

INVESTIGATING ALTERNATIVE RESPONSE SETS WITH THE NARCISSISTIC
PERSONALITY INVENTORY: VALIDATION OF A NEW LIKERT VERSION

by

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(Under the Direction of W. Keith Campbell)

ABSTRACT

The Narcissistic Personality Inventory (NPI) is one of the most popular measures of trait narcissism. However, its use of a forced-choice response set may be problematic, not only for participants in terms of user experience, but also for researchers in terms of the psychometric properties of the measure. The purpose of the current research was to create and validate a new Likert version of the NPI. Study 1 investigated whether the Likert NPI differed from the original with regard to socially desirable responding, participant experience, and response time. The Likert NPI was no easier to fake than the original and was evaluated as being equally valid by participants. In addition, the Likert NPI proved faster to administer, offering a time savings over the original. Study 2 examined the reliability, validity and factor structure of the two formats. The Likert NPI manifested superior reliability and complementary construct validity to the original, and exhibited similar model fit with existing factor structures. Together these studies provide initial evidence that the Likert NPI can justifiably be used in place of the original.

INDEX WORDS: Narcissism, Narcissistic Personality Inventory, Personality Assessment

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DEDICATION

To my husband, Dr. Eric Talevich, for his enduring love and support during our time together in graduate school.

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CHAPTER 1

INTRODUCTION

Narcissism is a topic of increasing interest within the social-personality psychology literature (Campbell & Miller, 2011). Generally, narcissism is defined as a grandiose or inflated sense of self, which is maintained via characteristic self-regulatory processes such as admiration-seeking and interpersonal exploitation (see Morf & Rhodewalt, 2001, for a review). Research on narcissism has been notably advanced by self-report measures. However, the most popular of these, the 40-item Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), has potential problems with regard to its response set. Notably, the NPI uses a forced-choice response format in which respondents must choose between a “narcissistic” response option (e.g., “I like to be the center of attention.”) and a “non-narcissistic” option (e.g., “I prefer to blend in with the crowd.”). This response format may lead to psychometric problems and an unstable factor structure due to reduced variance, and could negatively impact participant experience. The present paper aims to address these issues by creating a new response set for the NPI using Likert scales and evaluating the extent to which it corrected for the problematic aspects of the forced-choice NPI, while maintaining adequate measurement of the narcissism construct. Before discussing the current research, however, I review the trait conceptualization of narcissism and concerns with the current NPI version.

Trait Conceptualizations of Narcissism and the Creation of the NPI

Narcissism has traditionally been conceptualized as a personality trait that varies normally in the population (Foster & Campbell, 2007). This is in contrast to the way in which

narcissism has traditionally been discussed in clinical psychology in terms of narcissistic personality disorder (NPD). In general, NPD is considered to be an extreme form of trait narcissism (Miller, Widiger, & Campbell, 2010). Although the two share several characteristics, namely grandiosity and antagonism (i.e., low agreeableness; Cain, Pincus, & Ansell, 2008; Miller, & Campbell, 2008), NPD is thought to contain much more vulnerability, whereas trait narcissism is considered more emotionally resilient. In fact, trait narcissism is often used interchangeably – albeit imprecisely – with grandiose narcissism, a type of narcissism characterized by aggression, dominance, and overt grandiosity. Individuals high in grandiose narcissism tend to have high self-esteem, positive affect, and are generally psychologically healthy (Miller et al., 2011; Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004). In contrast, NPD is often considered a mix of both grandiose and vulnerable narcissism, the latter being a type of narcissism characterized by an insecure grandiosity, low self-esteem, feelings of inadequacy and incompetence, and associated with negative psychological outcomes (Miller et al., 2011).

Given this disparity, it is interesting that the primary measure of trait narcissism, the NPI (Raskin & Hall, 1979), was based on the criteria for NPD that appeared in the Diagnostic and Statistical Manual of Mental Disorders-III (DSM-III; American Psychiatric Association [APA], 1980). Nonetheless, the authors of the NPI were clear in stating that it was developed with the principal intention of being used to measure individual differences in narcissism, not as a diagnostic measure, and that DSM-III criteria were simply used as a “conceptual template” (Raskin & Terry, 1988). The DSM-III criteria used include: (a) grandiose sense of one’s self-importance; (b) preoccupation with fantasies of unlimited success, power, brilliance, beauty, or ideal love; (c) exhibitionism; (d) responds to criticism, indifference, or defeat either with cool

indifference or with marked feelings of rage, inferiority, shame, humiliation, or emptiness; (e) entitlement, expecting special favors without assuming reciprocal responsibilities; (f) exploitativeness; (g) relationships vacillate between extremes of overidealization and devaluation; and (h) lack of empathy (APA, 1980).

Using the above criteria Raskin and Hall (1979) identified an initial list of 220 dyadic (i.e., forced-choice) items, which was then culled to 80 items after examining reliability and item-total correlations. From these items they created two alternate forms of the NPI (i.e., A and B), each with 40 items. Across further, mostly unpublished studies (with exception to Raskin & Hall, 1981), the items were further reduced to a total of 54. Emmons (1984, 1987) conducted a series of factor analyses on this version and found converging evidence for a four-factor structure in 37 of the items. Raskin and Terry (1988), asserting that the means of selection used by Emmons (1984, 1987) were overly conservative, again refined the 54-item NPI to better reflect the multidimensionality of the narcissism construct. They removed seven non-monotonic items and subjected the resulting 47-items to a principal components analysis (PCA). After finding evidence for a seven-factor solution they removed seven more items with poor loading behavior for a final 40-item measure. This 40-item, forced-choice version has gone on to become the most widely used measure of trait narcissism in the social-personality psychology literature (Tamborski & Brown, 2011).

Since the forced-choice version was established there has only been one previous attempt to modify the response set of the NPI. Barelds and Dijkstra (2010) created a Likert-type version of the NPI when they adapted it for use with Dutch samples. However, it was only compared directly to the original NPI during pilot testing, and the new version was validated alone using

student and community samples against only four criterion variables. The present study proposes a much more comprehensive investigation of a Likert NPI.

Potential Measurement Issues of the NPI

In this section, I address four key issues surrounding the established forced-choice format of the NPI: factor structure stability, psychometric properties, socially desirable response behavior, and participant experience.

Factor Structure of the NPI

Research on the factor structure of the NPI has largely shown it to be unstable. As discussed above, Emmons (1984, 1987) used PCA and exploratory factor-analysis (EFA) to extract four factors (i.e., leadership/authority, superiority/arrogance, self-absorption/self-admiration, and exploitativeness/entitlement). Raskin and Terry (1988), refining the NPI to better measure the DSM-III criteria that it was based on, derived seven factors (i.e., exploitativeness, exhibitionism, entitlement, superiority, self-sufficiency, authority, and vanity). Despite the fact that the authors intended the NPI to have a definite structure, most researchers who use the NPI have opted to use total scores to measure overall narcissism, possibly due to the inadequate reliabilities (i.e., $\alpha < .70$, Nunnally, 1978) exhibited by some of the subscales (e.g., Raskin & Terry, 1988). This practice has been criticized by those who feel that doing so masks underlying variance in the construct (Brown, Budzek, & Tamborski, 2009; Miller, Price, & Campbell, 2012). Recent research has subsequently revisited the question of the NPI's underlying factor structure in an effort to find a more stable solution.

The first of these recent studies used a combination of PCA and confirmatory factor analysis (CFA) to extract a 2-factor solution composed of power and exhibitionism, and a 3-factor solution with the additional dimension of "being a special person" (Kubarych, Deary, &

Austin, 2004). Using EFA, Corry, Merritt, Mrug, and Pamp (2008) found evidence for a 2-factor solution comprised of leadership/authority and exhibitionism/entitlement. Finally, Ackerman and colleagues (2011) combined these methods to produce a 3-factor solution containing the factors of leadership/authority, grandiose exhibitionism, and entitlement/exploitativeness. While overall there is mixed evidence for the true factor structure of the NPI, recent converging evidence suggests a parsimonious solution exists consisting of 2-3 distinct factors. This lends support to the idea that narcissism as measured by the NPI is not a unidimensional construct, even if the exact nature of its underlying dimensions is still a matter of debate. Given the past difficulties identifying a stable factor-structure for the NPI, several researchers have suggested that the NPI be altered from a forced-choice format to a normative format employing Likert scales (Corry et al., 2008; Kubarych et al., 2004) to increase variance. The current paper sought to address this by examining the factor structure of both the original NPI and a modified Likert version to see whether they exhibited the same underlying factors.

Ipsative vs. Normative Measures

Measures that use forced-choice formats, such as the NPI, are often categorized as *ipsative*, whereas measures that use Likert or rating scales are categorized as *normative* (Cattell, 1944). Ipsative measures are associated with a number of psychometric problems, including inflated reliabilities and an inability to be factor-analyzed (see Baron, 1996; Johnson, Wood, & Blinkhorn, 1988, for reviews). Indeed their use in personality research and selection procedures is a matter of contention divided amongst those advocating selective use (e.g., Baron, 1996; Heilbrun, 1963; Saville & Willson, 1991) and those advocating complete disuse (e.g., Closs, 1996; Cornwell & Dunlap, 1994; Johnson et al., 1988). However, not all forced-choice measures are equivalent. Hicks (1970) delineates three different types of measures: *fully ipsative*, *partially*

ipsative, and *forced-choice normative*. These are important distinctions as measurement issues decline with decreasing ipsativity (Hicks, 1970; Johnson et al., 1988).

Fully ipsative measures are those in which scale scores for each individual sum to a constant. These include measures where, for example, respondents are asked to rank-order a set of three activities from most to least appealing, or measures in which individuals are forced to rate which of two alternatives are “most” and “least” like them. In such cases it is impossible to make interindividual comparisons since everyone will have the same total score.

Partially ipsative measures are those in which not all items are ranked or rated by respondents, not all item alternatives are scored by researchers, or item alternatives are differentially scored or weighted. Importantly, such scales often pair item alternatives that represent two different scales (i.e., neuroticism, extraversion) such that agreeing to one attribute necessarily causes a depression in the score for the other attribute and items are thus not independent.

The NPI is most closely associated with what Hicks (1970) terms forced-choice normative measures, the critical difference being that such measures never pair items representing two different scales. The NPI pairs one “narcissistic” response option (e.g., “Modesty doesn’t become me.”) with one “non-narcissistic” option (e.g., “I am essentially a modest person.”), which together represent a single bipolar scale of the construct. While still forced-choice, each item is independent, allowing such measures to avoid the majority of problems associated with ipsative measures and behave more similarly to normative measures. Indeed, Foster and Campbell (2007) found that scores on the NPI are dimensional, similar to five-factor personality traits. Nonetheless, since the NPI only allows for dichotomous responding, it will necessarily have less variance than an equivalent, fully normative measure. To

address this, the current paper examined whether a modified Likert NPI produced improved psychometric properties over the original.

Social Desirability

Conversely, one reason why forced-choice measures may be preferred to Likert measures is that they are thought to reduce the extent to which participants will adjust their responses to appear socially desirable. While such reasoning was never documented in publications on the NPI to my knowledge, the authors of the measure may have felt that since narcissism is not a socially desirable trait, a forced-choice format might help elicit honest responding. Research comparing the amount of socially desirable responding on forced-choice and normative measures has found some support for the notion that the former is slightly more effective against faking (Bowen, Martin, & Hunt, 2002; Martin, Bowen, & Hunt, 2002). However, as others have pointed out (e.g., Meade, 2004), when participants are able to form clear hypotheses about what is considered favorable in the situation (particularly when measures are used for selection), even forced-choice measures may be subject to faking. In the case of the NPI, many of the “narcissistic” alternatives are by their nature socially undesirable (e.g., “I find it easy to manipulate people.”). Similarly, since the forced-choice format pairs “narcissistic” and “non-narcissistic” alternatives, the contrast between the two may in fact make the undesirable nature of the “narcissistic” alternative all the more apparent. Thus, it is uncertain whether the forced-choice format of the NPI is really a benefit in terms of deterring participant faking. To establish this, I assessed the degree to which the forced-choice and Likert versions of the NPI were susceptible to socially desirable responding.

Participant Experience

Perhaps more important than whether participants can manipulate a measure, is whether the measure is an accurate representation of their traits. Forced-choice originally became synonymous with ipsative because of Cattell's (1944) categorization of psychological measurement types. Ipsative measures he said, are those that ask the participant to rank or rate different alternatives in relation to the self. By requiring participants to designate a preference, these measures inherently involve a decision-making process (Meade, 2004). In contrast, normative measures, like those that use Likert scales, ask participants to rate themselves along a continuum, often in reference to the average or the norm (Cattell, 1944). Even if participants are simply asked to rate themselves as they generally are, in the absence of any comparison group, they will rate the extent to which they represent a trait in relation to how they think others will respond (Bartram, 2007). Thus, the two response formats are fundamentally different in terms of what they are asking participants to do. Additionally, while forced-choice measures attempt to present equally desirable item pairs, it is difficult to create perfectly balanced sets. As a result, some participants may feel that both alternatives apply to them and have difficulty choosing one. Consistent with this notion, there is some evidence that participants' prefer normative measures. For instance, Bowen and colleagues (2002) found that in contrast to a forced-choice version of a measure, participants found the normative (i.e., Likert) version easier to answer, less confusing, and felt that it allowed them to present themselves as they wanted to. To assess this, participant reactions to the different NPI versions were examined.

Summary

Given the psychometric issues associated with the NPI, creating an alternative version using Likert response sets may be beneficial. In particular, a Likert version of the NPI may have

improved psychometric properties, give participants more flexibility to express their traits, and allow for more nuanced measurement of narcissism.

Review of the Nomological Network of Grandiose/Trait Narcissism

Prior to discussing the design of the present research I provide a brief overview of the criterion variables that compose the nomological network of narcissism used to validate the new Likert measure. For a Likert version of the NPI to be valid, the relationships manifested by the original NPI and those of the new Likert measure should be similar. Below, I review several of these, including broad personality factors, dark triad traits, leadership motivation, psychological functioning, and externalizing behavior.

Broad Personality Factors

With regard to five-factor personality traits, narcissism – as measured by the NPI – has been shown to manifest a characteristic pattern of relationships. In general, scores on the NPI are positively related to extraversion, and negatively related to agreeableness and neuroticism (Miller et al., 2010; Miller & Campbell, 2008; Paulhus & Williams, 2002), a pattern that has been replicated in examinations of grandiose narcissism composites (Miller et al., 2011). It is the relationship with extraversion and neuroticism that sets it apart from the pattern manifested by vulnerable narcissism, which often shows the inverse. Parental and thin-slice ratings of big five personality among individuals high in trait/grandiose narcissism show a similar pattern of results to those from self-reports, although parent-ratings are higher for antagonism (i.e., low agreeableness; Miller et al., 2010), and zero-acquaintance (i.e., stranger) ratings are higher for extraversion (Miller et al., 2011). This is consistent with behavioral research finding that people tend to like narcissists in the short-term (Back, Schmukle, & Egloff, 2010; Paulhus, 1998), but increasingly less over time as the façade fades and narcissists' hostile and antagonistic

interpersonal nature shows through (e.g., Campbell & Foster, 2002; Campbell, Foster, & Finkel, 2002).

Personality can also be examined using interpersonal circumplex (IPC) models, which are useful for looking at problematic interpersonal styles. Research has shown that narcissism as measured on the NPI is strongly related to agency and weakly related to communion (Bradlee & Emmons, 1992; Gurtman, 1992; Ruiz, Smith, & Rhodewalt, 2001). Stronger negative correlations with communion have been found in research using grandiose composites (Miller, Price, Gentile, Lynam, & Campbell, 2012).

Dark Triad

The dark triad is composed of three interrelated, yet distinct pathological personality styles: narcissism, psychopathy, and Machiavellianism (Paulhus & Williams, 2002). Narcissism in this instance refers to grandiose narcissism as vulnerable narcissism has its own divergent triad (Miller et al., 2010). Psychopathy, in its sub-clinical manifestation, is characterized by manipulateness, low empathy and affect, sensation-seeking, and antisocial behaviors. Machiavellianism is a personality style named after the writings of Niccolò Machiavelli and is described as being cold, manipulative, and power-driven (Christie & Geis, 1970). The three personality styles were theorized to be interrelated because of their shared attributes of callousness, self-promotion, and aggressiveness (Paulhus & Williams, 2002). With regard to five-factor traits, psychopathy tends to be negatively related or unrelated to neuroticism, depending on whether psychopathy is divided into factors or measured as a global score, and shares a negative relationship with conscientiousness along with Machiavellianism (Lee & Ashton, 2005; Miller et al., 2010; Paulhus & Williams, 2002). Results regarding extraversion are mixed, with some studies showing that both narcissism and psychopathy are positively related to

high extraversion (Paulhus & Williams, 2002), and other research showing that the relationship only holds for narcissism (Lee & Ashton, 2005; Miller et al., 2009). All three personality styles however, are related to high antagonism and immodesty.

Leadership Motivation

The research concerning the effect of narcissism on leadership has produced mixed results, indicating both positive and negative outcomes (see Campbell & Campbell, 2009; Campbell, Hoffman, Campbell, & Marchisio, 2011; Rosenthal & Pittinsky, 2006, for reviews). There is ample evidence that narcissists are drawn to leadership roles and tend to emerge as leaders in group contexts. For instance, Brunell and colleagues (2008) found that narcissism predicted leadership emergence in leaderless group discussion, regardless of whether it was self-reported, reported by other members of the group, or assessed by experts. The authors further found that this relationship was driven by a desire for power, not attention-seeking. Narcissists also tend to emerge as leaders of groups regardless of whether rewards are individual or tied to team performance, though they perform better in the latter condition (Neuvicka, De Hoogh, Van Vianen, Beersma, & McIlwain, 2011). It has been suggested that narcissists emerge as leaders because they convey an image of confidence that makes them appear ideal for leadership positions (Brunell, et al., 2008). Recent research supports this notion, finding that leader narcissism is related to positive perceptions of authority and effectiveness by group members (Neuvicka, Ten Velden, De Hoogh, & Van Vianen, 2011).

In contrast to expectations however, research has found less consistent results regarding the relationship between narcissism and leader effectiveness. In short-term group contexts, narcissism has been shown to negatively impact performance, as teams with narcissistic leaders tend to block contributions by other group members (Neuvicka, Ten Velden, et al., 2011). This is

consistent with research showing that teams with narcissistic leaders are less verbal and engage in less individual decision-making, indicating that narcissistic leaders tend to dominate and take over coordination of the task (Nevicka, De Hoogh, et al., 2011). In long-term contexts, leader narcissism among CEOs has been shown to be either unrelated to organizational performance (Resick, Whitman, Weingarden, & Hiles, 2009) or related to volatile performance characterized by extreme outcomes, both positive and negative (Chatterjee & Hambrick, 2007). In sum, narcissists seem to be drawn to leadership roles and emerge as leaders in group contexts, regardless of their actual effectiveness in such roles.

Psychological Functioning

In general, trait narcissism measured by the NPI is negatively or unrelated to anxiety, depression, and distress, and positively related to subjective well-being and positive affect (Miller et al., 2010; Sedikides et al., 2004). Similar results have been found with grandiose narcissism composites (e.g., Miller et al., 2011; Miller, Gentile, Wilson, & Campbell, 2013). Likewise, grandiose narcissism tends to manifest far fewer significant relationships with a variety of personality disorders than its vulnerable counterpart.

Externalizing Behavior

In terms of externalizing behaviors, there is research showing a positive relationship between narcissism and drinking behaviors (Luhtanen & Crocker, 2005; Miller et al., 2010), but not substance use. Furthermore, while narcissism has been linked to aggression in response to provocation (Twenge & Campbell, 2003) and antisocial behaviors (e.g., physical fights, stealing), it has not been linked to intimate partner violence (Miller et al., 2010).

The Present Study

As reviewed above, the response set of the original NPI has proved problematic, both psychometrically and more practically with regard to user experience. By providing increased variance, a Likert version of the NPI may help resolve these issues. There are two main goals of the current paper. The *first goal* is to investigate the extent to which a Likert version of the NPI could correct for the problematic aspects of the original forced-choice version. The *second goal* is to evaluate whether anything is lost with the new version in terms of measurement of the narcissism construct.

To meet these goals, I developed a new version of the NPI with a Likert response set and tested it against the original forced-choice NPI to assess the extent of their differences with regard to user experience, factor structure, and the nomological network of narcissism. In Study 1, a between-subjects design was used to assess whether there are differences between the two versions with respect to the difficulty of use, response time, and honest responding. In Study 2, a within-subjects design was used to examine the reliability, validity, and factor structure, of the new measure. With regard to reliability, I examined the internal consistency of the new measure, as well as alternate forms reliability to see how the two versions differ. Regarding validity, I examined the pattern of convergent and discriminant validity of each NPI version with a number of constructs in narcissism's nomological network. Lastly, I examined the factor structure of the two NPI versions to see if they exhibit the same underlying structure.

Each study contained two samples of participants, one undergraduate and one general adult sample collected online. This was done to strengthen confidence in the results via replication, as well as to obtain more generalizable results.

CHAPTER 2

STUDY 1

Method

Participants and Procedure

Sample A. 389 participants were recruited from the undergraduate research participant pool at the University of Georgia. Of these, two were removed for excessive missing data (i.e., > 20%). Additionally, after finishing the study 39 participants requested that their data be removed from all analyses. The remaining sample contained 348 college students (204 females, 144 males) with a mean age of 19.72 ($SD = 2.01$). The ethnic breakdown was as follows: 234 White, 43 Black/African American, 30 Asian, five Hispanic/Latino, one other, five did not specify, and 30 identified as more than one ethnic or racial group. Participants received a half hour of research credit in return for their participation.

Sample B. 425 participants were recruited via Amazon's Mechanical Turk (MTurk) website. Of these, 14 were removed because their survey completion time was markedly less than what was expected for valid responding, and one was removed because her specified age was under 18. Additionally, 28 participants requested that their data be removed from all analyses. The remaining sample contained 382 adults (172 females, 209 males, one did not say) living in the United States with a mean age of 30.41 ($SD = 11.60$). Nearly all participants (96.6%) said that English was their first language. The ethnic breakdown was as follows: 287 White, 23 Black/African American, 16 Asian, six Hispanic/Latino, one Native American/Alaskan, one Native Hawaiian/Pacific Islander, four other, five did not specify, and 39

identified as more than one ethnic or racial group. Participants received \$0.50 in return for their participation.

Upon giving informed consent, the participants were randomly assigned to one of four conditions: either the forced-choice or Likert NPI with standard instructions or the forced-choice or Likert NPI with instructions to respond in a socially desirable manner. Participants in the honest responding conditions completed an additional reaction measure, and a negative affect measure. All participants were asked to complete demographic information. Data were collected using an online platform.

Self-Report Measures

Narcissistic personality inventory (NPI). The NPI (Raskin & Terry, 1988) is a 40-item, self-report measure of trait narcissism that generates a global narcissism score. Participants were randomly assigned to complete either the original forced-choice version, which asks participants to choose from one of two response choices (one narcissistic in nature and the other more modest), or a modified version with a 5-point Likert (1: “strongly disagree”, 5: “strongly agree”) scale. The Likert version was created by removing the non-narcissistic items so that the measure maintained its length of 40 items. (Although some researchers advocating modification of the NPI to a Likert version have suggested using the item alternatives to bound the scale [Corry et al., 2008; Kubarych et al., 2004], I suspected that such an approach would take more time to complete and perhaps be somewhat confusing for participants). To differentiate between the two versions the forced-choice NPI will hereafter be referred to as NPI-FC, and the Likert NPI will be referred to as NPI-L.

Participants in the honest responding conditions were given the standard set of instructions, whereas those in the faking-good conditions were instructed to “respond to the

following items as if you were trying to make a good impression. That is, trying to present yourself as well adjusted, without any psychological or personality faults.” The reliabilities in Sample A and B were adequate in both the honest responding (NPI-FC: $\alpha = .82$ and $\alpha = .89$; NPI-L $\alpha = .90$ and $\alpha = .94$, respectively), and the faking-good (NPI-FC: $\alpha = .87$ and $\alpha = .91$; NPI-L: $\alpha = .91$ and $\alpha = .93$, respectively) conditions.

Reaction measure. The reaction measure was composed of three sets of statements to assess face validity (e.g., “The actual content of the questionnaire was clearly related to personality.”), perceived predictive validity (e.g., “My answers on the questionnaire are a good indicator of my personality traits.”), and social validity/difficulty (e.g., “I thought questionnaire items were difficult to answer.”). The face validity and perceived predictive items were adapted from published measures of applicant reactions to (Smither, Reilly, Millsap, Pearlman, & Stoffey, 1993), and expectations of selection procedures (Schreurs, Derous, Proost, Notelaers, & De Witte, 2008). The social validity items were created by the author. All statements were answered using a 5-point Likert scale (1: “strongly disagree”, 5: “strongly agree”). Items also contained an optional free response component. This measure was only administered to participants in the two honest responding conditions. Reliabilities were adequate across the face validity (NPI-FC: $\alpha = .84$, NPI-L: $\alpha = .79$), perceived predictive validity (NPI-FC: $\alpha = .85$, NPI-L: $\alpha = .88$), and social validity scales (NPI-FC: $\alpha = .87$, NPI-L: $\alpha = .82$) in Sample A. The reliabilities were similar for the three scales (face validity: NPI-FC: $\alpha = .82$, NPI-L: $\alpha = .79$; perceived predictive validity: NPI-FC: $\alpha = .87$, NPI-L: $\alpha = .89$; social validity: NPI-FC: $\alpha = .88$, NPI-L: $\alpha = .91$), in Sample B.

Negative state affect measure. The affect measure consisted of five words designed to assess negative state affect (i.e., “hostile,” “annoyed,” “frustrated,” “irritable,” and “angry”).

Items were answered using a 5-point Likert-type scale (1: “not at all”, 5: “extremely”). Like the reaction measure, this measure was only administered to participants in the two honest responding conditions. Alphas in Sample A were .78 (NPI-FC) and .81 (NPI-L). Alphas in Sample B were .88 (NPI-FC) and .93 (NPI-L).

Response Time

Using Qualtrics meta-data, participants in the two honest responding conditions were timed to assess how long it took them to complete their assigned version of the NPI to see whether there was a time savings associated with either response set.

Results

Social Desirability

First, the honest and faking-good conditions were compared to examine whether the Likert response format was more susceptible to faking than the forced-choice response format. The descriptive statistics for both samples are presented in Table 1. In both samples there was a non-significant difference between the honest and faking conditions [Sample A: NPI-FC: $t(167) = 1.38$, *ns*; NPI-L: $t(177) = 1.33$, *ns*; Sample B: NPI-FC: $t(195) = 1.63$, *ns*; NPI-L: $t(183) = 1.83$, *ns*] regardless of which NPI version was used. Figure 1 shows the item-level means across all conditions for Sample A and B. As depicted, the item level means for the honest responding and faking-good groups follow roughly the same trajectory. Taken together, these results suggest that NPI-L is not any more susceptible to socially desirable responding than the NPI-FC.

Participant Reactions

Next, the two honest responding conditions were compared to see whether there was a difference between the two formats in terms of participant experience. The results of the analyses are shown in Table 2. In Sample A, there were no significant differences between the NPI-FC

and NPI-L in terms of face validity [$t(182) = .92, ns$], perceived predictive validity [$t(182) = -1.31, ns$], or social validity [$t(167.87) = .01, ns$]. Similar results were found for Sample B [face validity: $t(183) = .21, ns$; perceived predictive validity: $t(174.77) = 1.02, ns$; social validity: $t(183) = .07, ns$]. Thus, participants in each condition did not differ with regard to their perceptions of the two response formats. Examining the free response comments confirmed that some participants had a hard time deciding between the forced-choice options, feeling that the choices were either too extreme and neither applied to them, or that either statement could apply depending on the situation. However, based on the similar ratings between the NPI-FC and NPI-L, this did not seem to be enough of an issue to impact their overall evaluation of the forced-choice format.

Negative Affect

Participants in the honest responding conditions were then compared on negative affect to examine whether one or the other format proved more frustrating. Participants in Sample A did not differ in terms of negative affect after completing either the NPI-FC ($M = 6.48, SD = 2.08$) or NPI-L [$M = 6.87, SD = 2.49, t(182) = -1.15, ns$]. In contrast, participants in Sample B reported significantly more negative affect after taking the NPI-L ($M = 6.88, SD = 3.45$) than after completing the NPI-FC [$M = 5.92, SD = 2.05, t(143.25) = -2.29, p < .05, d = -.34$]. This difference, especially because it was only found in one sample, should be treated with caution.

Response Time

Lastly, the participants in the honest responding conditions were compared on response time to see if there was a time savings associated with either of the formats. A small number of participants were identified as having extremely long finish times (i.e., greater than three standard deviations above the mean) skewing the overall distribution. These outliers were

subsequently omitted from the following analyses. In Sample A, the participants took an average of 253.13 seconds ($SD = 115.59$) to complete the NPI-FC and 210.25 seconds ($SD = 130.51$) to complete the NPI-L. This difference was significant [$t(179) = 2.33, p < .05, d = .35$]. Similarly, in Sample B, participants took on average 215.14 seconds ($SD = 90.69$) to complete the NPI-FC and 141.90 seconds ($SD = 62.19$) to complete the NPI-L. This difference was again significant [$t(163.47) = 6.30, p < .001, d = .94$], suggesting that there is a time savings associated with the Likert format. The fact that participants in Sample B were faster on average than Sample A, is most likely due to practice effects, as MTurk users are accustomed to routinely completing surveys and tasks online.

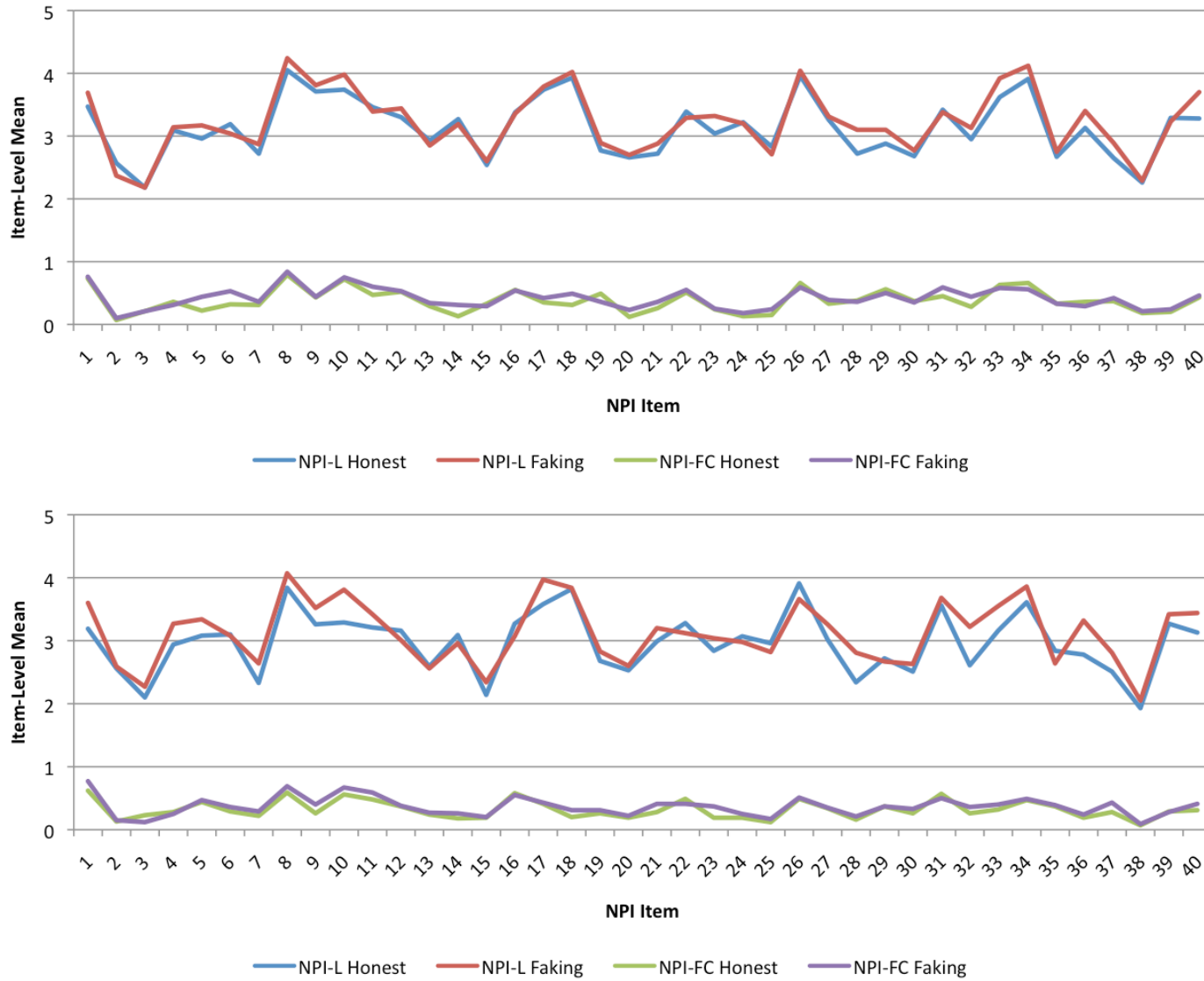


Figure 1. Item-level means across honest and faking-good conditions for Sample A (top) and B (bottom).

Table 1

Descriptive Statistics for the Forced-Choice and Likert Versions of the NPI in Honest and Faking-Good Conditions

Sample	Honest				Faking-Good			
	NPI-FC		NPI-L		NPI-FC		NPI-L	
	N	M (SD)	N	M (SD)	N	M (SD)	N	M (SD)
A	89	15.17 (6.21)	95	125.43 (17.35)	80	16.64 (7.65)	84	129.05 (19.17)
B	95	12.76 (7.66)	90	118.67 (24.55)	102	14.63 (8.43)	95	124.77 (20.72)

Table 2

Differences in Reaction Ratings between NPI Forced-Choice and Likert Response Formats

Measure	NPI-FC		NPI-L		<i>t</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Sample A					
Face Validity	20.93	2.91	20.55	2.78	.92
Perceived Predictive Validity	15.55	3.64	16.24	3.54	-1.31
Social Validity/Difficulty	9.91	3.68	9.91	2.92	.01
Sample B					
Face Validity	21.15	3.00	21.06	2.86	.21
Perceived Predictive Validity	16.98	3.46	16.41	4.08	1.02
Social Validity/Difficulty	8.25	2.87	8.22	3.43	.07

Note. Sample A: NPI-FC N = 89, NPI-L N = 95. Sample B: NPI-FC N = 95, NPI-L N = 90. * $p < .05$. ** $p < .01$. *** $p < .001$.

CHAPTER 3

STUDY 2

Method

Participants and Procedure

Sample A. 363 participants were recruited from the undergraduate research participant pool at the University of Georgia. Of these, one was removed because her survey completion time was markedly less than what was expected for valid responding, three were removed for invariant responding (i.e., responding “3” for all items across multiple measures), and 21 were removed for excessive missing data (i.e., > 20%). An additional 69 opted to have their data removed from all analyses. The remaining sample was composed of 269 undergraduates (165 females, 104 males) with a mean age of 19.71 ($SD = 2.06$). The ethnic breakdown was as follows: 210 White, 20 Asian, 16 Black/African American, two Hispanic/Latino, one Native American /Alaskan, two other, one did not specify, and 17 identified as more than one ethnic or racial group. Participants received an hour and a half of research credit in return for their participation. Upon giving informed consent, the participants were asked to complete a number of self-report questionnaires, including both the NPI-FC and NPI-L with standard instructions, and demographic information, using an online platform.

During the course of their participation participants were asked to identify three close friends and three casual friends. For the former, participants were instructed to identify three people who knew them well that they had “known for a long time, or at least since high school.” For the latter, participants were instructed to identify three people who they had “met since

coming to UGA, who could be considered casual friends or acquaintances.” Two different types of peers were sought in order to assess if length of friendship affected the way participants were seen by their peers.

Potential peer informants were contacted via email in sequential fashion and asked to complete peer-reports of personality using a modified version of the Ten Item Personality Inventory (TIPI; Gosling, Renfrow, & Swann, 2003), as well as some additional traits. This procedure was followed to try to ensure that each participant had at least one of each type of peer-report of his or her personality. Peer reports were obtained for 64.7% of the sample. Of these, 26.4% had complete peer reports, 27.1% had peer reports from only “close” friends, and 11.2% had peer reports from only “casual” friends.

Sample B. 367 participants were recruited via Amazon’s Mechanical Turk (MTurk) website. Of these, 21 were removed because their survey completion time was markedly less than what was expected for valid responding, three were removed for invariant responding (i.e., responding “3” for all items across multiple measures), and one was removed for excessive missing data. An additional 28 opted to have their data removed from all analyses. The remaining sample contained 314 adults (202 females, 111 males, one did not say) living in the United States with a mean age of 33.30 ($SD = 11.38$). Nearly all participants (95.2%) said that English was their first language. The ethnic breakdown was as follows: 232 White, 26 Black/African American, 21 Asian, three Hispanic/Latino, two Native American/Alaskan, one Native Hawaiian/Pacific Islander, two other, three did not specify, and 24 participants identified as more than one ethnic or racial group. Participants received \$1.50 in return for their participation. Upon giving informed consent, participants were asked to complete the same

measures administered to Sample A. Unlike Sample A, they were not solicited to provide contact information for peer informants.

Self-Report Measures

The same NPI versions from Study 1 were used in Study 2, the difference being that each participant completed both in addition to the measures discussed below. Reliability was high in both Sample A (NPI-FC: $\alpha = .83$, NPI-L: $\alpha = .92$) and Sample B (NPI-FC: $\alpha = .89$, NPI-L: $\alpha = .95$).

Psychological entitlement scale (PES). The PES (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004) is a nine-item self-report measure of entitlement and measures the extent to which individuals believe that they are more deserving than others. Items are scored on a 1 (“strong disagreement”) to 7 (“strong agreement”) scale. The alpha coefficient was .88 for Sample A and .91 for Sample B.

Narcissistic grandiosity scale (NGS). The NGS (Rosenthal et al., in preparation) is a 16-item measure of grandiose narcissism that asks participants to rate themselves on adjectives such as “superior” and “omnipotent” on a 1 (“not at all”) to 7 (“extremely”) scale. The alpha coefficient was .96 for both Sample A and B.

Hypersensitive narcissism scale (HSNS). The HSNS (Hendin & Cheek, 1997) is a 10-item self-report measure of vulnerable narcissism. Items are scored on a 1 (“very uncharacteristic or untrue”) to 5 (“very characteristic or true”) scale. The alpha coefficient was .79 for Sample A and .81 for Sample B.

Pathological narcissism inventory (PNI). The PNI (Pincus et al., 2009) is a 52-item self-report measure of both vulnerable and grandiose narcissism types. The PNI contains three grandiose narcissism subscales (i.e., Self-Sacrificing Self-Enhancement, Grandiose Fantasies,

and Exploitativeness) and four vulnerable narcissism subscales (i.e., Contingent Self-Esteem, Hiding the Self, Devaluing, and Entitlement Rage). Items are scored on a 1 (“not at all like me”) to 6 (“very much like me”) scale. Alpha coefficients for Sample A ranged from .80 to .94. Alpha coefficients for Sample B ranged from .82 to .94.

Structured clinical interview for DSM-IV axis II personality disorders–personality questionnaire (SCID-II-PQ). The SCID-II-PQ (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) is a 119-item self-report measure that assesses the diagnostic criteria for the DSM-IV personality disorders. For this study, only the 17 items pertaining to narcissistic personality disorder (NPD) were used. Items are scored dichotomously using a Yes/No format. The alpha coefficient was .74 for Sample A and .80 for Sample B.

PDQ-4+. The PDQ-4+ (Hyler, 1994) is a 99-item self-report measure of DSM-IV personality disorders. For this study, only the nine items pertaining to NPD were used. Items are scored dichotomously using a True/False format. The alpha coefficient was .65 for Sample A and .67 for Sample B.

Personality inventory for DSM-5 (PID5). The PID5 (Krueger, Derringer, Markon, Watson, & Skodol, 2012) is a 220-item self-report measure that assesses the 25 personality traits used to diagnose personality disorders in the DSM-5. For this study, only the 14 items pertaining to NPD (i.e., attention-seeking and grandiosity scales) were used. Items are scored on a 0 (“very false” or “often false”) to 3 (“very true” or “often true”) scale. Alpha coefficients for Sample A were .89 and .84 on the attention-seeking and grandiosity scales, respectively. The corresponding alphas for Sample B were .93 and .88.

Rosenberg self-esteem scale (RSE). The RSE (Rosenberg, 1965) is a 10-item measure of global self-esteem. Items are scored on a 1 (“strongly disagree”) to 5 (“strongly agree”) scale. The alpha coefficient was .86 for Sample A and .91 for Sample B.

HEXACO personality inventory – revised (HEXACO-PI-R). The HEXACO-PI-R (Lee & Ashton, 2004) is a 100-item measure of big five personality domains with an additional domain of honesty-humility. Items are scored on a 1 (“strongly disagree”) to 5 (“strongly agree”) scale. Alphas for the domains ranged from .79 to .85 in Sample A, and .82 to .87 in Sample B. Alphas for the facets ranged from .47 to .78 in Sample A, and .55 to .83 in Sample B.

Interpersonal adjective scales (IAS). The IAS (Wiggins, 1995) contains 64 adjectives, scored on a 1 (“extremely inaccurate”) to 8 (“extremely accurate”) scale, that provide scores on the interpersonal circumplex (IPC). The scale includes eight octant scores and scores on the two primary axes of dominance and nurturance. Alphas for the octants ranged from .70 to .89 in Sample A, and from .77 to .92 in Sample B.

Short dark triad (Short D3). The Short D3 (Paulhus & Jones, 2011) is a 27-item measure of the dark triad that provides three subscale scores of narcissism, Machiavellianism, and psychopathy. Items are rated on a 1 (“disagree strongly”) to 5 (“agree strongly”) scale. Alpha coefficients for Sample A were .71 (narcissism), .68 (Machiavellianism), and .72 (psychopathy). Alpha coefficients for Sample B were .78 (narcissism), .77 (Machiavellianism), and .79 (psychopathy).

Motivation to lead. The Motivation to Lead scale (Chan & Drasgow, 2001) is a 27-item measure of the desire for leadership. It contains three subscales: affective-identity (e.g., “I usually want to be the leader in the groups that I work in.”), noncalculative (e.g., “I never expect to get more privileges if I agree to lead a group.”), and social-normative (e.g., “It is an honor and

privilege to be asked to lead.”). Items are scored on a 1 (“strongly disagree”) to 5 (“strongly agree”) scale. Alpha coefficients for Sample A were .86 (affective-identity), .84 (noncalculative), and .78 (social-normative). Alpha coefficients for Sample B were .93 (affective-identity), .86 (noncalculative), and .84 (social-normative).

PROMIS short form – anger, anxiety, and depression. The PROMIS depression, anxiety, and anger scales (Pilkonis et al., 2011) use seven to eight self-report items to assess symptoms of anger, anxiety, and depression experienced during the previous 7 days. Items are rated on a 1 (“never”) to 5 (“always”) scale. Alpha coefficients for Sample A were .91 (anger), .92 (anxiety), and .95 (depression). Alpha coefficients for Sample B were .94 (anger), .93 (anxiety), and .96 (depression).

Crime and analogous behavior scale (CAB). The CAB (Miller & Lynam, 2003) is a self-report inventory that assesses externalizing behaviors (e.g., substance use, antisocial behavior, and intimate partner violence). For this study the short version was used, which contains 25-items and assesses alcohol use by averaging five standardized variables (i.e., use of alcohol, age of first use, current pattern of use, ever binge drinking, number of binge drinking episodes during the past month), and the remaining variables using counts. The scores on substance use, antisocial behavior, and intimate partner violence were square-root transformed prior to use to help correct for non-normality.

Peer-Report Measures

Ten item personality inventory (TIPI). The TIPI (Gosling, Rentfrow, & Swann, 2003) is a 10-item measure of the Big Five personality traits, with two items used to measure each trait. Items are rated on a 1 (“disagree strongly”) to 7 (“agree strongly”) scale. Three additional items were added to the original scale to assess modesty (“immodest, grandiose” – reverse scored),

honesty (“honest, straightforward”), and dominance (“assertive, dominant”). In addition to big five personality, peer informants were asked to rate the participant’s perceived likeability, attractiveness, and narcissism. On the TIPI, reliabilities ranged .43 to .77 for close peer-reports, and .54 to .75 for casual peer-reports. These low reliabilities are most likely due to the fact that each TIPI domain only contains two items.

Results

The distribution of NPI-FC and NPI-L scores are depicted in Figure 2. In both samples the NPI-L was more normally distributed than the NPI-FC. Sample A had mean total scores of 15.01 ($SD = 6.66$) and 116.63 ($SD = 20.41$) on the NPI-FC and NPI-L, respectively. The mean total scores in Sample B were similar, but slightly lower (NPI-FC: $M = 12.58$, $SD = 7.84$; NPI-L: $M = 111.57$, $SD = 26.02$). In both cases, the NPI-L demonstrated greater variance. Across samples males scored higher than females on both the NPI-FC [Sample A: $t(267) = 3.66$, $p < .001$; Sample B: $t(201.16) = 3.04$, $p < .01$] and the NPI-L [Sample A: $t(267) = 2.13$, $p < .05$; Sample B: $t(311) = 2.06$, $p < .05$]. Narcissism was unrelated to age in Sample A (NPI-FC: $r = -.01$ and NPI-L: $r = -.03$, both *ns*), most likely due to the restricted age range, but negatively correlated with age in Sample B (NPI-FC: $r = -.25$ and NPI-L: $r = -.22$, both $p < .001$).

Although the two formats had high alternate forms reliability (Sample A: $r = .74$, $p < .001$; Sample B: $r = .82$, $p < .001$), the magnitude of the relationship indicated that some variation might exist. To examine this further, the NPI-L scores were linearly transformed [(NPI-L Total Score / 4) – 10] as in Barelds and Dijkstra (2010), resulting in means of 19.16 ($SD = 5.10$) and 17.89 ($SD = 6.50$) for Sample A and B, respectively. The difference between the NPI-FC and modified NPI-L means was significant across samples [Sample A: $t(268) = 15.16$, $p < .001$; Sample B: $t(313) = 20.80$, $p < .001$], indicating that individuals’ scores on the NPI-L were

significantly higher than their scores on the NPI-FC. Further analyses were conducted to determine whether there were significant differences in the pattern of relations manifested by each format with external criterion measures relevant to the nomological network of narcissism. This was done using Steiger's Z-test of dependent correlations (Meng, Rosenthal, & Rubin, 1992; Steiger, 1980). Given the large number of comparisons made, a more restrictive p-value of $< .001$ was used to indicate significant differences.

Relations between NPI Formats and Non-NPI Narcissism Measures

First, I examined the relations between the two NPI formats and non-NPI measures of narcissism and self-esteem (Table 3). In general, the NPI-FC and NPI-L manifested very similar correlations across samples. Both formats were positively related to the grandiose narcissism subscales of the PNI, grandiosity (NGS), entitlement (PES), and all three measures of NPD. With exception to the Devaluing and Entitlement Rage subscales, both formats manifested small non-significant correlations with vulnerable narcissism subscales of the PNI, as well as with the HSNS. Although both formats were positively related to self-esteem, only the correlation with the NPI-L in Sample B reached significance.

Relations between NPI Formats and Personality Measures

With regard to broad personality traits, both formats manifested similar correlations across samples with self-reported domains on the HEXACO (Table 4). The pattern of correlations was as expected, with both formats being significantly negatively related to Honesty-Humility and Agreeableness, and significantly positively related to Extraversion. The correlations with Emotionality (i.e., Neuroticism) were in the expected direction, although only the correlation with the NPI-FC in Sample A was significant, and no significant relations were found with Conscientiousness and Openness. A similar pattern of relations was observed in the

close and casual peer-reports of FFM personality domains on the TIPI; however, none of the correlations were significant. The single item for modesty was negatively related to narcissism in both close and casual peer-reports, consistent with self-reported Honesty-Humility. In contrast, close and casual peer-reports produced opposite non-significant correlations between honesty and narcissism. The degree of closeness had no bearing on peer-ratings, as *Z*-tests of independent correlations found no significant differences between close and casual peer reports at the $p < .001$ level.

Overall, both the NPI-FC and NPI-L manifested similar correlations with the IPC octants. Both formats manifested their strongest positive correlations with octants associated with interpersonal dominance, and their strongest negative correlations with octants associated with submissiveness. Of note, both formats also manifested significant positive correlations with the gregarious-extraverted octant, consistent with self-reported Extraversion on the HEXACO. The only significant difference between the formats was found on the warm-agreeable octant in Sample B, which manifested a stronger negative correlation on the NPI-FC than on the NPI-L.

With regard to personality facets (Table 5), there were no significant differences between the two formats. Both the NPI-FC and NPI-L produced strong negative correlations with all facets of the Honesty-Humility domain and the gentleness facet of the Agreeableness domain, and strong positive correlations with the social boldness facet of the Extraversion domain across samples. Neither format was significantly related to any of the Emotionality or Conscientiousness facets, and with the exception of the creativity facet in Sample B, were likewise unrelated to the Openness facets.

Relations between NPI Formats and Dark Triad Traits

Next, I examined the relations between the two NPI formats and the dark triad personality constructs (Table 6). Across samples, both the NPI-FC and NPI-L were significantly positively related to all three constructs, the strongest correlation, not surprisingly, being with the narcissism subscale of the Short D3. A significant difference was found between the formats in Sample B, such that the NPI-L manifested a stronger correlation with the narcissism subscale than the NPI-FC, but no differences were found for either psychopathy or Machiavellianism.

Relations between NPI Formats and Leadership Motivation

With regard to motivation to lead, both formats manifested strong positive correlations with the affective-identity aspects of leadership, and were unrelated to the noncalculative aspects of leadership (Table 6). Although both formats were positively related to the social-normative aspects of leadership, a significant difference was found in Sample A such that the NPI-L was more strongly related to the subscale than the NPI-FC.

Relations between NPI Formats and Psychological Functioning

In general, both formats were unrelated to negative aspects of psychological functioning (Table 6). The NPI-L in Sample B manifested a significant positive correlation with anger, but no differences were found between the two formats.

Relations between NPI Formats and Externalizing Behavior

Last, I examined the relationships between the two formats and types of externalizing behavior (Table 6). Both formats manifested similar non-significant positive correlations with alcohol use, substance use, antisocial behavior, and IPV.

Interclass Correlations between the Two NPI Formats

Second-order intraclass correlations were calculated to examine the similarity of the pattern of relations produced by the two formats with the nomological network variables. The pattern manifested by each format was nearly identical across samples (Sample A: $r_{icc} = .98$; Sample B: $r_{icc} = .99$) indicating that the NPI-L does an effective job of replicating the construct validity of the NPI-FC.

Factor Structure of the NPI-FC and NPI-L

The extant factor structures are listed in Table 7. An examination of the factor-level reliabilities (Table 8) showed that in both samples, the NPI-L had superior reliability across all known factor solutions. For the remaining analyses, the data from the two samples were combined to produce a larger sample size ($N = 583$). Previous research has found that measurement invariance holds across survey responses of participants from traditional university participant pools and crowdsourcing websites (e.g., MTurk), suggesting that they can reasonably be combined (Behrend, Sharek, Meade, & Wiebe, 2011).

First, CFAs were conducted to examine the fit of the extant factor structures in the two formats. Since NPI-FC items are dichotomous they were accordingly treated as categorical, and models were fit using robust weighted least squares (WLSMV) estimation in MPlus 7. The NPI-L items were treated as continuous and models were fit using robust maximum likelihood (MLR) estimation. The fit of all CFA models was evaluated using four fit indices: (a) the chi-square goodness of fit test (χ^2), (b) the root mean square error of approximation (RMSEA; Steiger, 1990), (c) the Tucker-Lewis index (TLI; Tucker & Lewis, 1973), and (d) the comparative fit index (CFI; Bentler, 1990). While the commonly used standardized root mean square residual (SRMSR; Bentler, 1995) is reported for the NPI-L models, WLSMV estimation instead

generates a weighted root mean square residual (WRMSR), which is reported for the NPI-FC models. Although they have different metrics, they can be interpreted similarly, with smaller values indicating better fit. The consensus for model fit using the RMSEA is that values less than .08 indicate acceptable fit, whereas values below .06 indicate good fit (e.g., Hu & Bentler, 1999). For the CFI and TLI, values greater than .90 are indicative of adequate fit, whereas values at or above .95 indicate good fit.

Of all the known factor structures, only the seven-factor structure (Raskin & Terry, 1988) uses all 40 items, while the remaining structures use between 23 and 37 items, and can thus be tested against a one-factor model using all items. To assist in evaluating model fit, separate one-factor models were run for each factor structure, using only the items involved in that factor structure. For example, the Ackerman et al. (2011) three-factor solution uses 25 items, so a one-factor model was tested against it using only those 25 items. This procedure was followed to ensure that each factor structure exhibited better fit than a one-factor model with no defined subscales. Likewise, the lack of a common item pool means that with the exception of the two- and three-factor Kubarych et al. (2004) solutions, which use the same items, the factor structures could not be considered nested within each other and compared directly using a chi-square difference ($\Delta\chi^2$) test. Rather, they could only be assessed for respective fit on the basis of the fit indices.

In general, the various factor structures produced similar results in terms of model fit (Tables 9 and 10). Each factor structure fit produced a better fit of the data than its corresponding omnibus model, as indicated by the significant chi-square difference tests. In addition, comparing the Kubarych et al. (2004) two- and three-factor structure with both the NPI-FC and NPI-L data yielded a non-significant difference, indicating that the more parsimonious two-

factor model should be accepted. Next, the model fit indices were examined for each factor structure. All of the models produced a significant chi-square indicating poor fit. However, chi-square tests are sensitive to sample size, and when sample size is large, will often indicate significance. The models were thus compared on the basis of the remaining fit indices. Of the factor structures fitted to the NPI-FC data, the seven-factor model seemed to produce the best fit with an RMSEA of .04, a TLI of .90, and a CFI of .91. However, several of the more parsimonious solutions produced a similar fit to the data, indicating that no single model produced a clearly superior fit. Similar results were found for the NPI-L data, although overall the various factor solutions seemed to fit the data more poorly. In addition, the Raskin and Terry (1988) seven-factor model resulted in several Heywood cases in which the standardized factor loadings exceeded a value of 1.0, indicating the model was not viable solution.

As discussed above, the existing NPI factor structures are non-nested, and thus cannot be directly compared using traditional nested tests. Since many of the models provided a similar fit to the data, they were next compared using criterion for non-nested model selection [i.e., -2 Log Likelihood (-2LL), Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC); Table 10] to select the one with the best fit. These criteria can be used to assess the quality of model fit relative to other competing models such that the model with the lowest criterion values can be said to fit the data best. Although these are automatically generated for continuous CFA, they are not produced for CFAs using a WLSMV estimator, necessitating further analyses with the NPI-FC data.

To further examine model fit with the NPI-FC, item response theory (IRT) analyses were conducted. IRT techniques assume that an individual's response to items on a measure are the result of the properties of the measure in conjunction with the individual's relative standing on

the latent trait. One benefit of IRT is that in contrast to CFA with a WLSMV estimator, it is possible to produce non-nested model selection criteria. I conducted IRT analyses using the two-parameter logistic (2PL) model, one of the most commonly used models for dichotomous data and one that has previously been used successfully with the NPI (Ackerman, Donnellan, & Robins, 2012). The 2PL model is so named because the probability of a positive response (e.g., choosing the narcissistic response option over the non-narcissistic one) is modeled by a logistic function and it models two parameters – item difficulty and item discrimination. In this instance difficulty is the level of the latent trait (i.e., trait narcissism) necessary for an individual to have a 50% chance of selecting the narcissistic response option, and discrimination is the degree to which an item is more or less related to the latent trait, analogous to factor loadings in EFA and CFA. Using this model has generally been considered sufficient for modeling items that measure a normal range of personality (Reise & Waller, 1990; Reise & Waller, 2003). Since IRT analyses were only conducted to obtain model selection criteria for the NPI-FC, I refrain from a more in-depth discussion of IRT.

All analyses were run in IRTPRO 2.1. A unidimensional model was fit first, analogous to a one-factor model in CFA, using the Bock-Aitkin EM algorithm. Next multidimensional models were fit for the various factor solutions using the Metropolis-Hastings Robbins-Monro (MHRM) algorithm. Multidimensional models are similar to multi-factor CFAs in that they assume several dimensions underlie the construct. The model selection criteria (Table 11) indicated that as with the NPI-L, the Corry et al. (2008) two-factor solution is the best fit for the NPI-FC data. The CFA factor loadings for this model for the NPI-FC and NPI-L data are reported in Table 12 and 13, respectively.

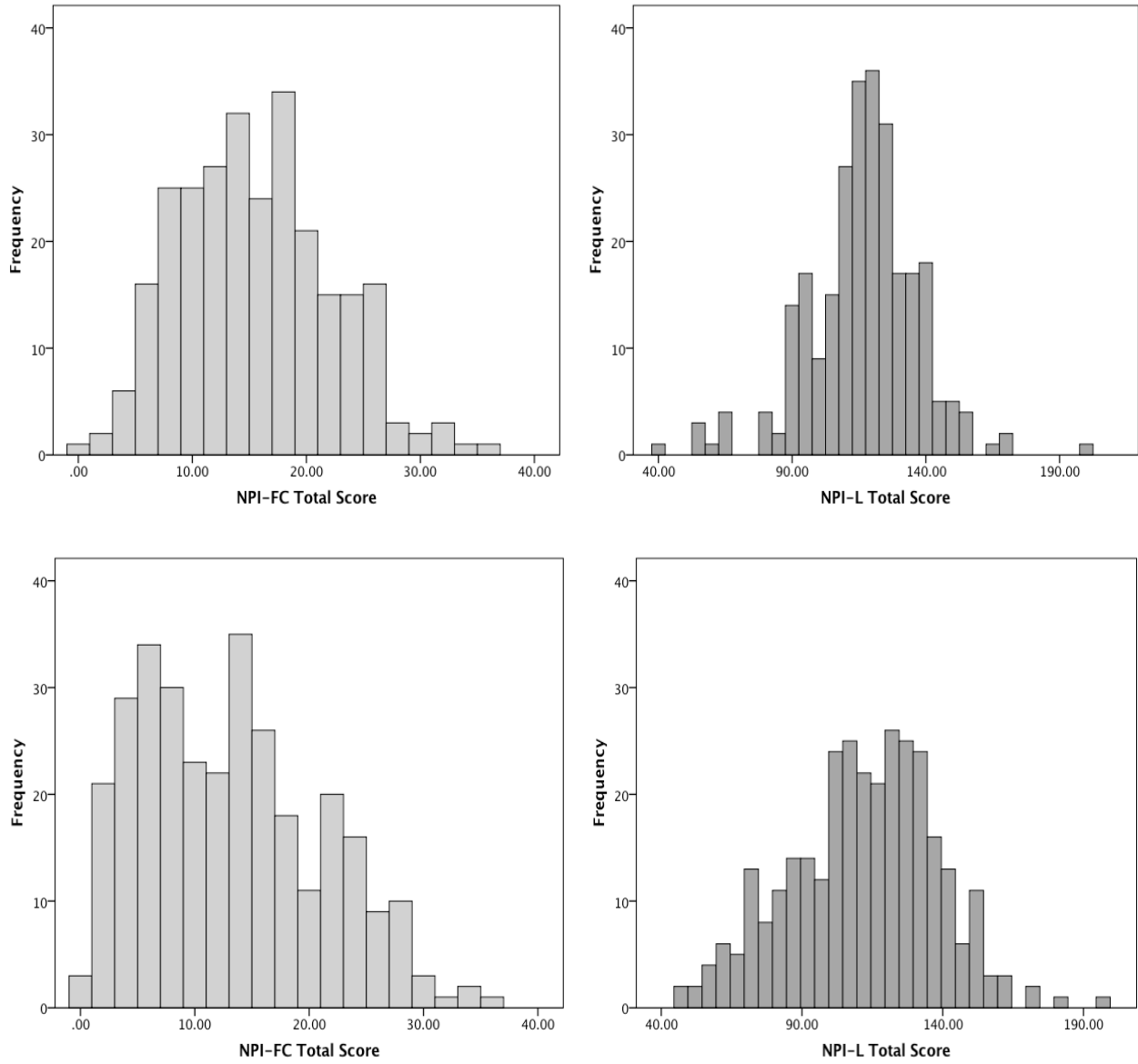


Figure 2. Distribution of NPI-FC and NPI-L total scores for Sample A (top) and B (bottom).

Table 3

Correlations between Non-NPI Narcissism Measures and the Two NPI Formats

Measure	Sample A		Sample B	
	NPI-FC	NPI-L	NPI-FC	NPI-L
PNI				
SSSE	.24*	.32*	.17	.28*
GF	.28*	.42*	.32*	.42*
E	.46*	.53*	.61*	.63*
ER	.28*	.32*	.32*	.40*
CSE	.10	.14	.12	.18
HS	.06	.19	-.02	.05
D	.19	.20	.24*	.32*
NGS	.55*	.51*	.70*	.72*
HSNS	.02	.09	.12	.18
PES	.35*	.41*	.57*	.64*
SCID-II-PQ NPD	.44*	.38*	.56*	.56*
PDQ-4+ NPD	.52*	.50*	.49*	.53*
PID5 NPD				
Attention Seeking	.55*	.54*	.66*	.66*
Grandiosity	.49*	.45*	.65*	.65*
RSE	.16	.17	.19	.24*

Note. Sample A N = 268-269; Sample B N = 314. SSSE = self-sacrificing self-enhancement; GF = grandiose fantasies; E = exploitativeness; ER = entitlement rage; CSE = contingent self-esteem; HS = hiding the self; D = devaluing. Different subscripts represent significant differences ($p < .001$) between the two different NPI formats done separately for Sample A and B. * $p < .001$.

Table 4

Correlations between Self- and Peer-Reported Personality Domains and the Two NPI Formats

Measure	Sample A		Sample B	
	NPI-FC	NPI-L	NPI-FC	NPI-L
HEXACO				
Honesty-Humility	-.51*	-.48*	-.47*	-.52*
Emotionality	-.24*	-.15	-.15	-.07
Extraversion	.31*	.29*	.39*	.40*
Agreeableness	-.29*	-.24*	-.20*	-.23*
Conscientiousness	-.01	.02	.04	.04
Openness	.01	.07	.11	.15
Close Peer-Report				
Neuroticism	.04	.04	-	-
Extraversion	.20	.19	-	-
Agreeableness	-.18	-.20	-	-
Conscientiousness	-.09	-.10	-	-
Openness	-.09	-.05	-	-
Modesty	-.36*	-.28	-	-
Honesty	-.11	-.15	-	-
Dominance	.28	.23	-	-
Likability	-.13	-.20	-	-
Attractiveness	-.13	-.14	-	-
Narcissism	.40*	.36*	-	-
Casual Peer-Report				
Neuroticism	-.02	-.06	-	-
Extraversion	.22	.11	-	-
Agreeableness	-.17	-.21	-	-
Conscientiousness	-.09	-.04	-	-
Openness	.03	.08	-	-
Modesty	-.37*	-.30	-	-
Honesty	.19	.10	-	-
Dominance	.44*	.36*	-	-
Likability	-.03	-.07	-	-
Attractiveness	-.14	-.09	-	-
Narcissism	.33	.25	-	-
IAS				
Assured-Dominant	.55*	.55*	.57*	.63*
Arrogant-Calculating	.44*	.47*	.61*	.65*
Cold-Hearted	.29*	.26*	.36*	.34*
Aloof-Introverted	-.13	-.12	-.07	-.10
Unassured-Submissive	-.37*	-.37*	-.47*	-.44*
Unassuming-Ingenuous	-.33*	-.35*	-.48*	-.45*
Warm-Agreeable	-.18	-.15	-.25* ^a	-.12 ^b
Gregarious-Extraverted	.26*	.23*	.24*	.35*

Note. Sample A N = 269, Sample B N = 314. Close peers N = 142-144. Casual peers N = 101. Different subscripts represent significant differences ($p < .001$) between the two different NPI formats done separately for Sample A and B. * $p < .001$.

Table 5

Correlations between HEXACO Personality Facets and the Two NPI Formats

Domain/Facet	Sample A		Sample B	
	NPI-FC	NPI-L	NPI-FC	NPI-L
Honesty-Humility				
Sincerity	-.32*	-.31*	-.25*	-.31*
Fairness	-.22*	-.15	-.29*	-.30*
Greed-Avoidance	-.42*	-.44*	-.30*	-.38*
Modesty	-.51*	-.48*	-.55*	-.59*
Emotionality				
Fearfulness	-.20	-.13	-.16	-.13
Anxiety	-.19	-.13	-.11	-.05
Dependence	-.07	-.03	-.01	.05
Sentimentality	-.19	-.13	-.16	-.08
Extraversion				
Social Self-Esteem	.14	.19	.19	.23*
Social Boldness	.45*	.38*	.53*	.49*
Sociability	.20	.20	.27*	.28*
Liveliness	.15	.13	.19	.21*
Agreeableness				
Forgiveness	-.17	-.18	-.10	-.14
Gentleness	-.29*	-.22*	-.22*	-.23*
Flexibility	-.22*	-.21*	-.16	-.18
Patience	-.18	-.12	-.16	-.19
Conscientiousness				
Organization	.02	-.01	.02	.00
Diligence	.05	.12	.15	.18
Perfectionism	.03	.08	.06	.06
Prudence	-.15	-.11	-.10	-.11
Openness				
Aesthetic Appreciation	-.07	.01	-.05	.03
Inquisitiveness	.09	.06	.06	.05
Creativity	-.02	.03	.21*	.21*
Unconventionality	.04	.11	.12	.17

Note. Sample A N = 269, Sample B N = 314. Different subscripts represent significant differences ($p < .001$) between the two different NPI formats done separately for Sample A and B. * $p < .001$.

Table 6

Correlations between Dark Triad Traits, Leadership Motivation, Psychological Functioning, and Externalizing Behavior, and the Two NPI Formats

Measure	Sample A		Sample B	
	NPI-FC	NPI-L	NPI-FC	NPI-L
Short D3				
Narcissism	.63*	.70*	.74* ^a	.83* ^b
Machiavellianism	.24*	.35*	.37*	.40*
Psychopathy	.38*	.33*	.44*	.50*
Motivation to Lead				
Affective-Identity	.50*	.47*	.59*	.61*
Noncalculative	-.10	-.13	-.17	-.14
Social-Normative	.15 ^a	.31* ^b	.35*	.43*
PROMIS				
Anger	.17	.13	.16	.21*
Anxiety	-.04	-.07	.14	.13
Depression	-.04	-.05	.04	.00
CAB				
Alcohol Use	.18	.08	.16	.19
Substance Use	.10	.14	.14	.13
Antisocial Behavior	.21	.14	.19	.21
IPV	.18	.19	.13	.19

Note. Sample A N = 268-269, Sample B N = 314. IPV = intimate partner violence. Different subscripts represent significant differences ($p < .001$) between the two different NPI formats done separately for Sample A and B. * $p < .001$.

Table 7

Factor Models and Corresponding Items

NPI Item	Emmons (1984, 1987) four-factor	Raskin & Terry (1988) seven-factor	Kubarych et al. (2004) two-factor	Kubarych et al. (2004) three-factor	Corry et al. (2008) two-factor	Ackerman et al. (2011) three-factor
1	L/A	A	P	P	L/A	L/A
2	-	Exh	Exh	Exh	-	-
3	S/A	Exh	Exh	SP	Exh/Ent	-
4	S/S	S	P	SP	Exh/Ent	GE
5	-	Ent	P	P	-	L/A
6	S/A	Exp	P	P	-	-
7	L/A	Exh	Exh	Exh	Exh/Ent	GE
8	-	A	P	P	L/A	-
9	S/S	S	P	SP	-	-
10	L/A	A	P	P	L/A	L/A
11	L/A	A	P	P	L/A	L/A
12	L/A	A	P	P	L/A	L/A
13	E/E	Exp	P	P	-	E/E
14	E/E	Ent	P	SP	Exh/Ent	E/E
15	S/S	V	-	-	Exh/Ent	GE
16	S/A	Exp	P	P	-	-
17	-	Self	P	SP	-	-
18	-	Ent	Exh	Exh	-	-
19	S/S	V	Exh	SP	Exh/Ent	GE
20	S/A	Exh	Exh	Exh	Exh/Ent	GE
21	S/A	Self	P	P	-	-
22	-	Self	-	-	-	-
23	S/A	Exp	P	SP	-	-
24	E/E	Ent	P	P	Exh/Ent	E/E
25	E/E	Ent	P	P	Exh/Ent	E/E
26	S/S	S	Exh	Exh	-	GE
27	E/E	Ent	P	P	L/A	L/A
28	-	Exh	Exh	Exh	Exh/Ent	GE
29	S/S	V	-	-	Exh/Ent	GE
30	L/A	Exh	Exh	Exh	Exh/Ent	GE
31	-	Self	P	SP	-	-
32	L/A	A	P	P	L/A	L/A
33	L/A	A	P	P	L/A	L/A
34	S/S	Self	P	SP	-	L/A
35	S/A	Exp	P	SP	-	-
36	S/A	A	P	P	L/A	L/A
37	-	S	Exh	Exh	-	-
38	E/E	Exh	Exh	Exh	Exh/Ent	GE
39	E/E	Self	P	SP	Exh/Ent	-
40	S/S	S	P	SP	-	L/A

Note. LA = leadership/authority; SA = superiority/arrogance; SS = self-absorption/self-admiration; EE = exploitativeness/entitlement; A = authority; Exh = exhibitionism; S = superiority; Ent = entitlement; Exp = exploitativeness; V = vanity; Self = self-sufficiency; P = power; SP = special person; Exh/Ent = exhibitionism/entitlement; GE = grandiose exhibitionism.

Table 8

Factor-Level Reliabilities for the NPI-FC and NPI-L

Subscale	Sample A		Sample B	
	NPI-FC	NPI-L	NPI-FC	NPI-L
Emmons (1984, 1987) – Four-Factor				
Leadership/Authority	.75	.86	.81	.89
Superiority/Arrogance	.57	.75	.63	.79
Self-Absorption/Self-Admiration	.62	.80	.76	.83
Exploitativeness/Entitlement	.62	.77	.67	.81
Raskin & Terry (1988) – Seven-Factor				
Authority	.74	.85	.81	.90
Self-Sufficiency	.45	.61	.55	.67
Superiority	.49	.67	.66	.75
Vanity	.66	.82	.76	.89
Exhibitionism	.64	.79	.70	.81
Exploitativeness	.62	.78	.62	.83
Entitlement	.56	.70	.61	.79
Kubarych et al. (2004) – Two-Factor				
Power	.81	.90	.86	.94
Exhibitionism	.65	.80	.72	.85
Kubarych et al. (2004) – Three-Factor				
Power	.76	.87	.82	.91
Exhibitionism	.63	.79	.70	.82
Special Person	.60	.78	.73	.85
Corry et al. (2008) – Two-Factor				
Leadership/Authority	.76	.86	.82	.91
Exhibitionism/Entitlement	.70	.86	.78	.89
Ackerman et al. (2011) – Three-Factor				
Leadership/Authority	.76	.86	.83	.91
Grandiose Exhibitionism	.71	.84	.80	.89
Entitlement/Exploitativeness	.54	.71	.58	.72

Note. Sample A N = 253-268, Sample B N = 297-314.

Table 9

Model Fit Statistics for the NPI-FC CFA Models

Model	Model Fit Statistics					
	df	χ^2	RMSEA	WRMSR	TLI	CFI
Emmons (1984, 1987)						
1. 1 Factor	434	1734.68*	.07	1.97	.77	.79
2. 4 Factor	428	1321.38*	.06	1.69	.84	.85
Model 2 vs. Model 1	$\Delta 6$	$\Delta 251.58^*$				
Raskin and Terry (1988)						
1. 1 Factor	740	2190.69*	.06	1.79	.79	.80
2. 7 Factor	719	1399.02*	.04	1.33	.90	.91
Model 2 vs. Model 1	$\Delta 21$	$\Delta 522.40^*$				
Kubarych et al. (2004)						
1. 1 Factor	629	1760.12*	.05	1.55	.85	.86
2. 2 Factor	628	1539.24*	.05	1.54	.86	.86
3. 3 Factor	626	1524.35*	.06	1.68	.82	.83
Model 2 vs. Model 1	$\Delta 1$	$\Delta 94.41^*$				
Model 3 vs. Model 2	$\Delta 2$	$\Delta 14.85$				
Corry et al. (2008)						
1. 1 Factor	230	1187.23*	.08	2.10	.79	.81
2. 2 Factor	229	811.78*	.07	1.72	.87	.88
Model 2 vs. Model 1	$\Delta 1$	$\Delta 118.09^*$				
Ackerman et al. (2011)						
1. 1 Factor	275	1375.31*	.08	2.11	.78	.79
2. 3 Factor	272	828.12*	.06	1.60	.89	.90
Model 2 vs. Model 1	$\Delta 3$	$\Delta 220.55^*$				

Note. N = 583. df = degrees of freedom; RMSEA = root mean square error of approximation; WRMSR = weighted root mean square residual; TLI = Tucker Lewis index; CFI = comparative fit index. To account for the fact that chi-square values generated from WLSMV estimation cannot be compared in the usual way, chi-square difference tests for the NPI-FC data were conducted using the DIFFTEST analysis in MPlus 7. * $p < .001$.

Table 10

Model Fit Statistics for the NPI-L CFA Models

Model	Model Fit Statistics					
	df	χ^2	RMSEA	SRMSR	TLI	CFI
Emmons (1984, 1987)						
1. 1 Factor	434	3019.61*	.10	.08	.61	.64
2. 4 Factor	428	2739.22*	.10	.09	.65	.68
Model 2 vs. Model 1	$\Delta 6$	$\Delta 104.98^*$				
Raskin and Terry (1988)						
1. 1 Factor	740	4036.91*	.09	.08	.60	.62
2. 7 Factor	719	2253.66*	.06	.06	.81	.82
Model 2 vs. Model 1	$\Delta 21$	$\Delta 1261.20^*$				
Kubarych et al. (2004)						
1. 1 Factor	629	3115.67*	.08	.07	.65	.67
2. 2 Factor	628	2581.05*	.07	.07	.73	.74
3. 3 Factor	626	2596.37*	.07	.07	.72	.74
Model 2 vs. Model 1	$\Delta 1$	$\Delta 148.11^*$				
Model 3 vs. Model 2	$\Delta 2$	$\Delta 7.72$				
Corry et al. (2008)						
1. 1 Factor	230	2054.76*	.12	.10	.61	.64
2. 2 Factor	229	1358.52*	.09	.08	.76	.78
Model 2 vs. Model 1	$\Delta 1$	$\Delta 305.72$				
Ackerman et al. (2011)						
1. 1 Factor	275	2241.37*	.11	.09	.62	.65
2. 3 Factor	272	1386.33*	.08	.07	.78	.80
Model 2 vs. Model 1	$\Delta 3$	$\Delta 411.31^*$				

Note. N = 583. df = Degrees of Freedom; RMSEA = Root Mean Square Error of Approximation; SRMSR = Standardized Root Mean Square Residual; TLI = Tucker Lewis Index; CFI = Comparative Fit Index. Satorra-Bentler scaled chi-square difference tests were used to compare chi-square values. * $p < .001$.

Table 11

Model Selection Indices for the NPI-FC and NPI-L Factor Structures

Model	NPI-FC			NPI-L		
	-2LL	AIC	BIC	-2LL	AIC	BIC
Omnibus 1-factor model	25241.14	25401.14	25750.60	63364.18	63604.18	64128.36
Emmons (1984, 1987) 4-factor model	18996.18	19132.18	19429.22	48341.63	48539.63	48972.08
Raskin and Terry (1988) 7-factor model	24528.51	24728.51	25165.32	61219.33	61501.33	62117.25
Kubarych et al. (2004) 2-factor model	22946.84	23096.84	23424.46	57558.46	57782.46	58271.70
Kubarych et al. (2004) 3-factor model	22896.36	23050.36	23386.71	57572.02	57800.02	58297.99
Corry et al. (2008) 2-factor model	13587.58	13681.58	13886.88	35282.83	35422.83	35728.60
Ackerman et al. (2011) 3-factor model	15090.96	15196.96	15428.48	38345.74	38501.74	38842.46

Note. -2LL = -2 log likelihood; AIC = Akaike information criterion; BIC = Bayesian information criterion. Model selection criteria for the NPI-FC were fit using a 2PL IRT model. Model selection criteria for the NPI-L were fit using CFA.

Table 12

Standardized Factor Loadings for the Selected Two-Factor NPI-FC Model

NPI Item	Narcissistic Response	LA	EE
1	I have a natural talent for influencing people.	.70	
8	I will be a success.	.64	
10	I see myself as a good leader.	.71	
11	I am assertive.	.64	
12	I like having authority over other people.	.75	
27	I have a strong will to power.	.64	
32	People always seem to recognize my authority.	.76	
33	I would prefer to be a leader.	.84	
36	I am a born leader.	.77	
3	I would do almost anything on a dare.		.35
4	I know that I am a good person because everybody keeps telling me so.		.57
7	I like to be the center of attention.		.86
14	I insist upon getting the respect that is due me.		.36
15	I like to show off my body.		.69
19	I like to look at my body.		.63
20	I will usually show off if I get the chance.		.60
24	I expect a great deal from other people.		.36
25	I will never be satisfied until I get all that I deserve.		.45
28	I like to start new fads and fashion.		.49
29	I like to look at myself in the mirror.		.64
30	I really like to be the center of attention.		.89
38	I get upset when people don't notice how I look when I go out in public.		.56
39	I am more capable than other people.		.44

Note. N = 583. LA = leadership/authority; EE = exhibitionism/entitlement. The two factors correlated at $r = .62$.

Table 13

Standardized Factor Loadings for the Selected Two-Factor NPI-L Model

NPI Item	Narcissistic Response	LA	EE
1	I have a natural talent for influencing people.	.66	
8	I will be a success.	.44	
10	I see myself as a good leader.	.83	
11	I am assertive.	.76	
12	I like having authority over other people.	.82	
27	I have a strong will to power.	.75	
32	People always seem to recognize my authority.	.69	
33	I would prefer to be a leader.	.89	
36	I am a born leader.	.83	
3	I would do almost anything on a dare.		.49
4	I know that I am a good person because everybody keeps telling me so.		.50
7	I like to be the center of attention.		.85
14	I insist upon getting the respect that is due me.		.63
15	I like to show off my body.		.79
19	I like to look at my body.		.79
20	I will usually show off if I get the chance.		.77
24	I expect a great deal from other people.		.39
25	I will never be satisfied until I get all that I deserve.		.53
28	I like to start new fads and fashion.		.69
29	I like to look at myself in the mirror.		.83
30	I really like to be the center of attention.		.85
38	I get upset when people don't notice how I look when I go out in public.		.59
39	I am more capable than other people.		.51

Note. N = 583. LA = leadership/authority; EE = exhibitionism/entitlement. The two factors correlated at $r = .62$.

CHAPTER 4

GENERAL DISCUSSION

While the NPI is the most widely used measures of trait narcissism, its forced-choice response format has been thought to present a number of psychometric and user-related problems. The current paper sought to address this by examining whether an alternate response format using a 5-point Likert scale would produce a more accessible measure while retaining accurate assessment of the narcissism construct.

Overview of Results

In Study 1, a between-subjects design was used to investigate a number of participant-related issues. A comparison of the honest responding and faking-good conditions found no significant differences in either sample. Furthermore, the pattern of item-level responses showed remarkable similarity across conditions. This contrasts with previous research finding that forced-choice measures are less susceptible to faking than normative measures (e.g., Bowen et al., 2002; Martin et al., 2002) and lends credence to the notion that a Likert response format can reasonably be used with the NPI without promoting socially desirable responding.

In terms of participant experience, the NPI-FC and NPI-L were comparable. Participant assessments showed no differences between the two formats, evaluating them as having a similar degree of face validity, perceived predictive validity, and social validity. Mixed results were found with respect to affective responses. MTurk participants who took the NPI-L reported more negative affect after taking the measure than those who took the NPI-FC, but this finding was not corroborated by the undergraduate sample and it is unclear why this difference occurred. Overall,

the results support that the two formats are perceived as being similarly valid and easy to use. It should be noted that since participants only completed one version of the NPI rather than both, they were not asked to rate one format relative to the other. It is possible that doing so would produce different results; however, the purpose of this study was to examine whether each format would be perceived as valid on its own. With the exception of further validation studies, it is unlikely that the two versions of the NPI would ever be used side-by-side in practice, making this methodology a closer approximation of real-world use.

Lastly, the results of Study 1 provided evidence that the NPI-L offers a significant time savings over the NPI-FC. Across both samples, participants completed the NPI-L faster, suggesting that it may be preferable in experimental situations in which time is limited.

In Study 2, a within-subjects design was used to conduct a comprehensive evaluation of the reliability, validity and factor structure of the two NPI formats. Across two samples, the NPI-L manifested superior internal consistency to the NPI-FC. Further, the two formats manifested good alternate forms reliability, although both samples produced lower estimates than the $r = .97$ found by Barelds and Dijkstra (2010) with their Likert-type version of the Dutch NPI. A comparison of linearly transformed total scores on the NPI-L with total scores on the NPI-FC confirmed the existence of some variation, finding that NPI-L scores were significantly higher. This may be due to the fact that removing the non-narcissistic response option made the items seem more normative in general, although this is conjecture. Nonetheless, an examination of the relations manifested by each format with respect to criteria from narcissism's nomological network showed that they had nearly identical patterns of convergent and discriminant validity. Both the NPI-FC and NPI-L were strongly related to alternative measures of grandiose narcissism, entitlement, self-reported NPD symptoms, and dark triad traits, and unrelated to

measures of vulnerable narcissism. With regard to personality, the two formats manifested the prototypical pattern of low Honesty-Humility and Agreeableness, and high Extraversion seen in previous research (e.g., Lee & Ashton, 2005; Miller et al., 2010; Miller & Campbell, 2008; Paulhus & Williams, 2002). A similar pattern was found in peer reports, although few of these correlations reached significance. Consistent with previous research on grandiose narcissism (Miller, Price, et al., 2012) and the interpersonal circumplex, both the NPI-FC and NPI-L were positively related to extraversion, as well as octants associated with a cold, calculating, and dominant personality. With regard to leadership motivation, both were related to leadership identity and feeling that it is desirable behavior to take on leadership positions, but unrelated to seeking leadership positions without an expectation of privileges. This supports experimental research finding that narcissism is tied to leadership emergence, regardless of the prospect of individual reward (Brunell et al., 2008; Nevicka, De Hoogh, et al., 2011). Finally, both the NPI-FC and NPI-L were not significantly related to negative psychological functioning and externalizing behavior. Although the latter contrasts somewhat with prior research (Luhtanen & Crocker, 2005; Miller et al., 2010), this is most likely due to the low incidence of such behaviors in the samples. In sum, it appears that with regard to the nomological network of narcissism, the NPI-L does an effective job of replicating the construct validity of the NPI-FC.

In testing the factor structure of the two formats it appeared that none of the existing factor structures provided a good fit to either the NPI-FC or NPI-L data. However, in both cases the Corry et al. (2008) two-factor structure fit the data best. Contrary to expectations, the NPI-L did not result in a cleaner factor structure, even though it exhibited superior factor-level reliability. In fact, in terms of fit indices, the existing models provided a closer fit for the NPI-FC data. However, in each case the specified multi-factor structures more closely fit the NPI-L data

than their associated one-factor omnibus models, suggesting the possibility of underlying variability. As discussed below, further research will need to be conducted to determine whether an alternate factor structure exists for the NPI-L.

Which Version Should Researchers Use?

Overall, the results of this paper suggest that for most researchers the NPI-L may offer an alternative means of assessing the narcissism construct. The NPI-L has methodological advantages such as high reliability, increased variance, and more normally distributed data. It also has practical advantages. It is quicker to administer and will work more easily in conjunction with other Likert and Likert-type measures. However, it should be noted that in general, the NPI-FC performed well and can still be considered a viable measure of trait narcissism.

Indeed, the NPI-FC might still be considered optimal in some circumstances. This is especially likely to be the case for researchers interested in comparing scores in a current sample to previously collected samples, such as those who want to examine historical change in narcissism or those conducting ongoing longitudinal research with the NPI. In general, the choice of which measure to use should depend on the stated goals of the current research.

Limitations and Future Directions

Although the current studies were comprehensive in their approach to evaluating the NPI-L, there are nonetheless several limitations that should be noted. First, the present research assessed the alternate NPI formats in four large samples of undergraduates and users of Amazon's MTurk. Although the latter is more diverse, the fact that it is composed of Internet users means that it is not entirely generalizable. In particular, Paolacci, Chandler, and Ipeirotis (2010) found that MTurk users tended to be younger, more educated, and earn a lower income

than the general population. As such, it will be important to examine the reliability and validity of the NPI-L in more diverse community and clinical samples. Second, although the current study included two types of peer-reports in addition to self-report data, close and casual peers provided largely similar evaluations. Future research should examine the validity of the NPI-L with respect to evaluations from both more brief (e.g., thin-slice ratings) as well as more frequent interaction partners (e.g., ratings by co-workers, supervisors, family members). Third, though this study investigated the most common normative response format (i.e., a 5-point, “strongly agree” to “strongly disagree” scale) it is certainly not the only possibility. For instance, in adapting the NPI for use with Dutch samples Barelds and Dijkstra (2010) chose a 1 (“not at all applicable”) to 5 (“highly applicable”) Likert-type scale, and several authors have suggested using a bounded scale (Corry et al., 2008; Kubarych et al., 2004). Future research could test these alternatives along with alternately numbered scales (e.g., 4-point, 7-point). Lastly, the current paper only examined whether the existing NPI-FC factor structures could be replicated with the NPI-L data, and not whether the NPI-L had an alternate factor structure. Given the variety of existing factor solutions, and the central question of whether the NPI-L could reasonably be used as an alternative to the NPI-FC, it was thought that fitting an existing factor structure would be more substantively meaningful in the current study than the investigation of the possible existence of a new structure and its potential addition to the research literature. That being said, it is certainly an avenue worth pursuing for future research, considering the poor fit observed in the existing models examined in this study.

Conclusions

The current research provided an initial investigation into the viability of applying a normative response format to the NPI. Across two studies, it was found that the NPI-L

performed similarly to the NPI-FC in terms of susceptibility to socially desirable responding and participant perceptions, manifested almost identical convergent and divergent validity with a variety of criteria in narcissism's nomological network, and exhibited a similar model fit with existing factor structures. In addition, the NPI-L manifested superior internal consistency while offering a time savings to the NPI-FC. In sum, although further research will be necessary to more fully explore the NPI-L, the present research provides substantial evidence that the NPI-L is a suitable alternative to the NPI-FC.

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APPENDIX A

STUDY 1 MEASURES

Narcissistic Personality Inventory – Forced-Choice**Honest Responding Instructions**

In each of the following pairs of attitudes, choose the one that you **MOST AGREE** with.

Faking-Good Instructions

Please respond to the following items as if you were trying to make a good impression. That is, trying to present yourself as well adjusted, without any psychological or personality faults. For each pair of attitudes, choose one response option.

- _____ 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 get embarrassed.
 B I know that I am a good person 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 no 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 having 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 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 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 will 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 fashion.
B I like to start new fads and fashion.
- _____ 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 anyway I want to.
B People can't always live their lives in terms of what they want.
- _____ 32. A Being in authority doesn't mean 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 anyone 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 someone 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 I can learn from other people.
- _____ 40. A I am much like everybody else.
B I am an extraordinary person.

Narcissistic Personality Inventory – Likert

Honest Responding Instructions

Using the scale below, rate the extent to which you agree or disagree with the following statements.

Faking-Good Instructions

Please respond to the following items as if you were trying to make a good impression. That is, trying to present yourself as well adjusted, without any psychological or personality faults. Use the scale below to rate the following statements.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

- ___ 1. I have a natural talent for influencing people.
- ___ 2. Modesty doesn't become me.
- ___ 3. I would do almost anything on a dare.
- ___ 4. I know that I am a good person because everybody keeps telling me so.
- ___ 5. If I ruled the world it would be a better place.
- ___ 6. I can usually talk my way out of anything.
- ___ 7. I like to be the center of attention.
- ___ 8. I will be a success.
- ___ 9. I think I am a special person.
- ___ 10. I see myself as a good leader.
- ___ 11. I am assertive.
- ___ 12. I like having authority over other people.
- ___ 13. I find it easy to manipulate people.
- ___ 14. I insist upon getting the respect that is due me.

- ___ 15. I like to show off my body.
- ___ 16. I can read people like a book.
- ___ 17. I like to take responsibility for making decisions.
- ___ 18. I want to amount to something in the eyes of the world.
- ___ 19. I like to look at my body.
- ___ 20. I will usually show off if I get the chance.
- ___ 21. I always know what I am doing.
- ___ 22. I rarely depend on anyone else to get things done.
- ___ 23. Everybody likes to hear my stories.
- ___ 24. I expect a great deal from other people.
- ___ 25. I will never be satisfied until I get all that I deserve.
- ___ 26. I like to be complimented.
- ___ 27. I have a strong will to power.
- ___ 28. I like to start new fads and fashion.
- ___ 29. I like to look at myself in the mirror.
- ___ 30. I really like to be the center of attention.
- ___ 31. I can live my life anyway I want to.
- ___ 32. People always seem to recognize my authority.
- ___ 33. I would prefer to be a leader.
- ___ 34. I am going to be a great person.
- ___ 35. I can make anyone believe anything I want them to.
- ___ 36. I am a born leader.
- ___ 37. I wish someone would someday write my biography.

___ 38. I get upset when people don't notice how I look when I go out in public.

___ 39. I am more capable than other people.

___ 40. I am an extraordinary person.

Reaction Measure

Using the scale below, rate the extent to which you agree or disagree with the following statements.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Face Validity

- _____ 1. I did not understand what the questionnaire had to do with personality.
- _____ 2. I could not see any relationship between the questionnaire and personality traits.
- _____ 3. It would be obvious to anyone that the questionnaire is related to personality.
- _____ 4. The actual content of the questionnaire was clearly related to personality.
- _____ 5. There was no real connection between the questionnaire and personality.

Comments:

Perceived Predictive Validity

- _____ 1. I am confident that the questionnaire can accurately measure an individual's personality.
- _____ 2. My answers on the questionnaire are a good indicator of my personality traits.
- _____ 3. Someone could tell a lot about an individual's personality from the results of this questionnaire.
- _____ 4. I expect the questionnaire results to reflect an accurate image of my 'true' personality.
- _____ 5. The questionnaire gave me sufficient opportunity to show my personality.

Comments:

Social Validity/Ease of Use

_____ 1. I thought questionnaire items were difficult to answer.

_____ 2. I was unsure of how to answer the questionnaire items.

_____ 3. I thought questionnaire was confusing.

_____ 4. I thought questionnaire was frustrating.

_____ 5. I thought questionnaire was irritating.

Comments:

Affect Measure

This scale consists of a number of words that describe different feelings and emotions and is designed to measure what you are thinking at this moment. Using the scale below rate the extent to which you feel this way right now.

Not at All
1

A Little Bit
2

Somewhat
3

Very Much
4

Extremely
5

_____ 1. Hostile

_____ 2. Annoyed

_____ 3. Frustrated

_____ 4. Irritable

_____ 5. Angry

APPENDIX B

STUDY 2 MEASURES

Narcissistic Personality Inventory – Forced-Choice

In each of the following pairs of attitudes, choose the one that you **MOST AGREE** with.

- _____ 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 get embarrassed.
 B I know that I am a good person 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 no 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 having 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 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 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 will 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 fashion.
B I like to start new fads and fashion.
- _____ 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 anyway I want to.
B People can't always live their lives in terms of what they want.
- _____ 32. A Being in authority doesn't mean 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 anyone 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 someone 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 I can learn from other people.
- _____ 40. A I am much like everybody else.
B I am an extraordinary person.

Narcissistic Personality Inventory – Likert

Using the scale below, rate the extent to which you agree or disagree with the following statements.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

- ___ 1. I have a natural talent for influencing people.
- ___ 2. Modesty doesn't become me.
- ___ 3. I would do almost anything on a dare.
- ___ 4. I know that I am a good person because everybody keeps telling me so.
- ___ 5. If I ruled the world it would be a better place.
- ___ 6. I can usually talk my way out of anything.
- ___ 7. I like to be the center of attention.
- ___ 8. I will be a success.
- ___ 9. I think I am a special person.
- ___ 10. I see myself as a good leader.
- ___ 11. I am assertive.
- ___ 12. I like having authority over other people.
- ___ 13. I find it easy to manipulate people.
- ___ 14. I insist upon getting the respect that is due me.
- ___ 15. I like to show off my body.
- ___ 16. I can read people like a book.
- ___ 17. I like to take responsibility for making decisions.
- ___ 18. I want to amount to something in the eyes of the world.
- ___ 19. I like to look at my body.

- ___ 20. I will usually show off if I get the chance.
- ___ 21. I always know what I am doing.
- ___ 22. I rarely depend on anyone else to get things done.
- ___ 23. Everybody likes to hear my stories.
- ___ 24. I expect a great deal from other people.
- ___ 25. I will never be satisfied until I get all that I deserve.
- ___ 26. I like to be complimented.
- ___ 27. I have a strong will to power.
- ___ 28. I like to start new fads and fashion.
- ___ 29. I like to look at myself in the mirror.
- ___ 30. I really like to be the center of attention.
- ___ 31. I can live my life anyway I want to.
- ___ 32. People always seem to recognize my authority.
- ___ 33. I would prefer to be a leader.
- ___ 34. I am going to be a great person.
- ___ 35. I can make anyone believe anything I want them to.
- ___ 36. I am a born leader.
- ___ 37. I wish someone would someday write my biography.
- ___ 38. I get upset when people don't notice how I look when I go out in public.
- ___ 39. I am more capable than other people.
- ___ 40. I am an extraordinary person.

Psychological Entitlement Scale

Please respond to the following items using the number that best reflects your own beliefs.

Strong Disagreement	Moderate Disagreement	Slight Disagreement	Neither Agreement or Disagreement	Slight Agreement	Moderate Agreement	Strong Agreement
1	2	3	4	5	6	7

- _____ 1. I honestly feel I'm just more deserving than others.
- _____ 2. Great things should come to me.
- _____ 3. If I were on the Titanic, I would deserve to be on the first lifeboat!
- _____ 4. I demand the best because I'm worth it.
- _____ 5. I do not necessarily deserve special treatment.
- _____ 6. I deserve more things in my life.
- _____ 7. People like me deserve an extra break now and then.
- _____ 8. Things should go my way.
- _____ 9. I feel entitled to more of everything.

Hypersensitive Narcissism Scale

Please answer the following questions by deciding to what extent each item is characteristic of your feelings and behavior.

Very Uncharacteristic or Untrue 1	Uncharacteristic 2	Neutral 3	Characteristic 4	Very Characteristic or True 5
--	-----------------------	--------------	---------------------	--

_____ 1. I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others.

_____ 2. My feelings are easily hurt by ridicule or the slighting remarks of others.

_____ 3. When I enter a room I often become self-conscious and feel that the eyes of others are upon me.

_____ 4. I dislike sharing the credit of an achievement with others.

_____ 5. I feel that I have enough on my hands without worrying about other people's troubles.

_____ 6. I feel that I am temperamentally different from most people.

_____ 7. I often interpret the remarks of others in a personal way.

_____ 8. I easily become wrapped up in my own interests and forget the existence of others.

_____ 9. I dislike being with a group unless I know that I am appreciated by at least one of those present.

_____ 10. I am secretly "put out" or annoyed when other people come to me with their troubles, asking me for my time and sympathy.

Pathological Narcissism Scale

Below you will find 52 descriptive statements. Please consider each one and indicate how well that statement describes you. Please respond to all statements. There are no right or wrong answers. Simply indicate how well each statement describes you as a person using the following scale:

Not at All Like Me	Moderately Unlike Me	A Little Unlike Me	A Little Like Me	Moderately Like Me	Very Much Like Me
1	2	3	4	5	6

- _____ 1. When others don't notice me, I start to feel worthless.
- _____ 2. When people don't notice me, I start to feel bad about myself.
- _____ 3. My self-esteem fluctuates a lot.
- _____ 4. It's hard for me to feel good about myself unless I know other people like me.
- _____ 5. It's hard for me to feel good about myself when I'm alone.
- _____ 6. I am disappointed when people don't notice me.
- _____ 7. I sometimes need important others in my life to reassure me of my self-worth.
- _____ 8. I need others to acknowledge me.
- _____ 9. I am preoccupied with thoughts and concerns that most people are not interested in me.
- _____ 10. When others don't respond to me the way that I would like them to, it is hard for me to still feel ok with myself.
- _____ 11. It's hard to feel good about myself unless I know other people admire me.
- _____ 12. I often find myself envying others' accomplishments.
- _____ 13. I can usually talk my way out of anything.
- _____ 14. I can make anyone believe anything I want them to.
- _____ 15. I find it easy to manipulate people.
- _____ 16. I can read people like a book.

- _____ 17. Everybody likes to hear my stories.
- _____ 18. I can make myself feel good by caring for others.
- _____ 19. I try to show what a good person I am through my sacrifices.
- _____ 20. Sacrificing for others makes me the better person.
- _____ 21. I feel important when others rely on me.
- _____ 22. I like to have friends who rely on me because it makes me feel important.
- _____ 23. I hate asking for help.
- _____ 24. It's hard to show others the weaknesses I feel inside.
- _____ 25. I often hide my needs for fear that others will see me as needy and dependent.
- _____ 26. When others get a glimpse of my needs, I feel anxious and ashamed.
- _____ 27. I wouldn't disclose all my intimate thoughts and feelings to someone I didn't admire.
- _____ 28. I often fantasize about having a huge impact on the world around me.
- _____ 29. I often fantasize about being admired and respected.
- _____ 30. I often fantasize about being rewarded for my efforts.
- _____ 31. I often fantasize about performing heroic deeds.
- _____ 32. I often fantasize about being recognized for my accomplishments.
- _____ 33. I often fantasize about accomplishing things that are probably beyond my means.
- _____ 34. I want to amount to something in the eyes of the world.
- _____ 35. Sometimes I avoid people because I'm concerned that they'll disappoint me.
- _____ 36. I sometimes feel ashamed about my expectations of others when they disappoint me.
- _____ 37. Sometimes I avoid people because I'm afraid they won't do what I want them to do.
- _____ 38. Sometimes I avoid people because I'm concerned they won't acknowledge what I do for them.

- _____ 39. When others don't meet my expectations, I often feel ashamed about what I wanted.
- _____ 40. When others disappoint me, I often get angry at myself.
- _____ 41. Sometimes it's easier to be alone than to face not getting everything I want from other people.
- _____ 42. I get angry when criticized.
- _____ 43. I can get pretty angry when others disagree with me.
- _____ 44. It's important to show people I can do it on my own, even if I have some doubts inside.
- _____ 45. I typically get very angry when I'm unable to get what I want from others.
- _____ 46. I get annoyed by people who are not interested in what I say or do.
- _____ 47. When I do things for other people, I expect them to do things for me.
- _____ 48. I get mad when people don't notice all that I do for them.
- _____ 49. It irritates me when people don't notice how good a person I am.
- _____ 50. I will never be satisfied until I get all that I deserve.
- _____ 51. I help others in order to prove I'm a good person.
- _____ 52. I can't stand relying on other people because it makes me feel weak.

Structured Clinical Interview for DSM-IV Axis II Personality Disorders

–Personality Questionnaire

These questions are about the kind of person you generally are – that is, how you have usually felt of behavior over the past several years. Select “YES” if the question completely or mostly applies to you, or select “NO” if it does not apply to you. If you do not understand a question or are not sure of your answer, leave it blank.

- | | | |
|--|----|-----|
| 1. Do people often fail to appreciate your very special talents or accomplishments? | No | Yes |
| 2. Have people told you that you have too high an opinion of yourself? | No | Yes |
| 3. Do you think a lot about the power, fame, or recognition that will be yours someday? | No | Yes |
| 4. Do you think a lot about the perfect romance that will be yours someday? | No | Yes |
| 5. When you have a problem, do you almost always insist on seeing the top person? | No | Yes |
| 6. Do you feel it is important to spend time with people who are special or influential? | No | Yes |
| 7. Is it very important to you that people pay attention to you or admire you in some way? | No | Yes |
| 8. Do you think that it's not necessary to follow certain rules or social conventions when they get in your way? | No | Yes |
| 9. Do you feel that you are the kind of person who deserves special treatment? | No | Yes |
| 10. Do you often find it necessary to step on a few toes to get what you want? | No | Yes |
| 11. Do you often have to put your needs above other people's? | No | Yes |
| 12. Do you often expect other people to do what you ask without question because of who you are? | No | Yes |
| 13. Are you NOT really interested in other people's problems or feelings? | No | Yes |
| 14. Have people complained to you that you don't listen to them or care about their feelings? | No | Yes |
| 15. Are you often envious of others? | No | Yes |
| 16. Do you feel that others are often envious of you? | No | Yes |
| 17. Do you find that there are very few people that are worth your time and attention? | No | Yes |

PDQ-4+

These questions are about the kind of person **YOU** generally are – that is, how you have usually felt or behaved over the past several years. Select “True” if the question completely or mostly applies to you, or select “False” if it does not apply to you. If you do not understand a question or are not sure of your answer, leave it blank.

Over the past several years...

- | | | |
|---|---|---|
| 1. I have accomplished far more than others give me credit for. | T | F |
| 2. I often find myself thinking about how great a person I am, or will be. | T | F |
| 3. Only certain special people can really appreciate and understand me. | T | F |
| 4. I very much need other people to take notice of me or compliment me. | T | F |
| 5. I expect other people to do favors for me even though I do not usually do favors for them. | T | F |
| 6. Some people think that I take advantage of others. | T | F |
| 7. People have often complained that I did not realize that they were upset. | T | F |
| 8. Some people are jealous of me. | T | F |
| 9. Others consider me to be stuck up. | T | F |

Personality Inventory for DSM-5

This is a list of things different people might say about themselves. We are interested in how you would describe yourself. There are no right or wrong answers. So you can describe yourself as honestly as possible, we will keep your responses confidential. We'd like you to take your time and read each statement carefully, selecting the response that best describes you.

- | Very False or Often
False
0 | Sometimes or
Somewhat False
1 | Sometimes or
Somewhat True
2 | Very True or Often True
3 |
|-----------------------------------|-------------------------------------|------------------------------------|------------------------------|
|-----------------------------------|-------------------------------------|------------------------------------|------------------------------|
-
- _____ 1. I do things to make sure people notice me.
- _____ 2. To be honest, I'm just more important than other people.
- _____ 3. I do things so that people just have to admire me.
- _____ 4. I have outstanding qualities that few others possess.
- _____ 5. I love getting the attention of other people.
- _____ 6. I like standing out in a crowd.
- _____ 7. My behavior is often bold and grabs peoples' attention.
- _____ 8. I'm better than almost everyone else.
- _____ 9. I like being a person who gets noticed.
- _____ 10. I've achieved far more than almost anyone I know.
- _____ 11. I deserve special treatment.
- _____ 12. I crave attention.
- _____ 13. I often have to deal with people who are less important than me.
- _____ 14. I like to draw attention to myself.

Rosenberg Self-Esteem Scale

Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement and consider the extent to which you TYPICALLY OR GENERALLY agree or disagree with it.

Please be sure to respond to each statement by checking one number on the scale. All responses will be kept confidential, so please answer as honestly as possible. Remember, base your responses on the extent to which you TYPICALLY OR GENERALLY agree or disagree with each statement.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

_____ 1. I feel that I am a person of worth, at least on an equal plane with others.

_____ 2. I feel like a person who has a number of good qualities.

_____ 3. All in all, I am inclined to feel like a failure.

_____ 4. I feel as if I am able to do things as well as most other people.

_____ 5. I feel as if I do not have much to be proud of.

_____ 6. I take a positive attitude toward myself.

_____ 7. On the whole, I am satisfied with myself.

_____ 8. I wish that I could have more respect for myself.

_____ 9. I certainly feel useless at times.

_____ 10. At times I think that I am no good at all.

HEXACO

Below you will find a series of statements about you. Please read each statement and decide how much you agree or disagree with that statement.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

- _____ 1. I would be quite bored by a visit to an art gallery.
- _____ 2. I clean my office or home quite frequently.
- _____ 3. I rarely hold a grudge, even against people who have badly wronged me.
- _____ 4. I feel reasonably satisfied with myself overall.
- _____ 5. I would feel afraid if I had to travel in bad weather conditions.
- _____ 6. If I want something from a person I dislike, I will act very nicely toward that person in order to get it.
- _____ 7. I'm interested in learning about the history and politics of other countries.
- _____ 8. When working, I often set ambitious goals for myself.
- _____ 9. People sometimes tell me that I am too critical of others.
- _____ 10. I rarely express my opinions in group meetings.
- _____ 11. I sometimes can't help worrying about little things.
- _____ 12. If I knew that I could never get caught, I would be willing to steal a million dollars.
- _____ 13. I would like a job that requires following a routine rather than being creative.
- _____ 14. I often check my work over repeatedly to find any mistakes.
- _____ 15. People sometimes tell me that I'm too stubborn.
- _____ 16. I avoid making "small talk" with people.
- _____ 17. When I suffer from a painful experience, I need someone to make me feel comfortable.
- _____ 18. Having a lot of money is not especially important to me.

- _____ 19. I think that paying attention to radical ideas is a waste of time.
- _____ 20. I make decisions based on the feeling of the moment rather than on careful thought.
- _____ 21. People think of me as someone who has a quick temper.
- _____ 22. I am energetic nearly all the time.
- _____ 23. I feel like crying when I see other people crying.
- _____ 24. I am an ordinary person who is no better than others.
- _____ 25. I wouldn't spend my time reading a book of poetry.
- _____ 26. I plan ahead and organize things, to avoid scrambling at the last minute.
- _____ 27. My attitude toward people who have treated me badly is "forgive and forget".
- _____ 28. I think that most people like some aspects of my personality.
- _____ 29. I don't mind doing jobs that involve dangerous work.
- _____ 30. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
- _____ 31. I enjoy looking at maps of different places.
- _____ 32. I often push myself very hard when trying to achieve a goal.
- _____ 33. I generally accept people's faults without complaining about them.
- _____ 34. In social situations, I'm usually the one who makes the first move.
- _____ 35. I worry a lot less than most people do.
- _____ 36. I would be tempted to buy stolen property if I were financially tight.
- _____ 37. I would enjoy creating a work of art, such as a novel, a song, or a painting.
- _____ 38. When working on something, I don't pay much attention to small details.
- _____ 39. I am usually quite flexible in my opinions when people disagree with me.
- _____ 40. I enjoy having lots of people around to talk with.

- _____ 41. I can handle difficult situations without needing emotional support from anyone else.
- _____ 42. I would like to live in a very expensive, high-class neighborhood.
- _____ 43. I like people who have unconventional views.
- _____ 44. I make a lot of mistakes because I don't think before I act.
- _____ 45. I rarely feel anger, even when people treat me quite badly.
- _____ 46. On most days, I feel cheerful and optimistic.
- _____ 47. When someone I know well is unhappy, I can almost feel that person's pain myself.
- _____ 48. I wouldn't want people to treat me as though I were superior to them.
- _____ 49. If I had the opportunity, I would like to attend a classical music concert.
- _____ 50. People often joke with me about the messiness of my room or desk.
- _____ 51. If someone has cheated me once, I will always feel suspicious of that person.
- _____ 52. I feel that I am an unpopular person.
- _____ 53. When it comes to physical danger, I am very fearful.
- _____ 54. If I want something from someone, I will laugh at that person's worst jokes.
- _____ 55. I would be very bored by a book about the history of science and technology.
- _____ 56. Often when I set a goal, I end up quitting without having reached it.
- _____ 57. I tend to be lenient in judging other people.
- _____ 58. When I'm in a group of people, I'm often the one who speaks on behalf of the group.
- _____ 59. I rarely, if ever, have trouble sleeping due to stress or anxiety.
- _____ 60. I would never accept a bribe, even if it were very large.
- _____ 61. People have often told me that I have a good imagination.
- _____ 62. I always try to be accurate in my work, even at the expense of time.
- _____ 63. When people tell me that I'm wrong, my first reaction is to argue with them.

- _____ 64. I prefer jobs that involve active social interaction to those that involve working alone.
- _____ 65. Whenever I feel worried about something, I want to share my concern with another person.
- _____ 66. I would like to be seen driving around in a very expensive car.
- _____ 67. I think of myself as a somewhat eccentric person.
- _____ 68. I don't allow my impulses to govern my behavior.
- _____ 69. Most people tend to get angry more quickly than I do.
- _____ 70. People often tell me that I should try to cheer up.
- _____ 71. I feel strong emotions when someone close to me is going away for a long time.
- _____ 72. I think that I am entitled to more respect than the average person is.
- _____ 73. Sometimes I like to just watch the wind as it blows through the trees.
- _____ 74. When working, I sometimes have difficulties due to being disorganized.
- _____ 75. I find it hard to fully forgive someone who has done something mean to me.
- _____ 76. I sometimes feel that I am a worthless person.
- _____ 77. Even in an emergency I wouldn't feel like panicking.
- _____ 78. I wouldn't pretend to like someone just to get that person to do favors for me.
- _____ 79. I've never really enjoyed looking through an encyclopedia.
- _____ 80. I do only the minimum amount of work needed to get by.
- _____ 81. Even when people make a lot of mistakes, I rarely say anything negative.
- _____ 82. I tend to feel quite self-conscious when speaking in front of a group of people.
- _____ 83. I get very anxious when waiting to hear about an important decision.
- _____ 84. I'd be tempted to use counterfeit money, if I were sure I could get away with it.
- _____ 85. I don't think of myself as the artistic or creative type.

- _____ 86. People often call me a perfectionist.
- _____ 87. I find it hard to compromise with people when I really think I'm right.
- _____ 88. The first thing that I always do in a new place is to make friends.
- _____ 89. I rarely discuss my problems with other people.
- _____ 90. I would get a lot of pleasure from owning expensive luxury goods.
- _____ 91. I find it boring to discuss philosophy.
- _____ 92. I prefer to do whatever comes to mind, rather than stick to a plan.
- _____ 93. I find it hard to keep my temper when people insult me.
- _____ 94. Most people are more upbeat and dynamic than I generally am.
- _____ 95. I remain unemotional even in situations where most people get very sentimental.
- _____ 96. I want people to know that I am an important person of high status.
- _____ 97. I have sympathy for people who are less fortunate than I am.
- _____ 98. I try to give generously to those in need.
- _____ 99. It wouldn't bother me to harm someone I didn't like.
- _____ 100. People see me as a hard-hearted person.

Interpersonal Adjective Scale

Below are 64 words. Please rate how accurately each of the words describes you as a person. If you feel that word is extremely accurate, select 8. If you feel the word is an extremely inaccurate description of you, please select 1. If you feel neither of the extremes describes you, please use the choices 2 through 7 to indicate other degrees of accuracy.

Extremely Inaccurate 1	Very Inaccurate 2	Quite Inaccurate 3	Slightly Inaccurate 4	Slightly Accurate 5	Quite Accurate 6	Very Accurate 7	Extremely Accurate 8
1. ____ self-assured		17. ____ assertive		33. ____ firm		49. ____ forceful	
2. ____ wily		18. ____ boastful		34. ____ cocky		50. ____ tricky	
3. ____ uncharitable		19. ____ unsympathetic		35. ____ coldhearted		51. ____ hardhearted	
4. ____ uncheery		20. ____ distant		36. ____ unsociable		52. ____ unsparkling	
5. ____ timid		21. ____ shy		37. ____ unbold		53. ____ forceless	
6. ____ unargumentative		22. ____ uncalculating		38. ____ boastless		54. ____ uncunning	
7. ____ softhearted		23. ____ gentlehearted		39. ____ charitable		55. ____ sympathetic	
8. ____ cheerful		24. ____ neighborly		40. ____ enthusiastic		56. ____ perky	
9. ____ self-confident		25. ____ persistent		41. ____ dominant		57. ____ domineering	
10. ____ crafty		26. ____ cunning		42. ____ sly		58. ____ calculating	
11. ____ ironhearted		27. ____ ruthless		43. ____ cruel		59. ____ warmthless	
12. ____ unneighborly		28. ____ dissocial		44. ____ antisocial		60. ____ introverted	
13. ____ bashful		29. ____ meek		45. ____ unauthoritative		61. ____ unaggressive	
14. ____ undemanding		30. ____ uncrafty		46. ____ unwily		62. ____ unsly	
15. ____ accommodating		31. ____ tenderhearted		47. ____ tender		63. ____ kind	
16. ____ friendly		32. ____ extraverted		48. ____ outgoing		64. ____ jovial	

Short D3

Please rate the degree to which you agree with the following statements.

Disagree Strongly 1	Disagree 2	Neutral 3	Agree 4	Agree Strongly 5
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- _____ 1. It's not wise to tell your secrets.
- _____ 2. Most people who get ahead in the world lead clean moral lives.
- _____ 3. Generally speaking, people won't work hard unless they have to.
- _____ 4. There's a sucker born every minute.
- _____ 5. Whatever it takes, you must get the important people on your side.
- _____ 6. Careful what you say because you never know who may be useful in the future.
- _____ 7. It's wise to keep track of information that you can use against people later.
- _____ 8. You should wait for the right time to get back at people.
- _____ 9. There are things you should not tell people because they don't need to know.
- _____ 10. People see me as a leader.
- _____ 11. I hate being the center of attention.
- _____ 12. Many group activities tend to be dull without me.
- _____ 13. I know that I am special because everyone keeps telling me so.
- _____ 14. Those with talent and good looks should not hide them.
- _____ 15. I like to get acquainted with important people.
- _____ 16. I feel embarrassed if someone compliments me.
- _____ 17. I have been compared to famous people.
- _____ 18. I am likely to show off if I get the chance.
- _____ 19. I like to get revenge on authorities.
- _____ 20. I avoid dangerous situations.

- _____ 21. I am a thrill seeker.
- _____ 22. Payback needs to be quick and nasty.
- _____ 23. People often say I'm out of control.
- _____ 24. It's true that I can be cruel.
- _____ 25. People who mess with me always regret it.
- _____ 26. I have never gotten into trouble with the law.
- _____ 27. I like to pick on losers.

Motivation to Lead

Please indicate on a scale to 1 to 5 to what extent you agree with the following statements.

Disagree Strongly	Disagree	Neutral	Agree	Agree Strongly
1	2	3	4	5

_____ 1. Most of the time, I prefer being a leader rather than a follower when working in a group.

_____ 2. I am the type of person who is not interested to lead others.

_____ 3. I am definitely not a leader by nature.

_____ 4. I am the type of person who likes to be in charge of others.

_____ 5. I believe I can contribute more to a group if I am a follower rather than a leader.

_____ 6. I usually want to be the leader in the groups that I work in.

_____ 7. I am the type who would actively support a leader but prefers not to be appointed by a leader.

_____ 8. I have a tendency to take charge in most groups or teams that I work in.

_____ 9. I am seldom reluctant to be the leader of a group.

_____ 10. I am only interested to lead a group if there are clear advantages for me.

_____ 11. I will never agree to lead if I cannot see any benefits from accepting that role.

_____ 12. I would only agree to be a group leader if I know I can benefit from that role.

_____ 13. I would agree to lead others even if there are no special rewards or benefits with that role.

_____ 14. I would want to know "what's in it for me" if I am going to agree to lead a group.

_____ 15. I never expect to get more privileges if I agree to lead a group.

_____ 16. If I agree to lead a group, I would never expect any advantages or special benefits.

_____ 17. I have more of my own problems to worry about than to be concerned about the rest of the group.

- _____ 18. Leading others is really more of a dirty job rather than an honorable one.
- _____ 19. I feel that I have a duty to lead others if I am asked.
- _____ 20. I agree to lead whenever I am asked or nominated by the other members.
- _____ 21. I was taught to believe in the value of leading others.
- _____ 22. It is appropriate for people to accept leadership roles or positions when they are asked.
- _____ 23. I have been taught that I should always volunteer to lead others if I can.
- _____ 24. It is not right to decline leadership roles.
- _____ 25. It is an honor and privilege to be asked to lead.
- _____ 26. People should volunteer to lead rather than wait for others to ask or vote for them.
- _____ 27. I would never agree to lead just because others voted for me.

PROMIS Anger Scale

Please respond to each item by checking one per answer row.

In the past 7 days...

Never
1

Rarely
2

Sometimes
3

Often
4

Always
5

_____ 1. I was irritated more than people knew...

_____ 2. I made myself angry about something just by thinking about it...

_____ 3. I felt angry...

_____ 4. I felt like I was ready to explode...

_____ 5. I stayed angry for hours...

_____ 6. I felt angrier than I thought I should...

_____ 7. I was grouchy...

_____ 8. I felt annoyed...

PROMIS Anxiety Scale

Please respond to each item by checking one per answer row.

In the past 7 days...

Never
1

Rarely
2

Sometimes
3

Often
4

Always
5

_____ 1. I felt fearful...

_____ 2. I felt anxious...

_____ 3. I felt worried...

_____ 4. I found it hard to focus on anything other than my anxiety...

_____ 5. I felt nervous...

_____ 6. I felt uneasy...

_____ 7. I felt tense...

PROMIS Depression Scale

Please respond to each item by checking one per answer row.

In the past 7 days...

Never
1

Rarely
2

Sometimes
3

Often
4

Always
5

_____ 1. I felt worthless...

_____ 2. I felt that I had nothing to look forward to...

_____ 3. I felt helpless...

_____ 4. I felt sad...

_____ 5. I felt like a failure...

_____ 6. I felt depressed...

_____ 7. I felt unhappy...

_____ 8. I felt hopeless...

Crime and Analogous Behavior Scale

The next questions are going to ask about behaviors that you may have done. Please remember that your answers are confidential and will be used for research purposes only. Please answer as honestly as possible.

1. Do you drink alcohol?

No Yes

2. How old were you when you had your first drink (e.g., more than 1 sip)? _____

3. In the last twelve months, which one of the following statements best describes the way you use alcohol?

Less than once a month

About once or twice a month, never in large amounts

About once or twice a month, sometimes in large amounts

About once or twice a week, never in large amounts

About once or twice a week, always in large amounts

Almost everyday, never in large amounts

Almost everyday, sometimes in large amounts

Almost everyday, usually in large amounts

4. Have you ever had five or more drinks (beer, wine, or liquor) in a single day?

No Yes

5. How many times in the last MONTH have you had 5 or more drinks in a single day? _____

6. Have you ever smoked marijuana or hashish?

No Yes

7. Have you ever used cocaine or crack (in any form)?

No Yes

8. Have you ever used psychedelics (e.g., mushrooms, acid, peyote)?

No Yes

9. Have you ever used any other "hard" drugs (e.g., heroin, speed, crank)?

No Yes

10. Have you ever been arrested for driving under the influence of alcohol (DUI, DWI)?

No Yes

11. Have you ever taken a car that didn't belong to you without the owner's permission?

No Yes

12. Have you ever taken something not belonging to you worth less than \$50?

No Yes

13. Have you ever taken something not belonging to you worth over \$50?

No Yes

14. Have you ever been in a physical fight with another individual since the age of 18?

No Yes

15. Have you ever attacked another person with a weapon with the intent to injure, rape, or kill?

No Yes

16. Have you ever hurt someone (intentionally – not during a sporting event) to a degree that he/she needed bandages or a doctor?

No Yes

17. Have you ever used a weapon (e.g., gun, knife, club) to get something from someone?

No Yes

18. Have you ever broken into a house or building or entered through an unlocked door or window to steal or to vandalize?

No Yes

19. Have you ever been arrested (for anything other than DUI/DWI)?

No Yes

20. Have you ever thrown something at a romantic partner?

No Yes

21. Have you ever twisted a romantic partner's arm or hair?

No Yes

22. Have you ever pushed or shoved a romantic partner?

No Yes

23. Have you ever grabbed a romantic partner?

No Yes

24. Have you ever slapped a romantic partner?

No Yes

25. Have you ever punched or hit a romantic partner with something that could hurt?

No Yes

Ten Item Personality Inventory

Here are a number of personality traits that may or may not apply your friend. Please choose a number next to each statement to indicate the extent to which *you agree or disagree with that statement as it relates to your FRIEND*. You should rate the extent to which the *pair of traits* relates to your friend, even if one trait applies more strongly than the other.

Disagree Strongly	Disagree Moderately	Disagree a Little	Neither Agree Nor Disagree	Agree a Little	Agree Moderately	Agree Strongly
1	2	3	4	5	6	7

I see my friend as:

- _____ 1. Extraverted, enthusiastic.
- _____ 2. Critical, quarrelsome.
- _____ 3. Dependable, self-disciplined.
- _____ 4. Anxious, easily upset.
- _____ 5. Open to new experiences, complex.
- _____ 6. Reserved, quiet.
- _____ 7. Sympathetic, warm.
- _____ 8. Disorganized, careless.
- _____ 9. Calm, emotionally stable.
- _____ 10. Conventional, uncreative.
- _____ 11. Immodest, grandiose.
- _____ 12. Honest, straightforward.
- _____ 13. Assertive, dominant.

Below are three single traits that may or may not apply your friend. Please choose a number next to each trait to indicate the extent to which *you agree or disagree with that trait as it relates to your FRIEND*.

_____ 1. Likeable

_____ 2. Attractive

_____ 3. Narcissistic