix 2.

The Mensa Workout Test

Mensa is a society in which only those with IQ levels considered to be in the top 2% of the world population are invited to join as members. The Mensa Workout ("Mensa Workout," 2012) is a 30-item test designed to be a practice test for the Mensa qualifying exam. It includes both fill-in-the-blank/free response and multiple-choice questions. There is a time limit of 30 minutes for this measure. A scoring key with correct responses is provided by Mensa International, Ltd.

The Over-Claiming Questionnaire

The Over-Claiming Questionnaire (OCQ; Paulhus et al., 2003) is a 90-item test measure designed to capture both a subject's actual knowledge with various concepts and any exaggeration of knowledge of concepts simultaneously (Paulhus, 2011). In addition to 82 items that are related to one of six content domains (historical names and events, physical sciences, books and poems, twentieth century names, authors and characters, and social science and the law), the measure contains 18 "foil" items in the various content domains that do not actually exist. Below is a sample content domain and associated items from the OCQ:

Format of the Over-Claiming Questionnaire (OCQ)

Using the following scale as a guideline, write a number from 0 to 6 beside each item to indicate how familiar you are with it.

Never heard of it							Very familiar
0	1	2	3	4	5	6	
Physical Sciences							
_____ Manhattan Project			_____ asteroid			_____ nuclear fusion	
_____ cholarine			_____ atomic number			_____ hydroponics	
_____ alloy			_____ plate tectonics			_____ photon	
_____ ultra-lipid			_____ centripetal force			_____ plates of parallax	
_____ nebula			_____ particle accelerator			_____ satellite	

Note. Of the 15 items above, the following 3 are foils: cholarine, ultra-lipid, and plates of parallax. Other topic categories include literature, art, history, social science, language, contemporary culture, and consumer products.

Paulhus, Harms, Bruce, & Lysy (2003, p. 904)

The NPI was used to determine convergent and comparative validity of the OCQ, and more specifically its exaggeration or over-claiming bias, as it has strong correlates and convergent validity with self-enhancement behaviors (John & Robins, 1994; Paulhus et al., 2003). The OCQ bias (or exaggeration index) was determined to have a validity coefficient of 0.35 ($p < .01$) in predicting NPI scores (Paulhus et al., 2003).

The Psychological Entitlement Survey

The Psychological Entitlement Survey (PES; Campbell, Bonacci, et al., 2004) is a 9-item explicit measure of Entitlement. This measure contains statements overtly related to entitlement (e.g. "If I were on the Titanic, I would deserve to be on the *first* lifeboat!"), and a 7-point Likert scale that asks respondents the extent to which they agree with the statement (1= strong disagreement, while 7= strong agreement). In a series of studies validating the PES, it was determined to have a test-retest reliability of $r = .70$ after two months, and the correlation between the PES and the NPI Entitlement subscale was $r = .54$ ($p < .01$). The PES was also found to correlate with external criteria in its initial validation study, including, most notably, taking candy from children ($r = .24$, $p < .05$).

Procedure

After filling out a form containing questions about demographics (including age, gender, and whether or not English was their first language), participants were given the Mensa workout test. Upon completion of the Mensa workout test, participants were asked to a) estimate their final score out of thirty, and b) estimate their score relative to all other participants within the student sample by placing themselves in an estimated performance range (Top 5% of students, Top 10% of students, Top 25% of students, Top 50% of students, Top 75% of students, or Bottom 25% of students). Students then completed the

OCQ, followed by the CRT-NR, and lastly, the NPI. Much like studies involving the CRT-A and CRT-RMS, the CRT-NR was described as a reasoning test to participants. The NPI and PES were given last (as one packet of items) as they are self-report measures that fairly clearly outline the behaviors or thought processes they are trying to capture, and are therefore most appropriately given after implicit measures to prevent them from influencing participants' responses to the other measures (in other words, to prevent the participants from "figuring out" the central trait being measured prior to taking more indirectly-designed measures).

CHAPTER 7

RESULTS

Two hundred and twenty-two undergraduates completed the study. No student responses had to be eliminated from the CRT-NR results due to excessive endorsement of illogical responses. However, one student’s results were eliminated from the item response theory analysis on account of leaving items blank. Two students’ OCQ results were eliminated after they left numerous items blank as well. Additionally, one student left the study before completing the NPI or PES, leading to the elimination of that participant’s scores on those measures (that student’s responses to the CRT-NR were still included in analyses involving the CRT-NR alone). In an analysis of response patterns, no participants appeared to engage in careless or non-sensical responding patterns to items (e.g. endorses all option “B,” choosing “1” for every scalar item, etc.). Descriptive statistics for each of the metrics included in the study are presented in Table 1.

Table 1
Descriptive Statistics

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Mensa Workout Test Score	222	6	28	20.41	3.974	15.790
Estimated Mensa Workout Test Score	222	5	30	20.60	4.961	24.612
Mensa Workout Test Difference Ratio	222	-.64	.85	.0223	.21820	.048
Estimated Mensa Workout Test Range	222	1	6	3.19	.918	.842
NPI Total Score	221	2	32	14.49	6.010	36.115
PES Total Score	221	9	63	27.49	9.164	83.987
CRT-NR15-Item Model Total Score	222	0.00	9.00	2.5901	1.55691	2.424
OCQ Exaggeration Index	222	.11	.73	.3604	.10915	.012
OCQ Accuracy Index	222	-.06	.64	.3418	.11071	.012

Demographic information, including age, gender, and whether or not English was a participant's first language, showed a few significant differences across the measures, but none that appear to be of practical importance. There were only two significant differences between groups that appeared when using a total score on any of the measures. First, gender showed a significant correlation with NPI total scores, with men earning significantly higher scores than women ($r = .152, p < .05$), which is consistent with some prior research using the NPI (e.g. Carroll, 1989; Tschanz, Morf, & Turner, 1998). Second, those participants for whom English was not a first language fared significantly worse on the OCQ Accuracy Index ($r = -.143, p < .05$), which is logical given that a person who has not lived in North America his/her whole life has had less exposure to many of the US-centric names, authors, and events included in the OCQ. There was no significant difference between the groups on the OCQ Exaggeration Index, which is of much more interest in the present study. No demographic categories showed significant differences on the PES, or on the total score of the CRT-NR.

Analyses relevant to this study can be divided based on four areas of interest: Initial validation testing of the CRT-NR, an Item Response Theory analysis using a Two-Parameter Logistic Model, a cluster analysis of the CRT-NR, and item-level and correlational analyses related to the various measures used. Each of these areas of interest is discussed in detail below.

Initial Validation Analyses

Several analyses were conducted to determine the initial validity of the 20 CRT-NR items. First, p-values and biserial part-whole (item-total) correlations were calculated for each item. Biserial correlations were an appropriate measurement tool in this case as

the predictors (each item of the CRT-NR) were dichotomously scored variables, and the criterion measures (Total CRT-NR score, NPI, Mensa Workout Test scores and estimates, OCQ indices, and PES scores) were continuous variables (Bollen, 1989). Biserial correlations also account for the p-values of items, thereby taking the base rate of the construct being measured into account (James & LeBreton, 2011). In this study, low p-values are expected due to the a relatively low base rate of subclinical narcissism (estimates range from 8-18%), which means biserial correlations will be a better indicator of the relationship between the CRT-NR items and total scores and other measures.

All 15 item-total correlations were found to be statistically significant when standard error ranges were examined. The response distributions and p-values of each item were also examined. Though many of these coefficients provided adequate arguments for the elimination of certain items, namely those with very low ($p < .05$) or very high ($p > .45$) p-values, an item response theory analysis and cluster analysis were completed before any decisions regarding the elimination of items was made to allow for the comparison of the item-by-item results. Item p-values and biserial correlations of the final 15 item model are presented in Table 2.

Table 2
p-Values and Item-Total Biserial Correlations for Items in the Conditional Reasoning Test for Narcissism

CRT-NR Item Number	p-value	Item-Total Correlation
1	.144	.436
2	.135	.551
3	.127	.381
6	.221	.314
8	.099	.533
9	.171	.452
10	.059	.528
11	.158	.221
12	.018	.434
14	.320	.536
15	.176	.684
17	.275	.617
18	.432	.261
19	.153	.334
20	.104	.364
Mean	.173	.443
Standard Deviation	.105	.132

In this case, the mean p-value of .173 across all 15 items indicates that a small proportion of participants selected the narcissistic response on each item. Given that the trait the CRT-NR was designed to measure has a low base rate, this p-value is consistent with what one would hope to see in an initial validation of the CRT-NR. This good news, however, is tempered by the fact that a low base rate can lead to a number of statistical issues as a result of skewed distributions (James & LeBreton, 2011). Some of these statistical issues present themselves later in this section.

The average item-total biserial correlation across the 15 items is .443. The average and pattern of item-total biserial correlations seen in the CRT-NR is consistent with those seen in other conditional reasoning measures. A study of the CRT-A utilizing the data from 5,238 individuals showed an average item-total biserial correlation of .42 (James & LeBreton, 2011).

Item Response Theory Analysis

The CRT-NR was subject to an Item Response Theory (IRT) Analysis to determine which items should be retained in future studies. Responses to each item were fitted using a Two-Parameter Logistic (2PL) model (see Thissen, 1993). A 2PL model is most appropriate for measures in which the individual items may not be equal with regard to the measurement of a latent trait (Embretson & Reise, 2009). The items of the CRT-NR do not each measure a latent trait equally, as evidenced by the range of p-values across items, making a 2PL model well-suited to the data. The 2PL model treats the CRT-NR as a dichotomously scored measure, which is appropriate given that the number of distractor items endorsed by participants was extremely low (63 out of 4,438 total responses, or 1.4%), and given that Conditional Reasoning Tests measuring only one trait are typically scored dichotomously for analysis (James & LeBreton, 2011). The 2PL model has previously been shown to be the most parsimonious IRT model for Conditional Reasoning Tests (DeSimone, 2012).

A Root Mean Square Error of Approximation (RMSEA) of $<.05$ tends to indicate good fit, while an RMSEA of $>.1$ tends to indicate a poor fit in an IRT model (Embretson & Reise, 2009). The 2PL model that included all 20 original CRT-NR items showed a relatively good overall fit with a RMSEA of 0.05. However after reviewing both the IRT analysis results and the validity coefficients discussed in the previous section for each item, four items were eliminated for poor fit and/or lack of validity. These items (4,5,7, and 13) showed negative slopes, reflected standard error margins that contained zero, and/or showed a low item-total biserial correlations ($p < .150$).

A second IRT analyses was performed on a final list of 15 items after the completion of the factor and cluster analyses discussed below, which resulted in the elimination of one additional item. The 15-item IRT 2PL model also showed a better overall fit with a RMSEA of 0.00. Looking at the item characteristic curves and item information curves for each item, items 8, 14, and 17 emerged as the most effective items in terms of differentiation and measurement of the latent trait. Item characteristic curves and trace lines for items 8, 14, and 17 are presented in Figures 1-6.

Figure 1
Item Characteristic Curve Graph for CRT-NR Item 8

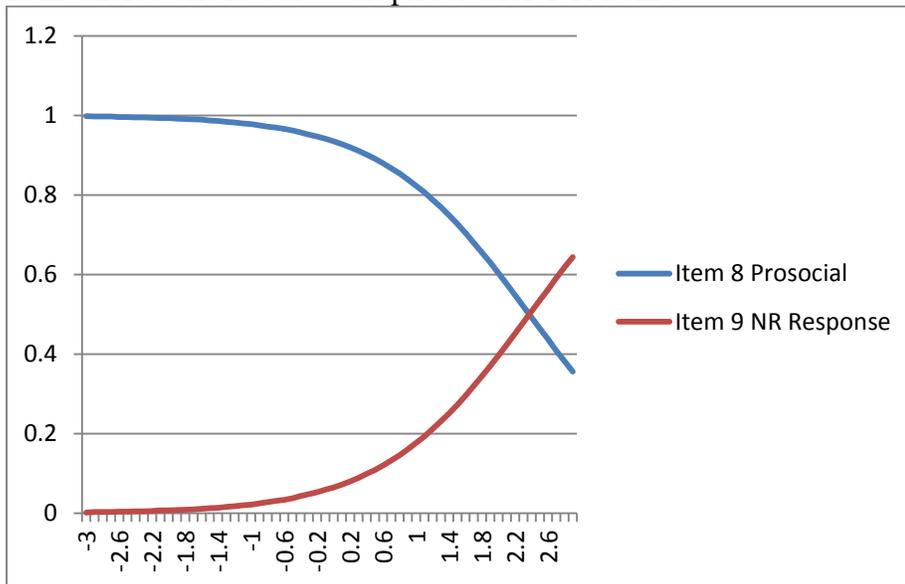


Figure 2
Item Information Curve Graph for CRT-NR Item 8

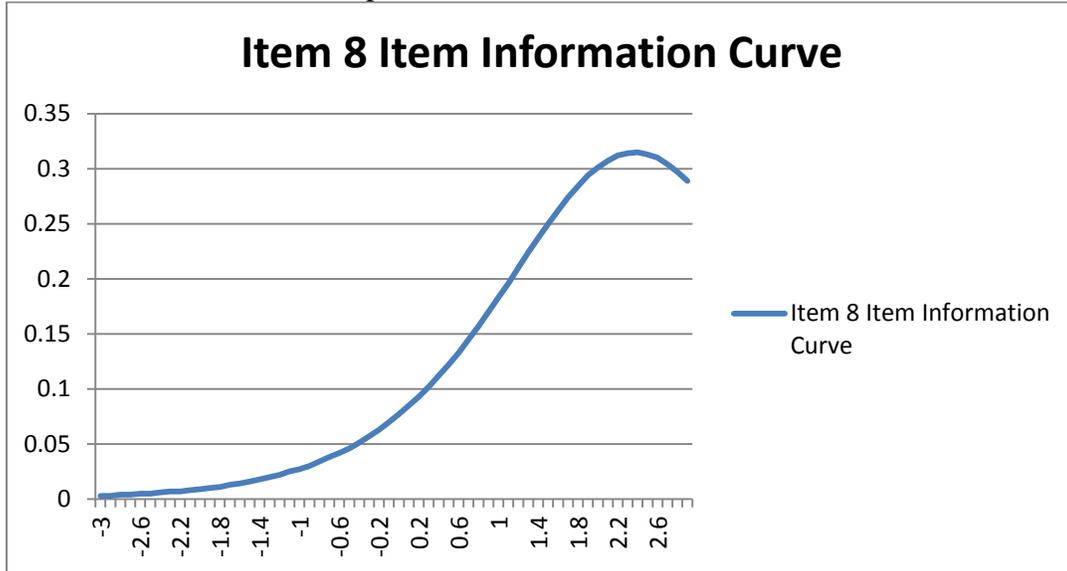


Figure 3
Item Characteristic Curve Graph for CRT-NR Item 14

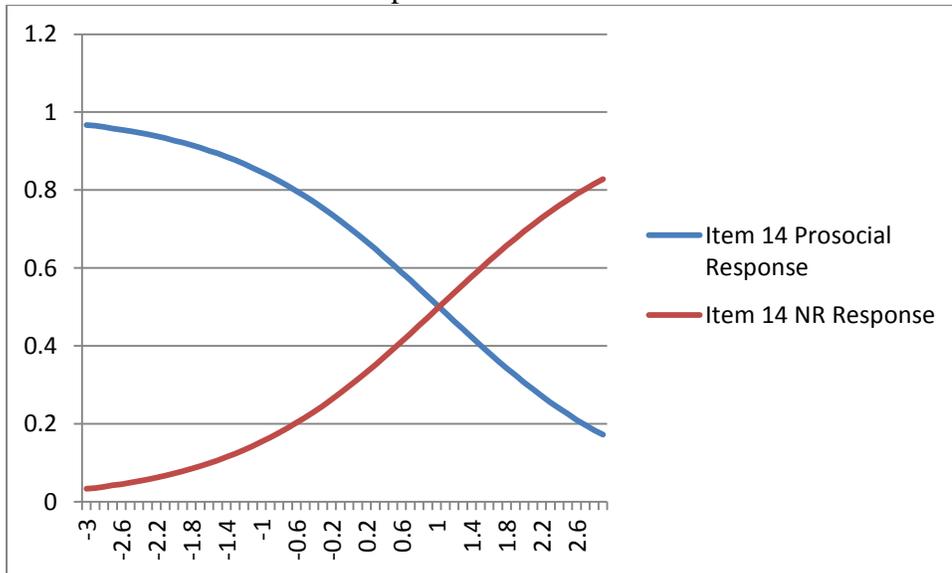


Figure 4
Item Information Curve Graph for CRT-NR Item 14

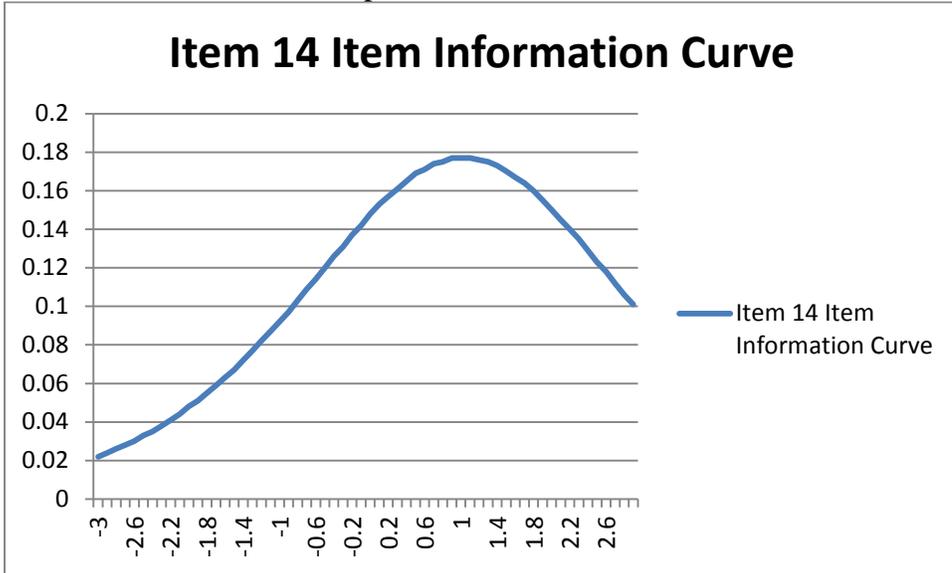


Figure 5
Item Characteristic Curve Graph for CRT-NR Item 17

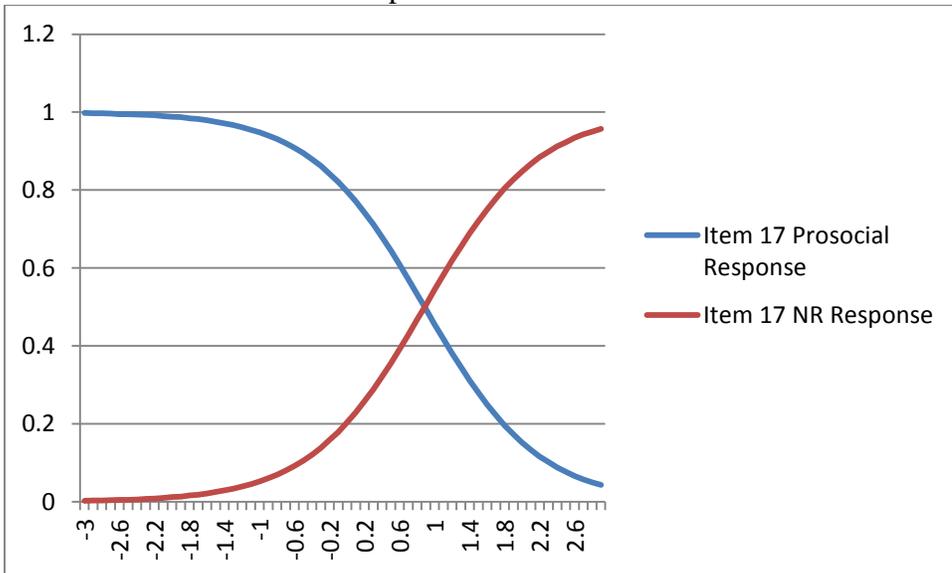
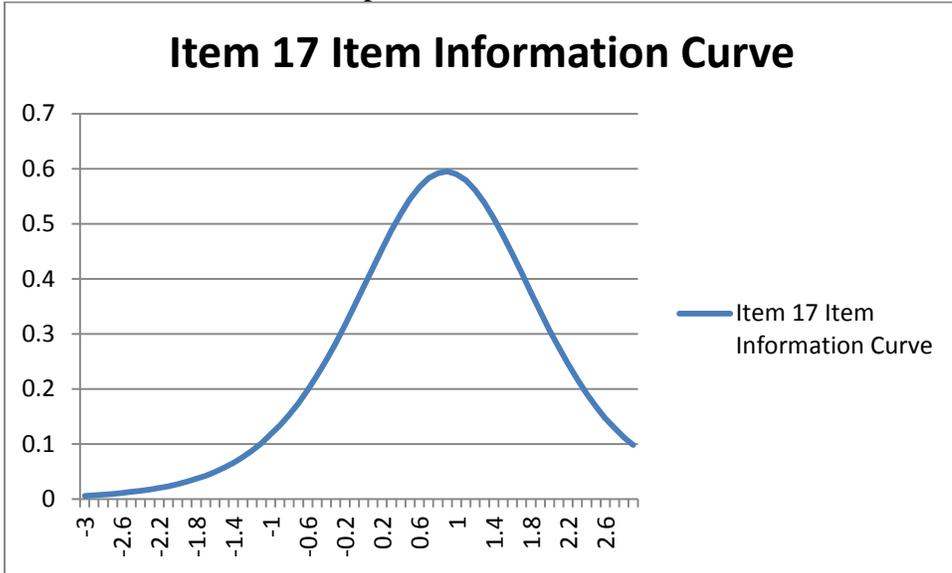
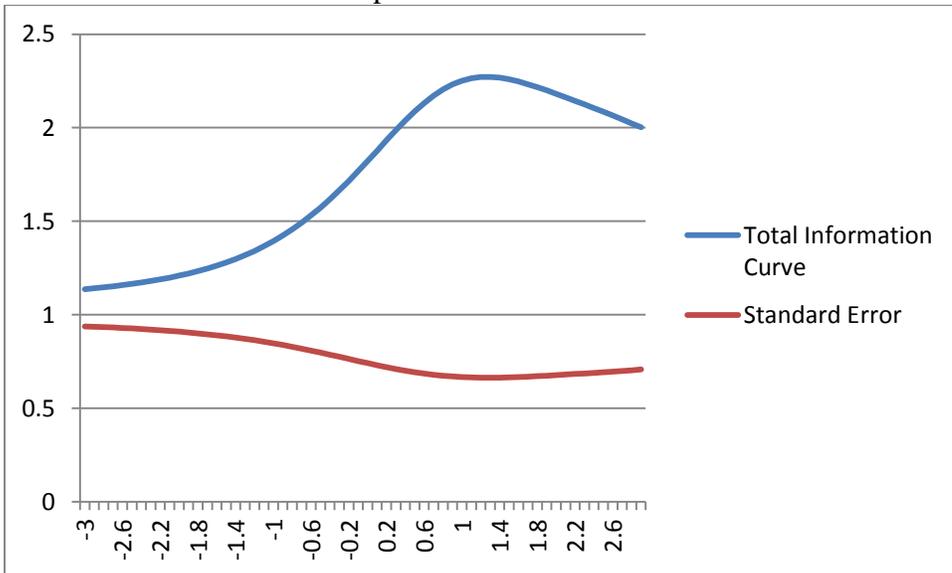


Figure 6
Item Information Curve Graph for CRT-NR Item 17



All three show higher endorsement of NR responses as latent trait levels increase. The Total Information Curve Graph is presented in Figure 7.

Figure 7
Total Information Curve Graph



IRT Parameter estimates are presented in Table 3. Likelihood-based values and goodness of fit statistics are presented in Table 4.

Table 3
2PL Model Item Parameter Estimates

CRT Item	α	Standard error	β	Standard error
1	0.32	0.30	5.60	4.98
2	0.48	0.32	4.04	2.49
3	0.38	0.33	5.27	4.41
6	-0.24	0.29	-5.24	6.04
8	1.12	0.51	2.37	0.79
9	0.24	0.30	6.62	8.10
10	0.97	0.56	3.28	1.49
11	-0.38	0.43	-4.53	4.87
12	0.42	0.76	9.70	16.80
14	0.84	0.33	1.03	0.37
15	0.56	0.32	2.93	1.51
17	1.54	0.86	0.89	0.29
18	-0.19	0.23	-1.44	1.85
19	0.37	0.33	4.79	4.04
20	0.41	0.35	5.39	4.34

Table 4
Likelihood-based Values and Goodness of Fit

Statistics based on loglikelihood	
-2log likelihood	2791.51
Akaike Information Criterion (AIC)	2851.51
Bayesian Information Criterion (BIC)	2953.59
RMSEA	0.00

In a very good item, the alpha coefficient should ideally be at least twice the standard error. In good items, alpha should be about 1.5 times the standard error (DeSimone, 2012; Embretson & Reise, 2009) Given the graphical representation of items 8, 14, and 17 seen above, it is not surprising that they were the strongest items based on the distance between the alpha coefficient and the standard error. Beta weights are indicative of the “difficulty” of the item. In the case of this measure, the “difficulty” is better described at the level of narcissism a respondent needs to reach in order to be likely to endorse an NR response. In other words, the higher the beta weight, the more “narcissistic” respondents tended to be in endorsing that item (based on their total score).

Item 12 was the most “difficult” item, with a β of 9.70. This finding is consistent with the fact that item 12 showed the lowest p-value (.018) in the entire 15 item CRT-NR.

There were still some items with a less than ideal distance between the standard error and the alpha coefficient. Items 6, 11, and 18 were of particular concern, with negative alpha values falling within the standard error range. Items 6 and 11 are further discussed below in results of the cluster analysis.

Factor and Cluster Analysis

An Exploratory Factor Analysis (EFA) was attempted using the 16 items retained on the CRT-NR after reviewing the results of the initial IRT analyses and the validity coefficients for each item. A tetrachoric correlation matrix was utilized in attempting the EFA given the dichotomous nature of the measures. Three items (11, 12, and 16) arose as Heywood cases, leading to a non positive definite correlation matrix as the result of a very slightly negative eigenvalue (-.010). This statistical issue was resolved if those items were deleted, however, the elimination of those items affected the validity and reliability of the measure, along with other metrics. The items in question showed good item-total correlations, and at least one of the items in question was reflected as “good-to-average” items in the IRT analysis. In order to overcome this statistical conundrum, a cluster analysis was completed to see whether the item groupings in response patterns could be determined without sacrificing the integrity of the measure.

Like factor analyses, cluster analyses also involves categorization of variables, dividing up a set of variables so that the similar variables are found within one subset, and dissimilar variables are found in different subsets (Lattin, Carroll, & Green, 2003). In a hierarchical cluster analysis, clustering occurs in stages, and variables are sequentially

clustered. Agglomerative (or bottom-up) cluster analyses are more often performed, in which each individual variable begins as a cluster, and clusters are combined based on similarity (Lattin et al., 2003).

A variable-based, agglomerative hierarchical cluster analysis was performed using Ward's method, first on the 16-item model. Item 16 proved troublesome in completing the analysis, consistently appearing in its own cluster, even when the number of clusters was reduced to two. Eliminating Item 16 led to a more parsimonious cluster analysis, and a stronger IRT model. This led to the acceptance of a 15-item model.

The cluster analysis of the 15-item model returned several possible solutions, and it ultimately appeared that a 3-cluster solution was the most defensible. This solution was determined to be the optimal solution through the analysis of the resulting dendrogram, which is one way to determine which clusters to retain (Lattin et al., 2003). In analyzing the dendrogram, it was determined that the 2-cluster model connected two relatively distant clusters, and a 4-cluster model was incomplete, not converging two clusters that looked to be connected. In the 3-cluster model, there was a wide range on the criterion distance measure over which the number of clusters did not change or alter. In the 3 cluster model, items 2, 8, 9, 10, 14, 15, and 17 fall in Cluster 1, items 1, 3, 12, 18, 19, and 20 fall in Cluster 2, and items 6 and 11 fall in Cluster 3. The cluster analysis dendrogram is found in Figure 8.

Figure 8
Cluster Analysis Dendrogram

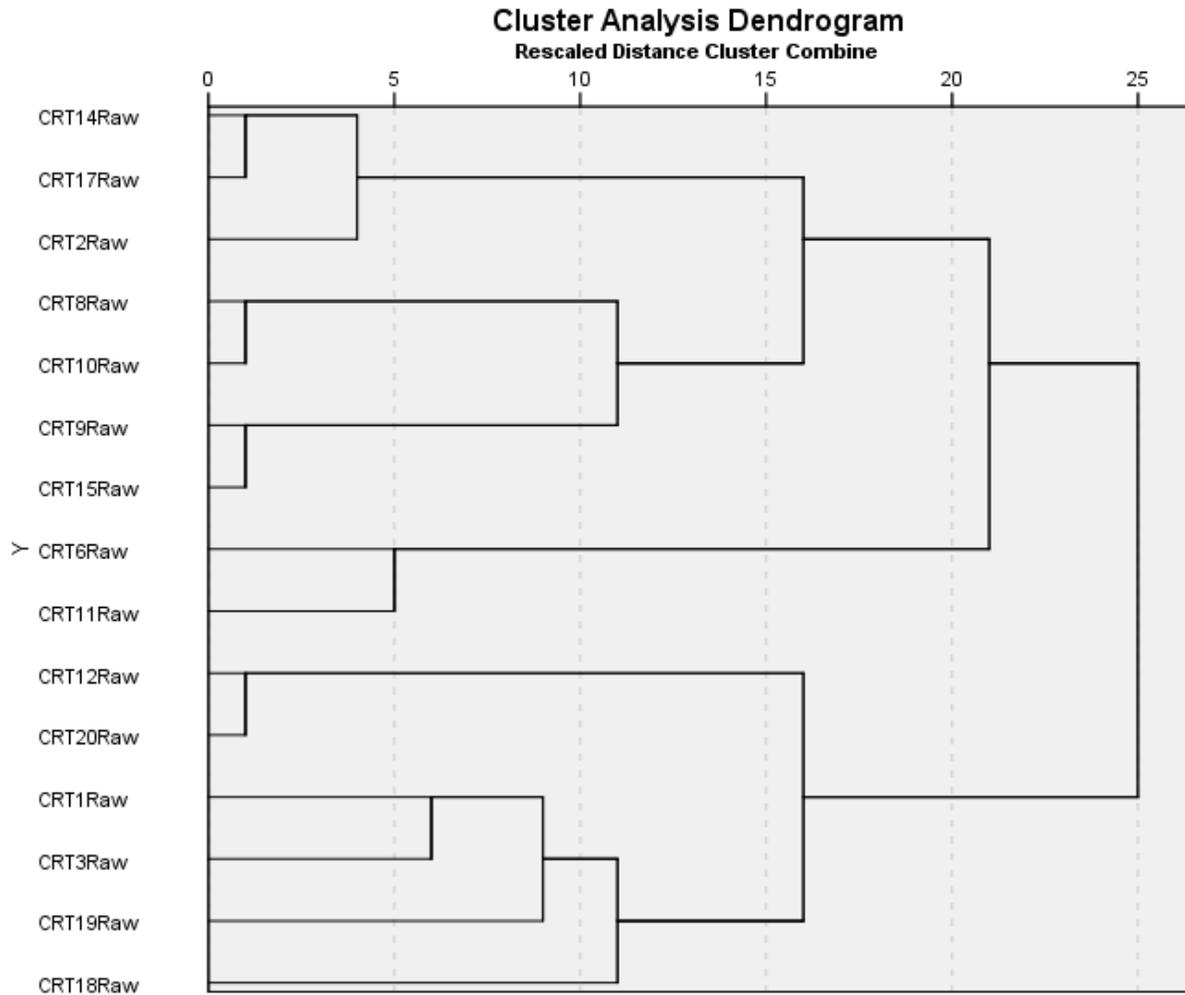


Table 5 includes the analysis of cluster membership for 2, 3 and 4-cluster solutions.

Table 5
Cluster Membership

Item	4 Clusters	3 Clusters	2 Clusters
CRT 1	1	1	1
CRT 2	2	2	2
CRT 3	1	1	1
CRT 6	3	3	2
CRT 8	4	2	2
CRT 9	4	2	2
CRT 10	4	2	2
CRT 11	3	3	2
CRT 12	1	1	1
CRT 14	2	2	2
CRT 15	4	2	2
CRT 17	2	2	2
CRT 18	1	1	1
CRT 19	1	1	1
CRT 20	1	1	1

Note that items 6 and 11, which were both items that did not show strong results in the IRT analysis, and one of which represented a Heywood case in the Factor Analysis, make up Cluster 3. This finding is consistent with the idea that items 6 and 11 may be measuring a different trait facet than the other items, or may be measuring another trait entirely. However, as seen in the following section, both items show correlations with other measures utilized in this study. Further research including these items will need to be completed to determine if these items belong in the CRT-NR, or whether they might be measuring a different trait.

Item-Level and Correlational Analyses

After IRT analyses and the cluster analysis were complete and a final model of CRT-NR items was determined, biserial correlations were calculated comparing each item of the 15-item model of the CRT-NR to the total accuracy and exaggeration indices of the OCQ, the accuracy and exaggeration indices of each scale of the OCQ, the NPI,

the PES, and various metrics related to the Mensa Workout test and its estimates. OCQ Accuracy and Exaggeration Indices were calculated according to the signal detection theory method described in detail by Paulhus (2011). NPI and PES total scores were used, and items were measured against actual total Mensa Workout Test scores, estimated Mensa Workout Test scores, the raw difference between estimated and actual Mensa Workout Test scores, and a difference ratio between estimated and actual scores that takes the actual score into account.

Overall, results were scattered. Some items showed stronger correlations with OCQ exaggeration indices at either the total-measure or scale level, and some showed strong correlations with the NPI, while others showed stronger correlations with elements related to the Mensa Workout Test. Tables 6-8 include the correlations of selected sample items representing each of those 3 responding patterns. Item 6 shows a strong relationship with the OCQ Exaggeration indices, Item 10 shows a significant relationship with the NPI, and Item 19 shows a strong relationship to elements related to the Mensa Workout Test (i.e. inflated estimated scores, a larger ratio/discrepancy between scores, and a higher estimated score range). Significance was computed using standard error range, and significant correlations are flagged.

Table 6
CRT-NR Item 6 Biserial Correlations

CRT-NR Item 6	
Metric	Biserial Correlation
Item-Total (Part-Whole)	0.314*
OCQ Total Accuracy Index	0.070
OCQ Total Exaggeration Index	0.145*
HNE Accuracy Index	0.120
HNE Exaggeration Index	0.116
PS Accuracy Index	-0.158*
PS Exaggeration Index	0.150*
TCN Accuracy Index	0.046
TCN Exaggeration Index	0.077
BP Accuracy Index	0.194*
BP Exaggeration Index	0.179*
AC Accuracy Index	0.063
AC Exaggeration Index	0.129
SSL Accuracy Index	-0.036
SSL Exaggeration Index	0.029
Mensa Workout Test Actual	0.035
Mensa Workout Test Est.	-0.007
MWT Difference Ratio	-0.061
Estimated MWT Range	0.078
PES Total	-0.055
NPI Total	-0.131*
Item p-value	0.221

Note. Item-Total (Part-Whole) = Item-Total biserial correlation for CRT-NR item; OCQ Total Accuracy Index = Over-claiming Questionnaire Accuracy Index for total measure; OCQ Total Exaggeration Index = Over-claiming Questionnaire Exaggeration Index for total measure; HNE = OCQ Historical Names and Events subscale; PS = OCQ Physical Sciences subscale; TCN = OCQ Twentieth Century Names subscale; BP = OCQ Books and Poems subscale; AC = OCQ Authors and Characters subscale; SSL = OCQ Social Science and the Law subscale; Mensa Workout Test Actual = Total Score on Mensa Workout Test; Mensa Workout Test Est. = Estimated Total Score on Mensa Workout Test; MWT Difference Ratio = Ratio between Actual and Estimated score on Mensa Workout Test; Estimated MWT Range = Participant Estimate of Mensa Workout Test range compared to other participants; PES Total = Psychological Entitlement Scale total score; NPI Total = Narcissistic Personality Inventory total score.

*indicates statistical significance

Table 7
CRT-NR Item 10 Biserial Correlations

CRT-NR Item 10	
Metric	Biserial Correlation
Item/Total (Part-Whole)	0.528*
OCQ Total Accuracy Index	0.038
OCQ Total Exaggeration Index	-0.040
HNE Accuracy Index	0.138*
HNE Exaggeration Index	-0.066
PS Accuracy Index	-0.010
PS Exaggeration Index	-0.118
TCN Accuracy Index	0.012
TCN Exaggeration Index	0.102
BP Accuracy Index	0.074
BP Exaggeration Index	0.020
AC Accuracy Index	0.006
AC Exaggeration Index	0.002
SSL Accuracy Index	-0.074
SSL Exaggeration Index	-0.104
Mensa Workout Test Actual	-0.176*
Mensa Workout Test Est.	-0.044
MWT Difference Ratio	0.100
Estimated MWT Range	0.022
PES Total	0.024
NPI Total	0.170*
Item p-value	0.059

* indicates statistical significance

Table 8
CRT-NR Item 19 Biserial Correlations

CRT-NR Item 19	
Metric	Biserial Correlation
Item/Total (Part-Whole)	0.334*
OCQ Total Accuracy Index	-0.002
OCQ Total Exaggeration Index	0.034
HNE Accuracy Index	-0.064
HNE Exaggeration Index	-0.005
PS Accuracy Index	0.075
PS Exaggeration Index	0.056
TCN Accuracy Index	-0.114
TCN Exaggeration Index	0.014
BP Accuracy Index	-0.072
BP Exaggeration Index	0.076
AC Accuracy Index	0.056
AC Exaggeration Index	-0.052
SSL Accuracy Index	0.105
SSL Exaggeration Index	0.067
Mensa Workout Test Actual	0.055
Mensa Workout Test Est.	0.183*
MWT Difference Ratio	0.145*
Estimated MWT Range	-0.149*
PES Total	-0.030
NPI Total	-0.098
Item p-value	0.153

Note: The “lower” a numerical Estimated MWT range, the better a participant thought his/her score to be – the range went from 1 to 6 with one being highest and 6 being the lowest range.

* indicates statistical significance

After computing item-level correlations, total scores on the CRT-NR were correlated with total scores and scale scores (where appropriate) of the other measures. Pearson *r* correlations between the CRT-NR and the other study measures are presented in Table 9.

Table 9
CRT Total Score Correlations

CRT Total Score Correlations	
Metric	Pearson <i>r</i> Correlation
OCQ Total Accuracy Index	-0.015
OCQ Total Exaggeration Index	0.108
HNE Accuracy Index	0.09
HNE Exaggeration Index	0.035
PS Accuracy Index	-0.055
PS Exaggeration Index	0.139*
TCN Accuracy Index	-0.041
TCN Exaggeration Index	0.091
BP Accuracy Index	-0.01
BP Exaggeration Index	0.085
AC Accuracy Index	-0.036
AC Exaggeration Index	0.053
SSL Accuracy Index	0.024
SSL Exaggeration Index	0.078
Mensa Workout Test Actual	-0.149*
Mensa Workout Test Est.	-0.074
MWT Difference Ratio	0.097
Estimated MWT Range	0.048
PES Total	-0.121
NPI Total	-0.02

* $p < .05$

While significant correlations between the CRT-NR total score and the other measures were sparse, there was a significant positive correlation between the Exaggeration Index on the Physical Sciences subscale of the OCQ and the CRT-NR total score ($r = .139, p < .05$), and a significant negative correlation between total score on the CRT-NR and the total score on the Mensa Workout Test ($r = -.149, p < .05$). The former finding remains particularly notable, and is covered at length in the discussion section of this paper.

There were other noteworthy significant correlations that arose when comparing the various measures. As one would expect, estimated Mensa Workout Test scores were significantly correlated with actual Mensa Workout Test scores ($r = .613, p < .01$). Actual Mensa Workout Test scores were significantly positively correlated with the OCQ Accuracy Index ($r = .202, p < .01$), while estimated Mensa Workout Test scores were not. The difference ratio between estimated and actual Mensa Workout Test scores showed a significant negative correlation with the OCQ Accuracy Index ($r = -.200, p < .01$), meaning that the greater the discrepancy between estimated and actual scores on the Mensa Workout Test, the less accurate a participant was in completing the OCQ. The difference ratio also showed significant positive correlations with both the PES and the NPI ($r = .169, p < .05$; $r = .206, p < .01$), meaning that as PES and NPI scores increased, the discrepancy between actual and estimated Mensa Workout Test scores increased. Estimated ranges on the Mensa Workout Test (i.e. a participant's estimated performance relative to all other students completing the measure) showed significant correlations with both the PES and NPI ($r = -.132, p < .05$; $r = -.164, p < .05$), meaning that the higher a score on the NPI or PES, the more likely that participant was to rate his or her performance as being more "elite" among peers. The PES showed a significant positive correlation with the NPI ($r = .169, p < .05$) consistent with prior research (Campbell, Bonacci, et al., 2004).

Reliability Estimate

Internal consistency reliability estimates for the CRT-NR were calculated using a derivative of the Kuder-Richardson 20 formula as recommended in earlier examinations of conditional reasoning measures (James & LeBreton, 2011; James et al., 2005). This formula incorporates item-total biserial correlation coefficient in determining reliability.

The 15-item model of the CRT-NR showed an internal consistency reliability estimate of .71, which exceeds the lower-bound reliability suggestion of .70 for tests in early-stage development (James & LeBreton, 2011; Nunnally & Bernstein, 1994).

Overall Findings

In addressing each hypothesis individually, the present study found the following:

Hypotheses 1a and 1b: CRT-NR scores will show a positive correlation with the estimated score on the Mensa Workout Test; CRT-NR scores will show an inverse correlation with the ratio that measures the difference between actual score and estimated score. These hypotheses were not supported by the results. The correlation between the CRT-NR and the difference ratio on the Mensa Workout Test was a weak positive correlation ($r = .097$), and Hypothesis 1a was complicated by the fact that actual Mensa Workout Test scores were negatively correlated with CRT-NR total scores, and given that estimated and actual scores showed a correlation of $r = .613$, it follows that the correlation between the CRT-NR and estimated scores was a weak negative correlation ($r = -.074$).

Hypothesis 2: It is hypothesized that CRT-NR item and total scores will show a strong positive correlation with Exaggeration Index scores on the Over-claiming Questionnaire. This hypothesis was not supported for the total Exaggeration Index on the OCQ ($r = .108$), but was supported for the Physical Sciences Scale of the OCQ, which was significantly correlated with the CRT-NR ($r = .139, p < .05$).

Hypotheses 3a and 3b: CRT-NR scores will show a weak positive correlation with participant NPI scores; NPI Scores will show a positive correlation with both measures related to self-enhancement/overconfidence (the Mensa Workout Test and the OCQ). The

correlation between the NPI and the CRT-NR total score nonsignificant ($r = -.020$). More data are likely necessary to determine whether that correlation is consistent across samples. Half of Hypothesis 3b was supported, in that the NPI showed a significant correlation with the difference ratio calculated using estimated vs. actual scores on the Mensa Workout Test ($r = .206, p < .01$), and the estimated ranges of participant scores ($r = -.164, p < .05$), supporting the NPI's relationship to overconfidence and self-enhancement (actual Mensa Workout Test scores were not significantly correlated to NPI scores). However, the OCQ Exaggeration Index was not significantly related to NPI scores. The NPI was, however, related to several scale level metrics on the OCQ, which are presented in Table 10. Most notably, there were significant correlations between the raw number of OCQ false alarms and the NPI total score ($r = .150, p < .05$), and again between the Exaggeration Index on the Physical Sciences scale of the OCQ and NPI total scores ($r = .136, p < .05$).

Table 10
NPI Total Score Correlations

NPI Total Correlations	
Metric	Pearson <i>r</i> Correlation
CRT-NR 15-item Total Score	-0.020
OCQ Total Accuracy Index	-0.196**
OCQ Total Exaggeration Index	0.057
OCQ Total Hits	-0.036
OCQ Total False Alarms	0.150*
HNE Accuracy Index	-0.174**
HNE Exaggeration Index	0.094
PS Accuracy Index	-0.126
PS Exaggeration Index	0.136*
TCN Accuracy Index	-0.068
TCN Exaggeration Index	-0.022
BP Accuracy Index	-0.161*
BP Exaggeration Index	-0.023
AC Accuracy Index	0.033
AC Exaggeration Index	-0.04
SSL Accuracy Index	-0.191**
SSL Exaggeration Index	0.105
Mensa Workout Test Actual	-0.076
Mensa Workout Test Est.	0.113
MWT Difference Ratio	0.206**
Estimated MWT Range	-0.164*
PES Total	0.169*

** $p < .01$; * $p < .05$

Hypotheses 4a and 4b: CRT-NR item and total scores will show a weak positive correlation with the PES; the NPI and PES total scores will show a significant positive correlation. Hypothesis 4a was not supported by the data, as the CRT-NR total score showed a Pearson correlation of -.121 with the PES total score. Hypothesis 4b was supported by the data, as the PES and NPI showed a Pearson correlation of .160 ($p < .05$).

CHAPTER 8

DISCUSSION

This study represents a preliminary step toward building a valid, easily-administered implicit test of subclinical narcissism. Item-total correlations, reliability estimates, IRT analyses, and a cluster analysis support the notion that the 15-item model of the CRT-NR is measuring a latent trait, but further research will need to be conducted to determine whether the latent trait being measured is, in fact, narcissism (see Study Limitations section for further consideration of this issue).

General Findings

The present study began with a 20-item CRT-NR, and after statistical analyses, was ultimately pared down to a 15-item measure after reviewing item-total correlations, an IRT analysis, and a cluster analysis. The 15-item model was compared with the results of four other measures, both at the item level and using the total score of the CRT-NR. Several items showed significant correlations across the various instruments (though no items showed a significant and positive relationship with the PES), but there were few significant correlations when the CRT-NR total score was measured against the other instruments.

The significant CRT-NR total score correlations that did arise were the comparisons between the CRT-NR and the Physical Sciences scale of the OCQ ($r = .139$, $p < .05$), and a negative correlation between the Mensa Workout Test score and the CRT-NR ($r = -.149$, $p < .05$). The former finding was particularly interesting given the nature of the sample of participants used in the study. It ultimately seems fitting that in a sample of students at a science and technology-focused university, the strongest correlation between

the CRT-NR total score and the various criterion measures was the Exaggeration Index on the Physical Sciences subset of the Over-Claiming Questionnaire. This result raises an important point – the subject areas that participants are likely to be “overconfident” or potentially narcissistic about may vary based on the makeup of the participant pool. While some may wish to flaunt their knowledge of science, others may favor sports trivia, athletic ability, social standing, or some other metric of success.

The IRT analysis strongly supported the notion that the CRT-NR was measuring a latent trait. The RMSEA of 0.00 indicates good fit for the 15-item model. In looking at the Item Information Curve and trace line charts, 3-4 items stood out as being particularly good. Those same items showed a strong relationship between the alpha values and the standard error. Other items were weaker, suggesting that while the model works, those items may possibly benefit from revision or further analysis in other data sets. Some of the same items that proved problematic in trying to conduct a factor analysis were the same items with weaker IRT results (such as items 6 and 11). However, due to the strong performance of those items in other metrics of validation (namely, the correlations between those items and other measures used in this study), they were retained.

In a similar vein, the cluster analysis was particularly revealing about the nature of some of the items. Two of the clusters were populated by items with similar response patterns and relatively similar results when compared to the other measures used in the study. However, the third cluster was more distant from the other two, both in the literal distance shown in the cluster analysis dendrogram, and also in terms of the strength of those items in comparison to the other measures. Items 6 and 11, which both showed statistically significant correlations with the OCQ Exaggeration index ($r = .145$ and $r =$

.245, respectively), did not seem to “fit” with the rest of the items in the measure, populating their own cluster. And while they both had item-total correlations that were large and significant ($r = .314$ and $r = .221$), those values represented the two of the three lowest item-total correlations in the 15-item model. Because a strong relationship between the OCQ Exaggeration Index and the items of the CRT-NR, and in looking at the rest of the results, it is possibly that items 6 and 11 are the two items that are actually *better* measures of implicit narcissism levels than the other items, explaining their isolation from the rest of the items in the cluster analysis, their lower item-total correlations, and their significant correlations with the OCQ Exaggeration Index. Conversely, Items 6 and 11 could just be poor overall items. In either case, special attention should be paid to both of these items in any future studies conducted using the CRT-NR.

Internal consistency reliability estimates also support the 15-item model. A value of .71 indicated that the 15-item CRT-NR provided a reliable estimate of a theoretical true score in a domain of all possible conditional reasoning items related to the latent construct being measured (James & LeBreton, 2011). As the test goes through further development, it will be important to see consistent or increased reliability estimates with the addition of new items.

Study Limitations and Future Directions

As this study comprises the initial testing of a conditional reasoning measure for narcissism, there are a number of limitations to its results. Many of these limitations can and should be explored in future validation studies of the measure. One issue, common to early-stage studies of implicit measures particularly, is that while both the IRT results and

validity coefficients indicate that the items retained are measuring a construct, initially, we cannot be completely certain that the construct being measured is narcissism.

Whereas the results provide preliminary support for the fact that the items of the CRT-NR are measuring implicit narcissism, more studies that incorporate the measure need to be completed before that can be said with any certainty.

The sample presented some interesting limitations as well. This was best evidenced in the fact that significant correlations between the OCQ and the CRT-NR total score was limited to the Physical Sciences subscale at a university with a heavy science curriculum, and no literature or history course requirements (the OCQ contains scales asking for knowledge related to historical names and events, authors and characters, and twentieth century names).

A relatively clear direction has emerged for the continued validation of this new measure in future studies. Firstly, future studies should be conducted using a different “type” of subject pool, to see how it responds and operates in various environments and settings. Secondly, it should include additional criterion measures that may take the nature of the sample into account (i.e. using a measure of athletics if a sample is populated by athletes, etc.). And lastly, researchers may also want to investigate the possibility of a channeling model that accounts for how implicit motives (in this case, motives related to narcissism) are “channeled” into behavior via traits (see James & LeBreton, 2011; Winter, John, Stewart, Klohnen, & Duncan, 1998). These future studies can provide a more comprehensive viewpoint on what the CRT-NR is measuring, and how well it measures it.

Summary

This initial investigation into the creation of a Conditional Reasoning Test for narcissism was met with some successes, and some significant challenges that need to be addressed in a future study. The attempt to write a set of items that was internally consistent and showed good model fit in an IRT analysis was successful. However, much remains to be seen about the relationship of those items to the trait of narcissism and to other metrics related to narcissism. Though the results of this study raises a whole host of additional questions and concerns, the fact that the basic goals were met and that there is a measure that can be used in further explorations is encouraging.

Recently, there have been attempts to upgrade the quality of narcissism in clinical psychology (e.g. Pincus et al., 2009), and it is important that other areas of psychology follow suit. Narcissism remains an important trait in organizational settings, and efforts will continue to create a valid implicit measure of the construct for use in organizational and potentially other non-clinical settings. The early stages of development of a measure can be fraught with issues, and this study was no exception, but there are promising elements in the CRT-NR. It may be years before the CRT-NR is ready for public consumption, but this first step in the journey suggests that it is a trip worth taking.

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APPENDIX 1

Justification Mechanisms for Aggression From James et al. (2005, p.74)

Justification Mechanisms for Aggression

1. Hostile attribution bias's core is an implicit assumption that (like oneself) people tend to be motivated by a desire to harm others (Anderson, 1994; Tedeschi & Nesler, 1993; Toch, 1993). This latent bias is instrumental in shaping conscious attempts to explain why others behave as they do. Such explanations show a strong predilection to attribute behavior to malevolent purpose and harmful intent (cf. Crick & Dodge, 1994; Dodge & Coie, 1987). Even benign or friendly acts may be credited to hidden, hostile agendas designed to inflict harm. The attributions of hostile intent are central to the aggressive person's attempts to rationalize his or her own hostile behaviors as acts of self-defense intended to ward off physical or verbal attack.
 2. Potency bias is grounded in the implicit assumption that interactions with others are contests to establish dominance versus submissiveness (Anderson, 1994; Gay, 1993; Millon, 1990). This bias unconsciously shapes framing; the actions of others pass through a perceptual prism primed to distinguish (a) strength, assertiveness, dominance, daring, fearlessness, and bravery from (b) weakness, impotence, submissiveness, timidity, compliance, and cowardice (James & Mazerolle, 2002). Such framing promotes reasoning that the use of aggression to dominate others demonstrates strength, bravery, control, and fearlessness. Not acting aggressively is associated with weakness, fear, cowardice, and impotence. An aggressive person may thus rationalize aggression by reasoning (a) that aggression is an act of strength or bravery that gains respect from others and (b) that to show weakness is to invite powerful others to take advantage of you.
 3. Retribution bias centers on an implicit assumption that exacting retribution is of greater consequence than preserving or maintaining a relationship. This bias surfaces as a proclivity to favor retaliation as a more rational behavior than reconciliation (cf. Bradbury & Fincham, 1990; Dodge, 1986; Laursen & Collins, 1994). For example, aggression is seen as justifiable if it is intended to restore respect or to exact restitution for a perceived wrong. Retaliation is thus assumed to be more reasonable than forgiveness, vindication appears more reasonable than reconciliation, and obtaining revenge appears more reasonable than maintaining a relationship. This bias often underlies justifications for aggression engendered by wounded pride, challenged self-esteem, and perceived disrespect (cf. Baumeister, Smart, & Boden, 1996).
 4. Victimization by powerful others bias has as a nucleus an implicit assumption that the powerful will inflict harm on the less powerful (Averill, 1993; Finnegan, 1997; Toch, 1993). This assumption underlies a conscious proclivity to see oneself as the victim of inequity, exploitation, injustice, and oppression by those who are more powerful in one's life (e.g., parents, teachers, supervisors, employing organizations, or institutions such as the Internal Revenue Service). Framing of events, hypotheses about cause and effect, and confirmatory searches for evidence both engender and reinforce inferences that people are being victimized by powerful others. This reasoning furnishes the foundation for justifying acts of aggression as warranted corrections of inequities or legitimate strikes against oppression.
 5. Derogation of target bias consists of an unconscious tendency to characterize those one wishes to make (or has made) targets of aggression as evil, immoral, or untrustworthy (cf. Wright & Mischel, 1987). To infer or associate such traits with a target makes the target more deserving of aggression.
 6. Social discounting bias has at heart an implicit assumption that social customs restrict free will and the opportunity to satisfy needs. Reasoning shaped by this latent bias reflects disdain for traditional ideals and conventional beliefs (cf. Finnegan, 1997; Loeber & Stouthamer-Loeber, 1998; Millon, 1990). For example, attempts to identify the most logically plausible causes of social events typically lean toward the cynical and critical. Reasoning will further evidence a lack of sensitivity, empathy, and concern for social customs, often accompanied by the absence of rational prohibitions against behaving in socially unorthodox ways. Socially deviant behavior intended to harm others is rationalized by inferring that it allows one to attain freedom of expression, release from the shackles of social customs, and liberation from confining social relationships.
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APPENDIX 2

NPI-40 items (from Raskin & Terry, 1988)

1. A. I have a natural talent for influencing people.
B. I am not good at influencing people.
2. A. Modesty doesn't become me.
B. I am essentially a modest person.
3. A. I would do almost anything on a dare.
B. I tend to be a fairly cautious person.
4. A. When people compliment me I sometimes get embarrassed.
B. I know that I am good because everybody keeps telling me so.
5. A. The thought of ruling the world frightens the hell out of me.
B. If I ruled the world it would be a better place.
6. A. I can usually talk my way out of anything.
B. I try to accept the consequences of my behavior.
7. A. I prefer to blend in with the crowd.
B. I like to be the center of attention.
8. A. I will be a success.
B. I am not too concerned about success.
9. A. I am no better or worse than most people.
B. I think I am a special person.
10. A. I am not sure if I would make a good leader.
B. I see myself as a good leader.
11. A. I am assertive.
B. I wish I were more assertive.
12. A. I like to have authority over other people.
B. I don't mind following orders.
13. A. I find it easy to manipulate people.
B. I don't like it when I find myself manipulating people.
14. A. I insist upon getting the respect that is due me.
B. I usually get the respect that I deserve.

15. A. I don't particularly like to show off my body.
B. I like to show off my body.
16. A. I can read people like a book.
B. People are sometimes hard to understand.
17. A. If I feel competent I am willing to take responsibility for making decisions.
B. I like to take responsibility for making decisions.
18. A. I just want to be reasonably happy.
B. I want to amount to something in the eyes of the world.
19. A. My body is nothing special.
B. I like to look at my body.
20. A. I try not to be a show off.
B. I will usually show off if I get the chance.
21. A. I always know what I am doing.
B. Sometimes I am not sure of what I am doing.
22. A. I sometimes depend on people to get things done.
B. I rarely depend on anyone else to get things done.
23. A. Sometimes I tell good stories.
B. Everybody likes to hear my stories.
24. A. I expect a great deal from other people.
B. I like to do things for other people.
25. A. I will never be satisfied until I get all that I deserve.
B. I take my satisfactions as they come.
26. A. Compliments embarrass me.
B. I like to be complimented.
27. A. I have a strong will to power.
B. Power for its own sake doesn't interest me.
28. A. I don't care about new fads and fashions.
B. I like to start new fads and fashions.
29. A. I like to look at myself in the mirror.
B. I am not particularly interested in looking at myself in the mirror.

30. A. I really like to be the center of attention.
B. It makes me uncomfortable to be the center of attention.
31. A. I can live my life in any way I want to.
B. People can't always live their lives in terms of what they want.
32. A. Being an authority doesn't mean that much to me.
B. People always seem to recognize my authority.
33. A. I would prefer to be a leader.
B. It makes little difference to me whether I am a leader or not.
34. A. I am going to be a great person.
B. I hope I am going to be successful.
35. A. People sometimes believe what I tell them.
B. I can make anybody believe anything I want them to.
36. A. I am a born leader.
B. Leadership is a quality that takes a long time to develop.
37. A. I wish somebody would someday write my biography.
B. I don't like people to pry into my life for any reason.
38. A. I get upset when people don't notice how I look when I go out in public.
B. I don't mind blending into the crowd when I go out in public.
39. A. I am more capable than other people.
B. There is a lot that I can learn from other people.
40. A. I am much like everybody else.
B. I am an extraordinary person.