Narcissism and Self-Enhancement: A Review and Meta-Analysis

Emily Grijalva

University at Buffalo, State University of New York

Luyao Zhang

University of Illinois at Urbana-Champaign

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Abstract

It has long been recognized that narcissists tend to self-enhance, but more recently, scholars have begun searching for patterns underlying this overall trend—whether narcissists enhance some of their attributes more than others. The current paper quantitatively reviews the Narcissism/self-enhancement literature using a multilevel meta-analytic technique. Results from 148 correlations reported in 26 empirical studies (*N* = 5,381) revealed that (a) on average, the Narcissism/self-enhancement relationship was .20 (95% CI = [.14, .26]), (b) narcissists tend to self-enhance their agentic characteristics more than their communal characteristics, and (c) the magnitude of narcissists’ self-enhancement bias—calculated as the discrepancy between self- and observer-ratings—was not impacted by the length of the relationship between the raters (e.g., acquaintances vs. close others). In addition, we individually summarized narcissists’ average self-enhancement for 10 different constructs (i.e., the Big Five, task performance, intelligence, leadership, attractiveness, and likeability). Finally, the impact of using regression residuals as opposed to difference scores to calculate self-enhancement was also explored.

*Keywords*: Narcissism, self-enhancement, meta-analysis, agency, communion

**Narcissism and Self-Enhancement: A Meta-Analysis**

Self-enhancement is a fundamental characteristic of Narcissism that is featured prominently in the *Diagnostic and Statistical Manual of Mental Disorders’,* 5th ed. (*DSM*-5) description of Narcissistic Personality Disorder (e.g., “exaggerates achievements and talents, expects to be recognized as superior without commensurate achievements”, APA, 2013, p. 645). As confirmation of the link between Narcissism and self-enhancement, past research has revealed that individuals high in Narcissism tend to self-enhance across a variety of domains: perceiving themselves to be more physically attractive (Bleske-Recheck, Remiker, & Baker, 2008; Gabriel, Critelli, & Ee, 1994), intelligent (Farwell & Wohlwend-Lloyd, 1998; Gabriel et al., 1994; Paulhus, Harms, Bruce, & Lysy, 2003; Paulhus & Williams, 2002), leader-like (Grijalva, Harms, Newman, Gaddis, & Fraley, 2014; Judge, LePine, & Rich, 2006), and creative (Goncalo, Flynn, & Kim, 2010) than either objective measures or observer-ratings corroborate. Although Narcissism’s relationship with self-enhancement bias is well accepted, recently there has been an increased effort to identify whether there are patterns underlying these arguably inaccurate perceptions (e.g., Carlson, Vazire, & Oltmanns, 2011b).

It has been suggested that in “*ego-involving contexts”* narcissistic[[1]](#footnote-1) individuals will be particularly motivated to bolster their self-image by positively distorting their self-perceptions (Robins & John, 1997, p. 38). Prompting the question, what do narcissists consider to be an ego-involving context? A better understanding of what narcissists positively distort (and thus presumably value as part of their self-concept), and of equal importance, what they do *not* positively distort (and thus presumably do not value as part of their self-concept) may help to make sense of a complex and often contradictory personality trait by giving insight into narcissists’ world-view. The current work therefore provides a comprehensive review and meta-analysis of the Narcissism/self-enhancement bias literature. In doing so, we will first consolidate past findings to give an overall estimate of how much narcissists self-enhance in general, across criteria. We will next attempt to make four additional theoretical contributions, by: (a) distinguishing between self-enhancement in agentic as opposed to communal outcome variables, (b) examining whether the length of acquaintanceship affects observer ratings and how this may magnify or diminish the self-enhancement bias, (c) addressing how existing issues related to the measurement of self-enhancement (i.e., regression residuals versus difference scores) may affect the magnitude of Narcissism’s relationship with self-enhancement, and (d) separately estimating the Narcissism/self-enhancement relationship for specific criteria (e.g., intelligence, task performance, and physical attractiveness).

**Narcissism and Self Enhancement**

Narcissism is defined as “a pervasive pattern of grandiosity (in fantasy and behavior), need for admiration, and lack of empathy, beginning by early adulthood and present in a variety of contexts” (APA, 2013, p. 645). At the heart of Narcissism is grandiosity—which means to be “characterized by affectation of grandeur or splendor or by absurd exaggeration” (Merriam-Webster’s online dictionary)—thus, the defining feature of Narcissism directly reflects self-enhancement. It should be noted, however, that inflated self-perceptions are not unique to narcissists. As far back as 1937 Gordon Allport asserted that there is a universal human motivation to view oneself positively, and the desire to be viewed positively has been labeled one of the “most prominent motivational assumptions of Western Psychology” [Kwang & Swann, 2010, p. 263; see also Jones (1973) and Leary (2007)]. Indeed, this vital human need to maintain a positive self-concept is evident in research showing a general tendency for people to have inflated views of themselves (Campbell, Reeder, Sedikides, & Elliot, 2000; Gramzow & Willard, 2006; John & Robins, 1994), endorse self-serving attributions (Blaine & Crocker, 1993; Bradley, 1978), and believe that they are better than the average person (i.e., the better-than-average effect; Alicke, 1985; Brown, 1986). Consistent with past evidence, we contend that people generally self-enhance, but that there are also substantial individual differences in the tendency to self-enhance—with Narcissism being a leading predictor of this predisposition.

But what is it about Narcissism that results in its association with self-enhancement? Self-enhancement theory has drawn heavily on individuals’ underlying self-motives [for a review see Leary (2007)]. Specifically, self-enhancement has been described as “the desire to maintain or increase the positivity (or decrease the negativity) of one’s self-concept or, alternatively, the desire to maintain, protect, and enhance one’s self-esteem” (Leary, 2007, p. 320). For reasons we will explicate below, Narcissism is likely related to self-enhancement because it is an extreme manifestation of the aforementioned desire to “maintain, protect, and enhance one’s self-esteem” (Leary, 2007, p. 320).

By all accounts Narcissism is a complex trait wherein people self-report high levels of psychological well-being and emotional stability, but it has long been suspected that narcissists’ positive self-evaluations are fragile and unstable—a defensive form of self-esteem that is inordinately contingent upon others’ admiration and that is vulnerable to challenge (Kernberg, 1985; Millon, 1990; Morf & Rhodewalt, 2001; Raskin, Novacek, & Hogan, 1991a, 1991b; Rhodewalt, Tragakis, & Finnerty, 2006; Robins & Beer, 2001; Zeigler-Hill, Myers, & Clark, 2010). From this theoretical perspective, Narcissism is a self-regulatory mechanism that is used to maintain unrealistically high levels of self-esteem (Millon, 1990; Morf & Rhodewalt, 2001), and the tendency to self-enhance is the key weapon in narcissists’ self-regulatory arsenal. These positive illusions are then maintained by dealing harshly with potentially disconfirming evidence; for example, by derogating and discrediting the source of negative feedback (Bushman & Baumeister, 1998; Kernis & Sun, 1994) and by blaming other people when they experience failure (Campbell et al., 2000). In fact, narcissists’ maladaptive self-regulatory style has been referred to as “defensive denial rather than psychological adjustment” (Robins & Beer, 2001, p. 340). In sum, it has been argued that Narcissism is inextricably linked to self-enhancement, because self-enhancement helps support narcissists’ predominant goal—to maintain a positive self-construal.

**Two types of self-enhancement bias**

Self-enhancement bias is the propensity to see oneself in an overly positive light, but there are traditionally two different approaches to establishing the amount of bias present in an individual’s self-evaluation. The first is based on social comparison (perceiving oneself more positively than one perceives others) and the second is based on self-insight (perceiving oneself more positively than one is perceived by others; Kwan, John, Kenny, Bond, & Robins, 2004; Kwan, John, Robins, & Kuang, 2008). Social comparison is measured by asking people to compare themselves to others (e.g., compared to the average person, how agreeable are you?), whereas self-insight is measured by comparing peoples’ self-ratings to observer-ratings or objective measures (e.g., comparing a participant’s self-reported agreeableness to the agreeableness score reported for them by a knowledgeable observer).

This distinction is important because the different types of self-enhancement are associated with different psychological health outcomes; self-enhancement as measured by social comparison is considered to be more adaptive than self-enhancement as measured by self-insight (Kwan et al., 2004). The historical lack of recognition of the difference between social comparison and self-insight has been blamed for the prolonged debate concerning whether or not self-enhancement promotes adjustment (Kwan et al., 2004) that surrounds contradictory findings on positive illusions [Taylor & Brown, 1994; but see also Block and Colvin (1994)]. A recent review of the self-enhancement literature helped make sense of these apparent contradictions by establishing that self-enhancement, as measured by social comparison, is related to high self-esteem and psychological well-being (Kwan et al., 2004). In contrast, studies that define self-enhancement in terms of self-insight tend to find that it is relatively maladaptive (Kwan et al., 2004). As an example, Colvin, Block and Funder (1995) found that men who self-enhanced at 18 (comparing self-report to observer-reports), were perceived negatively by unacquainted examiners five years later—being described as “deceitful”, “distrustful of people”, and “has [a] brittle ego” (p. 1155). Narcissism is studied more frequently in the self-insight literature than the social comparison literature, thus linking Narcissism to the more maladaptive variant of self-enhancement (Kwan et al., 2004).

The current meta-analytic review will exclusively focus on self-insight indices of self-enhancement because of practical issues related to the availability of primary studies that measure Narcissism, but also because, although somewhat unlikely, it is possible that narcissists really are better than average. As evidence, Young & Pinsky (2006) found that celebrities are more narcissistic than the general population, and that Narcissism scores were not related to “years of experience in the entertainment industry”— suggesting that becoming a celebrity doesn’t make one more narcissistic, but that a person is already relatively narcissistic when they become a celebrity (p. 463). If one assumes that celebrities have superior qualities in comparison to the general population, then these results are consistent with the idea that narcissists are better than average. Further, a recent meta-analysis established that Narcissism is linked to physical attractiveness (*r* = .15, *k* = 18, *N* = 1039; Holtzman & Strube, 2010). At the same time, the bulk of existing evidence suggests that Narcissism is *not* positively correlated with other positive traits such as intelligence (Farwell & Wohlwend-Lloyd, 1998; Gabriel et al., 1994; Paulhus et al., 2003), task performance (John & Robins, 1994), leadership effectiveness (Grijalva et al., 2014), or creativity (Goncalo et al., 2010). Regardless of whether or not narcissists are better than average, the potential threat is eliminated when self-reports are compared to external criteria. Particularly given the current paper’s interest in Narcissism, external criteria (i.e., observer reports and objective measures) are essential because they constitute an “explicit standard” against which to establish the magnitude and direction of self-enhancement (Robins & Beer, 2001, p. 340).

As mentioned above, evidence from these self-insight indices suggests that narcissists genuinely believe that they are more attractive, intelligent, creative, and better in a myriad of ways than available evidence can support (see citations in first paragraph). In addition, narcissists’ positive illusions are persistent across time and seemingly immune to disconfirming evidence. For example, Robins and John (1997) performed a study where participants were asked to rate their performance after a leaderless group discussion. As expected, participants’ self-ratings were generally higher than trained raters’, but the interesting part was that when asked to view a video of their performance, individuals low in Narcissism decreased their ratings to more accurately reflect observer-ratings, whereas individuals high in Narcissism further increased their self-ratings to magnify the disconnect between their self-ratings and those of trained raters. The authors suggested that narcissists literally cannot see themselves as others see them because they are “blinded by their need for self-worth” (Robins & John, 1997, p. 42). Based on this evidence, we predict that Narcissism will be positively related to self-enhancement.

*Hypothesis 1:* Narcissism will have a positive relationship with self-enhancement.

**Agency and Communion**

Although a layperson may assume that narcissists indiscriminately self-enhance across all domains, initial evidence suggests that they devalue some traditionally positive traits, while over-emphasizing others. Specifically, this work indicates that narcissistic individuals have unrealistically positive evaluations of their agentic characteristics (e.g., power, dominance, and intelligence) but do not inflate, or inflate to a lesser degree, communal characteristics (e.g., agreeableness, warmth, and honesty; Campbell, Rudich, & Sedikides, 2002; Carlson et al., 2011b). In a seminal work clarifying the boundaries between these two concepts, Wiggins (1991) referred to agency as “the condition of being a differentiated individual, and it is manifest in strivings for mastery and power which enhance and protect that differentiation”, whereas communion was defined as “the condition of being part of a larger social or spiritual entity, and it is manifested in strivings for intimacy, union, and solidarity with that larger entity” (p. 89; see also Bakan, 1966).

A person predominantly self-enhances what is most central to his or her self-image (Gaertner, Sedikides, & Chang, 2008; Gebauer, Sedikides, Verplanken, & Maio, 2012; James, 1907; Sedikides, Gaertner, & Toguchi, 2003; Robins & Beer, 2001). It makes sense, therefore that narcissists’ positive illusions would give priority to agentic characteristics based on agency’s alignment with “self-seeking, egocentric motives” (Wiggins, 1991, p. 91). Further, there is direct evidence that Agency is more central to narcissists self-concept than communion—Narcissism is positively correlated with the agency axis of the interpersonal circumplex (*r* = .84; Bradlee & Emmons, 1992), but is not correlated with the communion axis of the interpersonal circumplex (*r* = .08; Bradlee & Emmons, 1992). In addition, narcissists tend to have agentic daydreams focusing on achievement (*r* = .45), heroic (*r* = .44), sexual (*r* = .37) and hostile (*r* = .23) themes (Raskin & Novacek, 1991), and in a daily diary study, narcissists’ state self-esteem was decreased by negative achievement events, but was immune to both positive and negative social events that the authors considered indicators of communion (Zeigler-Hill et al., 2010). Finally, Campbell and colleagues (2002) found that narcissists displayed a pronounced better-than-average effect for agentic characteristics but not communal characteristics. Results like these led Paulhus (2001) to propose that Narcissism is an extreme form of agency, and more recently, Campbell and colleagues introduced an agency model of Narcissism (Campbell, Brunell, & Finkel, 2006; Campbell & Foster, 2007). It appears that agency, but not communion, is consistent with narcissists’ grandiose conception of success.

Perhaps more surprising than the finding that narcissists endorse agentic characteristic, is recent research showing that individuals high in Narcissism have a relatively accurate idea of how others perceive their communal traits compared to their agentic traits (Carlson et al., 2011a, 2011b). It is possible that narcissists associate communal characteristics such as honesty and dependability with weakness and vulnerability—theoretically, exactly what the self-regulatory strategy of Narcissism is meant to avoid (see Morf & Rhodewalt, 2001). For individuals high in Narcissism, this would result in a decreased desire to align communal characteristics with their self-concept. In sum, narcissists appear to enhance agentic characteristics more than communal characteristics, but it is unclear by exactly how much. On average, across studies, do narcissists continue to enhance communal characteristics just to a lesser degree? The current work aims to estimate the magnitude of the self-enhancement effect for both agency and communion, as well as compare the two.

*Hypothesis 2:* Narcissists will self-enhance their agentic characteristics to a greater extent than they will self-enhance their communal characteristics.

**Acquaintanceship**

As observer-ratings are often the external criteria used to establish the magnitude of narcissists’ self-enhancement, we will also be examining how observer characteristics systematically vary across studies. Specifically we are interested in whether the length of acquaintanceship affects the magnitude of the discrepancy between narcissists’ self-reports and observer-reports. Taking into consideration how well observers know participants is vital, because peoples’ impressions of narcissists tend to change over time; narcissists make positive first impressions that deteriorate as people get to know them better (Carlson et al., 2011; Grijalva et al., 2014; Paulhus, 1998). Based on the thin slices of behavior paradigm, after a mere 30 seconds of exposure, participants identified narcissists as being extraverted and likeable (Oltmanns, Friedman, Fiedler, & Turkheimer). However, Paulhus (1998) found that, over the course of two months, narcissists went from being described as “confident, entertaining, and intelligent” by new acquaintances to being described as “arrogant, tends to brag, and overestimates abilities” as their acquaintances became familiar with a broader range of their behavior (p. 1204). Similarly, Carlson and colleagues (2011b) found that new acquaintances perceived narcissists more positively than knowledgeable informants, and that even narcissists themselves were aware of how others’ perceptions of them became more negative over time (Carlson et al., 2011b). Thus, we predict that narcissists’ self-enhancement bias will be larger in magnitude when based on (the more negative) ratings from close others than (the more positive and thus more similar) ratings from new acquaintances.

*Hypothesis 3*: Narcissists’ self-enhancement bias will be larger in magnitude when based on ratings from close others than when based on ratings from new acquaintances.

**Difference Scores versus the Self-Criterion Residual Method**

To calculate self-enhancement, researchers use one of two methods: the self-criterion residual method (John & Robins, 1994; Paulhus & John, 1998) versus difference scores that are calculated by subtracting external-ratings from self-ratings. Difference scores have long been criticized for their methodological weaknesses (Cronbach, 1958, 1992; Cronbach & Furby, 1970; Edwards, 1994; Edwards, 1995; Johns, 1981; Wall & Payne, 1973). These criticisms have been discussed at length elsewhere, but generally include a concern that the difference score is less reliable than either of its components when the individual components are correlated, as will most likely be the case when comparing self-reports and observer-reports. In addition Edwards (1995) outlines three other problems with difference scores that lead to the conclusion that difference scores are “ambiguous and potentially misleading” (p. 308).

Given the problems associated with difference scores, the self-criterion residual method (John & Robins, 1994; Paulhus & John, 1998) has become the preferred approach to calculating self-enhancement bias. The self-criterion residual method regresses self-reports onto an external criteria (e.g., others’ perceptions). The resulting residuals then reflect the degree of self-other bias present because all of the shared variance has been removed—effectively making the residuals an estimate of self-enhancement (or in some cases self-effacement, if the residual is negative, meaning that an individual’s self-report was lower than the observer report). Finally, the residuals (or bias scores) are correlated with an independent variable—in this case Narcissism—to calculate its relationship with self-enhancement. The current meta-analysis will examine the effect of the two different methods of calculating self-enhancement bias on the magnitude and direction of the Narcissism/self-enhancement relationship. We will be attempting to address the question, are the effect sizes produced using the more methodologically sound self-criterion residual method the same as those produced using difference scores? Thus,

*Research Question 1*: Are the effect sizes produced using the self-criterion residual method the same as those produced using difference scores?

In addition to the previously described hypotheses and research questions examining the overall Narcissism/self-enhancement relationship, we will also investigate Narcissism’s relationship with individual self-enhancement criteria (e.g., intelligence, attractiveness, and leadership). These additional analyses will be performed in an exploratory manner as they are contingent on effect size availability, which makes it is difficult to formulate specific a priori hypotheses.

**Method**

**Literature Search**

First, to identify samples with useful information for the present meta-analysis, we searched various electronic databases between the years 1980 and 2014. Keyword searches in PsycINFO, Google Scholar, Web of Science, and Dissertation Abstracts International were performed using the following keywords (and variations thereof): Narcissism, narcissist, self-enhancement, positive illusion, self-report, self-perception, other-report, peer-report, observer-report, self-evaluation, self-assessment, self-other discrepancy. Second, we searched the available conference programs for the Society of Industrial and Organizational Psychology (SIOP), Academy of Management (AOM), Association for Research in Personality (ARP), Society for Personality and Social Psychology (SPSP), and the American Psychological Association (APA). Third, a snowball approach was used where reference sections of articles already obtained were examined. Fourth, unpublished data was requested from key scholars in the field; researchers were specifically contacted if their published or unpublished papers did not provide necessary information. Overall, the keyword search identified 49 samples that appeared relevant to the current meta-analysis.

**Inclusion Criteria**

No restrictions were placed on the self-enhancement variables included in the meta-analysis (see Table 1 for a list of the self-enhancement domains comprising the current work). The first criteria for inclusion concerned the type of self-enhancement measure. We were specifically interested in social comparison measures; thus we only included those primary studies that compared narcissists’ self-reports with observer-reports (e.g., friend, family member, co-worker, supervisor, etc.) or objective ratings (e.g., high school GPA, SAT scores, etc.). Second, we included effect sizes using the following Narcissism measures: the Narcissistic Personality Inventory (NPI; Emmons, 1984; Raskin & Terry, 1988), the shortened NPI-16 (Ames, Rose, & Anderson, 2006), the California Personality Inventory (CPI; Gough & Bradley, 1992, 2002; Wink & Gough, 1990), the Bold scale of the Hogan Development Survey (HDS-Bold; Hogan & Hogan, 2009), a Narcissism measure derived from the California Adult Q-set (CAQ; Block, 1961/1978), an observational Narcissism measure developed from *DSM*-III-R definition of Narcissistic Personality Disorder (e.g., John & Robins, 1994), a 10-item adjective-based measure of Narcissism (Harms, Roberts, Wood, & Brummel, 2006), and the Narcissistic Personality Disorder Scale (NPDS; Ashby, Lee, & Duke, 1979). The only measure excluded was the newly developed Communal Narcissism Inventory (Gebauer et al., 2012). The Communal Narcissism Inventory was developed to measure a different type of Narcissism than all of the aforementioned ‘agentic’ Narcissism measures and is associated with different correlates than agentic Narcissism (Gebauer et al., 2012). The distinction between communal and agentic Narcissism is particularly problematic for the current meta-analysis because we are investigating agency/communion as a moderator of the type of domain in which narcissists self-enhance, thus we chose to exclude the Communal Narcissism Inventory from the meta-analysis. Because Communal Narcissism is a new construct, this exclusion criterion only resulted in the removal of effect sizes from a single paper (i.e., Gebauer et al., 2012). Third, we included self-enhancement correlations based on both difference scores and regression residuals and treated this as a moderator in our analyses. Fourth, we excluded clinical samples of Narcissism. Finally, if multiple primary studies used the same sample, then we only included the data once.

**Coding of Primary Studies**

All effect sizes were coded in the desirable direction. In other words, positive scores indicate self-enhancement and negative scores indicate self-effacement. Studies were coded for sample size, the demographic makeup of the sample, the publication type (i.e., published paper, dissertation/thesis, unpublished manuscript, conference paper, or technical manual), type of self-enhancement ratings (i.e., observer report vs. objective measures), the type of sample (i.e., students, internet sample, or community sample), and type of self-enhancement measure (i.e., regression residual vs. difference score). Further, we coded the raters’ relationship with the focal participant using the criteria established by past authors (Grijalva et al., 2014) —if the raters had known the participant for a short period of time (i.e., less than 1 week) they were considered acquaintances versus for a longer period of time (i.e., ≥ 1 week) they were considered a close observer. In addition, we coded whether each effect size construct was an indicator of agency, communion, or neither (the neither category was chosen if it was decided that the effect size was neither consistent with agency nor communion or if it was an indeterminate combination of both constructs). Our coding decisions were based on the definitions of agency and communion provided by Wiggins (1991)—which can be found in our introduction. For a summary of the agency/communion/neither categorization by construct see Table 1. For samples that included a mixture of graphical depictions of effect sizes that were difficult to accurately estimate and exact numerical values, only the numerical values were coded (i.e., Carlson et al., 2011a). If multiple effect sizes were available from a single sample (e.g., Narcissism is correlated with multiple self-enhancement constructs), then they were all coded and a multilevel analysis technique (that will be described shortly) was used to control for nonindependence between effect sizes. Agreement between the first author and second author for the coding of effect sizes was as follows: publication type (100%), type of self-enhancement ratings (100%), type of sample (100%), length of relationship (97%), agency/communion (98%), and type of self-enhancement measure (100%). Divergent ratings were discussed until agreement was reached. The main codes and input values for all of the effect sizes included in the meta-analysis can be found in Appendix A.

**Analysis**

Many of the samples included in the present meta-analysis reported multiple correlations for the Narcissism/self-enhancement relationship (e.g., reporting narcissists’ self-enhancement across multiple constructs, across multiple time points, or across multiple observers). To control for the nested nature of the data, we used a multilevel analysis technique that allowed us to include dependent observations, thus incorporating all of the available information into our analyses. We chose to use this multilevel approach to meta-analysis because using more traditional techniques (e.g., Borenstein, Hedges, Higgins, & Rothstein, 2009; Hunter & Schmidt, 2004) would require creating a composite or average when there are multiple effect sizes from a single sample. Composites/averages are used in order to adhere to the standard statistical assumption of independent observations. However, in the current study, this would often mean averaging across different constructs, such as attractiveness, agreeableness, and intelligence, which would result in the loss of important information. Recently, researchers have instead been using a regression approach that allows one to incorporate multiple effect sizes from a single sample (e.g., Nye, Su, Rounds, & Drasgow, 2012; Podsakoff, Whiting, Welsh, & Mai, 2013; Richman, Kiesler, Weisband, & Drasgow, 1999).

In the current paper, the Narcissism/self-enhancement relationship (effect size) was conceptualized as Level 1 and the sample was conceptualized as Level 2. As a result, we identified 148 effect sizes (Level 1) and 26 independent samples (Level 2). Consistent with past research, the multilevel meta-regression analyses were performed in SAS using PROC MIXED (e.g., Podsakoff et al., 2013), and weighted by sample size, which is best practice for moderator analyses according to Steel and Kammeyer-Mueller (2002). Finally, results are reported both corrected and uncorrected for unreliability in Narcissism. A few samples did not report the reliability of the NPI, thus we imputed the average of the NPI reliability from available studies (alpha = .84).

Coding of dichotomous variables

**Results**

Table 2 displays the standard deviations, means, and correlations between the study variables—because the correlations were between dichotomous variables, we calculated tetrachoric correlations. Many of the relationships in Table 1 could not be estimated because there were no studies in our data set that used a particular combination of variables (e.g., there were no unpublished studies where self-enhancement was calculated based on observer-reports by acquaintances). As can be seen, many of the variables were moderately to strongly correlated. This highlights the importance of later analyses, which will be described shortly, that simultaneously examine our moderator variables to determine each variable’s unique contribution to the Narcissism/self-enhancement relationship, controlling for the other moderators.

Before testing our hypotheses, we first calculated the intraclass correlation coefficient ICC(1) (Bliese, 2000), which estimates the percentage of total variance that can be explained by level 2 nesting of effect sizes within sample (i.e., ‘between sample’ variance). In this case, 26% of the total variance can be attributed to level 2 variance (*τ* = .008, *p* < .05; *σ*2 = .022), whereas 74% of the variance was attributed to level 1 factors. This suggests that sufficient variance was due to between studies effects to merit using multilevel modeling.

Table 3 reports the results of our multilevel WLS analyses to predict the relationship between Narcissism and self-enhancement. Model 1 displays the relationship between Narcissism and self-enhancement uncorrected for unreliability in Narcissism (*B* = .18[[2]](#footnote-2), *p* < .05; *k* = 148; samples = 26; 95% CI = [.13, .23]), and Model 2 estimates the relationship between Narcissism and self-enhancement corrected for unreliability in Narcissism (*B* = .20, *p* < .05; *k* = 148; samples = 26; 95% CI = [.14, .26]). The pseudo-*R*2 for Model 2 was xx. As expected, Narcissism was positively related to self-enhancement, supporting Hypothesis 1.

**Moderator analyses**

***Agency and Communion.*** Next, we tested our hypotheses and research questions concerning agency and communion. Out of a total of 148 effect sizes 80 were coded as agentic (54%) and 48 (32%) were coded as communal; 20 effect sizes could not be coded as either agentic or communal. First, we estimated the magnitude of narcissists’ self-enhancement for agentic and communal constructs by regressing them onto the Narcissism/self-enhancement effect sizes (see Model 3). Both of the regression coefficients for these predictors were statistically significant (agency *B* = .14, *p* < .05; communion *B* = -.12, *p* < .05). In addition, we estimated the average relationship between agency and self-enhancement, as well as communion and self-enhancement. For agentic self-enhancement constructs (e.g., power and extraversion), the average Narcissism/self-enhancement relationship was predicted to be .27 [; ]. In contrast, for communal self-enhancement constructs (e.g., honesty and agreeableness), the average Narcissism/self-enhancement relationship was predicted to be .01 [].

Given the nature of Hypothesis 2, which specifically addresses whether narcissists self-enhance more in agentic domains than communal domains, we next employed contrast coding. Contrast coding allows researchers to choose between different ways to partition the available variance in order to more precisely test their hypotheses. Methodologists frequently recommend contrast coding to “sharpen the interpretation of results” (Cohen, Cohen, West, & Aiken, 2003, p. xxx; see also Abelson, 1995; Judd, McClelland, & Culhane, 1995; Rosenthal & Rosnow, 1985). Because there were three groups (agency, communion, and neither), we had to have two contrasts. Contrast 1 compared the mean of agentic and communal criteria with the mean of criteria coded as ‘neither agentic nor communal’ (agency coded as 1/3, communion coded as 1/3, and neither coded as -2/3). This contrast was not predicted to be statistically significant, as we did not expect the ‘neither agency nor communion’ category to differ statistically from agency and communion. As expected, the regression coefficient representing this contrast was not statistically significant (*β* = .01, *p* > .05). However, contrast 2 directly addressed Hypothesis 2 and compared agentic criteria with communal criteria (agency coded as 1/2, communion coded as -1/2, and neither coded as 0). We hypothesized that narcissists would be more likely to self-enhance agentic aspects of themselves than communal aspects of themselves, and this hypothesis was supported (the regression coefficient associated with the difference between agency and communion was .25, *p* < .05). An advantage of using contrast coding is that the regression coefficients are directly interpretable; .25 is the difference between the average correlation observed between Narcissism and self-enhancement for agentic constructs and the average correlation observed between Narcissism and self-enhancement for communal constructs. Thus, narcissists tend to self-enhance their agentic characteristics more than their communal characteristics, supporting Hypothesis 2.

***Acquaintanceship.*** In Model 4, we examined whether the length of acquaintanceship affects the Narcissism-self-enhancement relationship. It was predicted that individuals who have only known a narcissist for a short period of time (i.e., acquaintances) will see the narcissist more positively, resulting in a smaller discrepancy between their observer reports and narcissists’ self-reports as compared to more knowledgeable observers (i.e., close others). However, this hypothesis was not supported—the length of acquaintanceship (*B* = -.02, *p* > .05) was not a statistically significant predictor of the correlation. For effect sizes based on observer ratings from acquaintances, the average Narcissism/self-enhancement relationship was predicted to be .21 [; ], which was very similar to the average Narcissism/self-enhancement relationship observed for close others, which in this case was equal to the intercept, .23. Therefore, Hypothesis 3 was not supported.

***Methodological moderators.*** In addition, we examined several methodological moderators of interest. Neither publication status (i.e., published vs. unpublished; *B* = -.06, *p* > .05), the source of the self-enhancement ratings (i.e., either observer-reports or objective measures; *B* = .07, *p* > .05) nor the Narcissism measure used (i.e., NPI vs. non-NPI; *B* = -.07, *p* > .05) were statistically significant predictors of the Narcissism/self-enhancement relationship. In other words, the Narcissism/self-enhancement relationship remained relatively consistent regardless of the aforementioned methodological differences across studies. These findings provide evidence for the robustness of the Narcissism’s association with self-enhancement.

***Self-criterion residual method versus difference scores.*** An additional methodological moderator of interest addressed Research Question 1 (i.e., whether effect sizes produced using the self-criterion residual method are the same as those produced using difference scores). In this case, the regression coefficient was statistically significant (*B* = .14, *p* < .05). Effect sizes with self-enhancement measures calculated using the more methodologically sound self-criterion residual method tended to be larger than those calculated using difference scores. To be thorough, we further performed all of our analyses with the effect sizes based on difference scores removed to ensure that our conclusions remained the same (see Table 4). With effect sizes derived from difference scores removed, the number of effect sizes decreased from 148 to 110 (74% of the correlations in our original data set were based on residuals) and the number of independent samples decreased from 26 to 17. The corrected meta-analytic correlation increased slightly when difference scores were removed (from *B* = .20 to *B* = .24, *p* < .05, 95% CI = [.18, .31], although the confidence intervals overlapped). The overall pattern of results, however remained the same—in both cases only the agency (*B* = .14, *p* < .05) and communion (*B* = -.12, *p* < .05) moderators were statistically significant. The number of effect sizes decreased, but the magnitude of the effect sizes either remained the same or increased slightly. Therefore, the significant Narcissism/self-enhancement relationship is not an artifact produced by the much maligned difference score technique. In fact, correlations using difference scores to calculate self-enhancement are smaller than those produced using the superior residual approach. The observed decrease in correlation size provides yet another reason for researcher to stop using difference scores to calculate self-enhancement.

***Competing moderators.*** We also simultaneously regressed the effect sizes onto our moderators to estimate each variable’s unique contribution. There was one caveat—we excluded the observer-report/objective measure moderator from this analysis because of the amount of collinearity between the observer-report/objective measure moderator and the residual/difference score moderator (*r* = .73, *p* < .05). Very few primary studies used objective measures (only 21 of 146 effect sizes); however studies that used objective measures were also those that employed difference scores (when effect sizes based on difference scores were removed from the pool of effect sizes using objective measures, only 5 of the 21 objective measure effect sizes remained). Overall, the competing moderators model (Model 9) found that both the agency and communion moderators continued to be statistically significant predictors of the Narcissism/Self-Enhancement relationship, whereas none of the methodological moderators were significant. The residual vs. difference score moderator was no longer statistically significant.

**Individual self-enhancement constructs**

Next, we individually examined the extent to which narcissists’ self-enhanced different constructs. As part of this analysis we searched for exceptions to the previously described trend for agency and communion (i.e., we examined whether there were any agentic characteristics that narcissists did not inflate and communal characteristics that narcissists did inflate). Identifying exceptions might offer insight into boundaries concerning narcissists’ agentic self-enhancement and hints regarding what it is about communion that narcissists may find unappealing. Unfortunately, we were limited by the number of available effect sizes, and only performed this additional analysis for constructs that had effect sizes from at least three independent samples. We were able to perform this additional analysis for 10 constructs out of the original 23 constructs included in the meta-analysis (43%; if the different types of fairness are considered one construct; see Table 1).

First, we will describe our results for constructs categorized as agentic. We found that the Narcissism/self-enhancement relationship for task performance was not statistically significant (*B* = .14, *p* > .05; *k* = 17, samples = 6). This result was unexpected, so we took a closer look at the individual effect sizes included in the analysis, and it was discovered that there were two broad types of task performance. The first type of task performance came from a single study where participants performed a remote associates task; they were provided with three words and instructed to provide a fourth word that “when combined with each of the three stimulus words would result in a common compound word of phrase” (i.e., Nunez, 2007, p. 42). In contrast, the second type of task performance came from group decision making tasks (e.g., lost on the moon; Robins & Beer, 2001) or peer-ratings based on individual task performance on a group project (Paulhus, 1998). When the remote associates task was examined separately from the other types of task performance, results revealed that narcissists did not self-enhance on the remote associates task (*B* = -.05, *p* > .05; note this result should be interpreted with caution because it is based on data from a single study), but did self-enhance when task performance was measured using other task performance metrics (*B* = .20, *p* > .05; *k* = 11, samples = 5). The narcissism/self-enhancement relationship for other agentic constructs is as follows: intelligence (*B* = .28, *p* > .05; *k* = 15, samples = 10), leadership (*B* = .34, *p* > .05; *k* = 11, samples = 4), extraversion (*B* = .41, *p* > .05; *k* = 9, samples = 4), attractiveness (*B* = .38, *p* > .05; *k* = 11, samples = 5), and openness (*B* = .38, *p* > .05; *k* = 7, samples = 3)—all of the meta-analytic effect sizes were statistically significant (i.e., their confidence intervals did not include zero). In summary, each of the agentic constructs that we were able to examine individually was significantly related to narcissistic self-enhancement—there were no interesting exceptions.

Next, we examined narcissists’ tendency to self-enhance on communal constructs. Although 48 out of 148 effect sizes (32% of total effect sizes) were coded as representing communion, we were only able to individually examine two communal constructs: agreeableness and likeability. As expect, narcissists did not self-enhance their agreeableness (*B* = -.05, *p* > .05; *k* = 10, samples = 4) nor their conscientiousness (*B* = .13, *p* > .05; *k* = 7, samples = 3), but surprisingly, they did enhance their likability (*B* = .32, *p* < .05; *k* = 7, samples = 3). Therefore, likability provides an exception to the overall null relationship between narcissistic self-enhancement for communal constructs. In our discussion section, we will explore what it is about likability as opposed to agreeableness that may result in the differing relationships with narcissists’ tendency to self-enhance—although we should point out that the likeability result should be interpreted with caution because it was based on only 3 samples. Finally, emotional stability is not traditionally categorized as agentic or communal. Narcissists did not tend to significantly enhance their emotional stability (*B* = .08, *p* > .05; *k* = 7, samples = 4).

**Discussion**

The current paper investigated narcissists’ tendency to self-enhance. We aggregated 148 correlations from 26 independent samples using mixed-effects (multilevel) meta-analytic techniques to reveal that there was a small but consistent relationship between Narcissism and self-enhancement. Further, we discovered that narcissists self-enhanced their agentic attributes more than their communal attributes, suggesting that the aforementioned significant overall Narcissism/self-enhancement relationship was driven by narcissists’ positive distortion in agentic domains. In contrast, the average effect size for communal characteristics was near zero. Although narcissists do possess grandiose positive delusions, these positive delusions appear to be targeted toward agentic attributes—potentially attributes that narcissists consider to be most central to their self-concept.

We found a similar pattern when we examined our results individually by construct; however, these analyses were based on a smaller number of effect sizes and should be interpreted with caution. Narcissism was associated with self-enhancement on all of the agentic characteristics (i.e., task performance, attractiveness, leadership, intelligence, extraversion, and openness). On the other hand, narcissism was largely unrelated to self-enhancement in individual traits categorized as communal, which included agreeableness and conscientiousness (narcissism was positively correlated with likability; a discrepancy we will discuss shortly). In other words, based on our results, one would generally expect narcissists’ self-reported agreeableness and conscientiousness ratings to be relatively accurate (i.e., similar to observer ratings). From a practical perspective, this means that if researchers want an unbiased estimate of a narcissist’s agentic qualities, then they should seek out objective ratings or observer reports. Researchers may, however, be able to rely on narcissists’ self-reported communal ratings, at least for agreeableness and conscientiousness. A potential direction for future research would be to explore generative mechanisms for why narcissists’ self-ratings are more accurate for communal traits. For example, do communal characteristics have a subtle negative connotation to narcissists—are communal characteristics associated with weakness and unwanted vulnerability? While this explanation is intuitively appealing based on some theoretical accounts of Narcissism, such as Morf and Rhodewalt’s (2001) dynamic self-regulatory model of Narcissism, it should be noted that the average communal effect size we found was near zero (i.e., *B* = .01). If narcissists really considered communal traits to reflect negative qualities, then we would have expected to see statistically significant negative effect sizes. Based on our results, narcissists may perceive communal qualities as simply being unimportant. This is consistent with Campbell and Foster’s (2007) observation that one of the defining features of Narcissism is a “*lack of interest* in warm and caring interpersonal relationships” (p. 118, emphasis added).

It is also worth exploring in slightly more detail the only communal trait for which narcissists did in fact self-enhance--likability. At first, it appears as though likeability would fit better with our definition of communion, because likability is associated with being friendly and cooperative (Cillessen & Rose, 2005; van der Linden, Scholte, Cillessen, Nijenhuis, & Segers, 2010). However, likeability has also been used as a measure of popularity (e.g., sociometric status ratings in which one is asked to rate each individual in a group on likeability; e.g., Dion & Berscheid, 1974); in contrast to likeability, popularity “refers to the extent to which one has prestige and influence in a group, and is often associated with social dominance” (van der Linden et al., 2011, p. 2010). It is possible that narcissists are endorsing likeability because they associate likeability with popularity, and consequently, social influence and prestige (agentic characteristics)—a possibility that necessitates further research.

Although emotional stability is neither categorized as being agentic nor communal, we found what we considered to be a surprising result for narcissists’ self-enhancement in emotional stability; a result that we believe may help to shed light on our communion finding. Emotional stability is relevant because it can be considered an indicator of emotional vulnerability (i.e., individuals low in emotional stability tend to experience insecurity and anxiety; e.g., Saucier & Ostendorf, 1999). Past evidence has consistently shown that Narcissists self-report being emotionally stable [i.e., low in neuroticism (*r* = .20, *N* = 18,274; Trzesniewski, Donnellan, & Robins, 2008)]. At the same time, theory posits that narcissists’ self-reports may be inaccurate because Narcissism itself is a self-regulatory strategy meant to compensate for implicit low self-esteem (Zeigler-Hill, 2006). From this perspective, narcissists are either unaware of or do not want to admit that they are experiencing emotional distress. Either way, it could be argued that narcissists are obviously not psychologically healthy, and observer-reports would portray a more accurate picture of narcissists’ emotional stability than these individual are able to self-report. We, however, found that Narcissism was *not* associated with self-enhancement in emotional stability. In other words, observer-reports of narcissists’ emotional stability tend to be similar to narcissists’ self-reports. A finding that sheds light on the debate concerning the true state of narcissists’ psychological health. Although we might like to believe that narcissists are secretly suffering—there is a growing amount of empirical evidence consistent with the conclusion that Narcissism “can be good for mental health” (e.g., Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004, p. xx). Of course, we are not recommending Narcissism as a self-regulatory strategy, because while Narcissism may serve to insulate the narcissistic individual from negative affect, the net effect of Narcissism on interpersonal relationships appears to be quite negative (e.g., Campbell & Foster, 2007).

**Acquaintanceship**

Surprisingly, our acquaintanceship hypothesis (Hypothesis 3) was not supported. Although it is logically intuitive that peoples’ perceptions of narcissists would change over time, because it takes time for narcissists more negative qualities to become apparent, we did not find that Narcissists’ self-enhancement bias was larger in magnitude when based on ratings from close others than when based on ratings from new acquaintances. These results are consistent with another recent meta-analysis that did not find an acquaintanceship effect for the Narcissism-leadership emergence association (Grijalva et al., 2014). Interestingly, results from the person perception literature regarding the impact of acquaintanceship are mixed. Some studies have found that longer acquaintanceship increases self-observer consensus, particularly for less visible traits (e.g., neuroticism; Funder & Colvin, 1988), whereas a review of multiple longitudinal studies failed to support the importance of acquaintanceship for increasing self-observer consensus on the Big Five personality traits (Kenny, Albright, Malloy, & Kashy, 1994). One explanation provided for this disagreement is provided by Kenny’s *weighted average model* (WAM, Kenny, 1991) which suggests that people disagree even when they see exactly the same behavior because they use different meaning systems to interpret the world around them. Therefore, even people who are well-acquainted have their own unique personal filters, and can attribute very different meanings to one another’s behavior.

**Difference Scores**

In reference to our research question concerning the impact of using difference scores, as opposed to regression residuals, we found a statistically significant difference in the magnitude of the effect sizes produced when “difference score vs. regression residual” was the only covariate (see Table 3). When, however, the other competing moderators were included in the model, the difference score vs. regression residual predictor was no longer statistically significant. Regardless, the conclusion that we would like readers to draw from our paper is that if they are forced to choose between using the difference score and the regression residual approaches to calculating self-enhancement, they should use regression residuals and avoid using difference scores. Not only were regression residuals used more frequently than difference scores (suggesting they are the more accepted measure, likely because of the seeming consensus that difference scores have undesirable statistical properties, cf. Edwards, 1995), but also our meta-analytic effect sizes based on regression residuals were slightly larger than those produced using difference scores. That being said, there is now a more advanced method for measuring self-enhancement. Drawing on Kenny’s (1994) Social Relations Model (SRM), this new method was proposed by Kwan and colleagues (2004) and requires round-robin data (i.e., data collected in a small group in which all group members provide self-reports, as well as reports for each other member of the group). If round-robin data is available, then using Kwan and colleagues (2004) method allows one to get a more precise estimate of self-enhancement by taking into consideration both perceiver effects (how one tends to perceive others) and target effects (how one tends to be perceived; for a more detailed description see Kwan et al., 2004 and Borkenau, Zaltauskas, & Leising, 2009).

**Limitations and Future Research Directions**

The current paper has several limitations. First, the number of effect sizes was smaller than we would have liked for the analyses examining individual self-enhancement criteria, as well as for some of the moderator analyses (e.g., fewer studies used objective measures than observer-reports). More robust estimates will emerge as results continue to accumulate. Relatedly, we limited our analysis of Narcissism’s relationship with individual self-enhancement criteria to those constructs for which there were effect sizes from at least three independent primary sources—we were able to examine 10 constructs, but would have liked to perform this analysis for a larger number of constructs. Finally, we would have like to explore how narcissists’ self-enhancement differed cross-culturally, but this was unfortunately not possible as almost all of our primary studies consisted of Western, collectivistic samples (i.e., xxx out of xxx samples).

**Cross-Cultural Implications**

There has been quite a bit of

Discuss pancultural self-enhancement (Sedikides et al., 2003; Sedikides, Gaertner, & Vevea, 2005)

Gebauer, Wagner, Sedikides, & Neberick (2013): agency/communion relationship to self-esteem is moderated by culture, religiosity, age, and sex (factors that render agency self-central)

Help to reconcile empirical contradictions

**Conclusion**

References

Table 1.

*Self-Enhancement Aspects’ Agency and Communion*

|  |  |  |  |
| --- | --- | --- | --- |
| Self –Enhancement Criteria | Agentic | Communal | Neither |
| Agentic Traits | ✓ |  |  |
| Agreeableness |  | ✓ |  |
| Arrogant | ✓ |  |  |
| Communal Traits |  | ✓ |  |
| Conscientiousness |  | ✓ |  |
| Emotional Stability |  |  | ✓ |
| Exaggerates Abilities | ✓ |  |  |
| Extraversion | ✓ |  |  |
| Fairness-Consistency (i.e., extent to which a subject treats staff consistently and does not play favorites) |  | ✓ |  |
| Fairness-Decision Making (i.e., extent to which a subject is unbiased and impartial in making decisions) |  | ✓ |  |
| Fairness-Empathy (i.e., the extent to which a subject can see things from the perspective of his or her s) |  | ✓ |  |
| Fairness-Equality (i.e., extent to which a subject treats employees like equals rather than inferiors) |  | ✓ |  |
| Fairness-Relative (i.e., how fair the subject is relative to other managers within his or her organization) |  | ✓ |  |
| Fairness-Supportiveness (i.e., extent to which a subject provides substantive, symbolic and emotional support to employees) |  | ✓ |  |
| Fairness-Transaction (i.e., extent to which a subject is fair and non-exploitative in resources exchanges with employees) |  | ✓ |  |
| Fairness-Treatment (i.e., extent to which a manager is respectful and sensitive in interactions with staff) |  | ✓ |  |
| Fairness-Voice (i.e., the extent to which a subject is open to the advice and feedback of staff) |  | ✓ |  |
| Funny |  |  | ✓ |
| General Self-Enhancement Across Categories |  |  | ✓ |
| Honest |  | ✓ |  |
| Impulsive | ✓ |  |  |
| Intelligence/Academic Performance | ✓ |  |  |
| Interpersonal Perception |  |  | ✓ |
| Leadership | ✓ |  |  |
| Likable |  | ✓ |  |
| Openness | ✓ |  |  |
| Power-Oriented | ✓ |  |  |
| Physically Attractive | ✓ |  |  |
| Reliable |  | ✓ |  |
| Task Performance | ✓ |  |  |
| Well-Being |  |  | ✓ |

Table 2.

*Variable Means, Standard Deviations, and Tetrachoric Correlations*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. Publication Type | .76 | .43 | -- |  |  |  |  |  |  |
| 2. Type Self-Enhancement Rating | .86 | .35 | -.49\* | -- |  |  |  |  |  |
| 3. Type of Sample | .88 | .33 | .51\* | .59\* | -- |  |  |  |  |
| 4. Length of Relationship | .41 | .49 | -- | -- | -- | -- |  |  |  |
| 5. Agency | .54 | .50 | .32\* | -.44\* | -- | .21 | -- |  |  |
| 6. Communion | .32 | .47 | -.48\* | .46\* | -- | -.26 | -.99 | -- |  |
| 7. Type Self-Enhancement Measure | .75 | .44 | .59\* | .73\* | .32\* | .62\* | .26 | -.33 | -- |
| 8. Correlation Coefficient (corrected) | .19 | xx |  |  |  |  |  |  |  |

*Note*. Publication type (0 = unpublished, 1 = published); Type of self-enhancement rating (0 = objective measure, 1 = observer report);

Type of sample (0 = not a student sample [internet/community samples], 1 = Student sample); Length of relationship (0 = acquaintance,

1 = close observer); Agency (0 = not agency, 1 = agency); Communion (0 = not communion, 1 = communion); Type of self-enhancement measure

(0 = difference score, 1 = regression residual). The correlations reported in this table are tetrachoric correlations. Variable 8 reports a pooled

within-study (Level 2) SD. N = xx for level 1 and N = xx for Level 2.

\**p* < .05.

Table 3.

*Summary of Multilevel WLS Results Predicting Narcissism’s Relationship with Self-Enhancement (k = 148; samples = 26)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Uncorrected | | Corrected | | Agency vs.  Communion | | Acquaintance vs. Close Other | | Residual vs. Difference Score | | Publication Type | | Observer vs. Objective | | Narcissism Measure | | Competing Moderators | |
|  | **Model 1** | | **Model 2** | | **Model 3** | | **Model 4** | | **Model 5** | | **Model 6** | | **Model 7** | | **Model 8** | | **Model 9** | |
| Predictor | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* |
| Intercept | .18\* | .03 | .20\* | .03 | .13\* | .04 | .23\* | .03 | .11\* | .05 | .25\* | .05 | .16\* | .05 | .25\* | .04 | .18\* | .08 |
| Agency |  |  |  |  | .14\* | .04 |  |  |  |  |  |  |  |  |  |  | .14\* | .04 |
| Communion |  |  |  |  | -.12\* | .04 |  |  |  |  |  |  |  |  |  |  | -.10\* | .04 |
| Acquaintance |  |  |  |  |  |  | -.02 | .04 |  |  |  |  |  |  |  |  | -.02 | .03 |
| Residual |  |  |  |  |  |  |  |  | .14\* | .05 |  |  |  |  |  |  | .01 | .08 |
| Publication Type |  |  |  |  |  |  |  |  |  |  | -.06 | .06 |  |  |  |  | .09 | .08 |
| Observer vs.  Objective |  |  |  |  |  |  |  |  |  |  |  |  | .07 | .06 |  |  |  |  |
| Narcissism  Measure |  |  |  |  |  |  |  |  |  |  |  |  |  |  | -.07 | .05 | -.13 | .07 |
| Pseudo-*R2* |  | |  | |  | |  |  |  |  |  |  |  |  |  |  |  |  |
| ∆*R2* |  | |  | |  | |  |  |  |  |  |  |  |  |  |  |  | xx |

*Note*. WLS = weighted least squares; *B* = unstandardized regression coefficient weighted by sample size; *SE* = standard error of regression coefficient; Publication Type = 1, Unpublished = 0; Residual = 1, Difference Score = 0; Acquaintance = 1, Close Other = 0; Narcissism Measure (1 = Narcissistic Personality Inventory; 0 = Other Narcissism Measures)

There were 148 effect sizes and 26 independent samples

\**p* < .05

Table 4.

*Summary of Multilevel WLS Results Predicting Narcissism’s Relationship with Self-Enhancement—Excluding Effect Sizes Based on Difference Scores (k = 110; Samples = 17)*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Uncorrected | | Corrected | | Agency vs.  Communion | | Publication Type | | Acquaintance vs. Close Other | | Observer vs. Objective | | Narcissism Measure | | Competing Moderators | |
|  | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 6 | | Model 7 | | Model 8 | | Model 9 | |
| Predictor | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* | *B* | *SE* |
| Intercept | .21\* | .02 | .24\* | .03 | .16\* | .05 | .29\* | .05 | .26\* | .03 | .18\* | .07 | .30\* | .04 | .19\* | .06 |
| Agency |  |  |  |  | .14\* | .04 |  |  |  |  |  |  |  |  | .14\* | .04 |
| Communion |  |  |  |  | -.12\* | .05 |  |  |  |  |  |  |  |  | -.10\* | .05 |
| Publication  Type |  |  |  |  |  |  | -.08 | .06 |  |  |  |  |  |  | .01 | .13 |
| Acquaintance |  |  |  |  |  |  |  |  | -.04 | .04 |  |  |  |  | -.03 | .03 |
| Observer vs.  Objective |  |  |  |  |  |  |  |  |  |  | .07 | .08 |  |  |  |  |
| Narcissism  Measure |  |  |  |  |  |  |  |  |  |  |  |  | -.09 | .06 | -.03 | .13 |
| Pseudo-*R2* |  | |  | |  | |  |  |  |  |  |  |  |  |  |  |
| ∆*R2* |  | |  | |  | |  |  |  |  |  |  |  |  |  | xx |

*Note*. WLS = weighted least squares; *B* = unstandardized regression coefficient weighted by sample size; *SE* = standard error of regression coefficient; Publication Type = 1, Unpublished = 0; Residual = 1, Difference Score = 0; Acquaintance = 1, Close Other = 0; Narcissism Measure (1 = Narcissistic Personality Inventory; 0 = Other Narcissism Measures).

There were 110 effect sizes and 17 independent samples

\**p* < .05

Table 5.

*Summary of Multilevel WLS Results Predicting the Narcissism/Self-Enhancement Relationship for Different Self-Enhancement Criteria*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Self-Enhancement Criteria | *k* | Samples | *B* | *SE* | *95% CI* |
| Task Performance | 17 | 6 | .14 | .07 | -.02, .30 |
| *Remote Associates Task* | 8 | 1 | -.05 | .05 | -.17, .07 |
| *Other* | 9 | 5 | .20\* | .06 | .06, .34 |
| Intelligence | 15 | 10 | .28\* | .03 | .21, .35 |
| Leadership | 11 | 4 | .34\* | .05 | .17, .50 |
| Agreeableness | 10 | 4 | -.05 | .07 | -.26, .16 |
| Extraversion | 9 | 4 | .41\* | .05 | .26, .56 |
| Attractiveness | 8 | 5 | .38\* | .08 | .16, .59 |
| Conscientiousness | 7 | 3 | .13 | .07 | -.16, .43 |
| Emotional Stability | 7 | 4 | .08 | .08 | -.27, .43 |
| Openness | 7 | 3 | .38 | .09 | -.02, .79 |
| Likeable | 6 | 3 | .32\* | .03 | .14, .51 |

*Notes*. WLS = weighted least squares; *k* = number of effect sizes included in the meta-analysis; Samples = number of independent samples included in the meta-analysis; *B =*unstandardized regression coefficient weighted by sample size; SE = standard error of the regression coefficient; *95% CI* = lower and upper bounds of the 95% confidence interval for *B*.

\**p* < .05

APPENDIX A

*Main Codes and Input Values for Narcissism and Self-Enhancement Studies in the Meta-Analysis*

| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Ames & Kammrath (2004)  Sample 1 | Published | Students | NPI | Objective | Difference | . | Interpersonal perception | Neither | 138 | .13 | .16 |
| 1 | Ames & Kammrath (2004)  Sample 2 | Published | Students | NPI | Observer | Difference | Close observer | Interpersonal perception | Neither | 134 | .05 | .06 |
| 1 | Ames & Kammrath (2004)  Sample 2 | Published | Students | NPI | Observer | Difference | Close observer | Interpersonal perception | Neither | 134 | .08 | .10 |
| 2 | Brown (2010) | Unpublished | Students | NPI | Objective | Difference | . | Interpersonal perception | Neither | 47 | .30 | .33 |
| 3 | Campbell, Goodie, & Foster (2004)  Sample 1 | Published | Students | NPI | Objective | Difference | . | Intelligence | Agency | 104 | .28 | .31 |
| 4 | Campbell, Goodie, & Foster (2004)  Sample 2 | Published | Students | NPI | Objective | Difference | . | Intelligence | Agency | 97 | .30 | .33 |
| 5 | Campbell, Goodie, & Foster (2004)  Sample 3 | Published | Students | NPI | Objective | Difference | . | Intelligence | Agency | 607 | .10 | .11 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Attractive | Agency | 82 | .01 | .01 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Close observer | Attractive | Agency | 82 | .26 | .31 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Surgency | Agency | 82 | .33 | .39 |

*(continued)*

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Surgency | Agency | 82 | .41 | .49 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Agreeable | Communion | 82 | .02 | .02 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Agreeable | Communion | 82 | .02 | .02 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Close observer | Agreeable | Communion | 82 | .08 | .10 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Intelligence | Agency | 82 | .24 | 29 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Intelligence | Agency | 82 | .21 | .25 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Close observer | Intelligence | Agency | 82 | .24 | .29 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Well-being | Neither | 82 | .23 | .27 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Close observer | Well-being | Neither | 82 | .26 | .31 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Likeable | Neither | 82 | .21 | .25 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Close observer | Likeable | Neither | 82 | .21 | .25 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Reliable | Communion | 82 | .00 | .00 |

*(continued)*

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Acquaintance | Reliable | Communion | 82 | .01 | .01 |
| 6 | Carlson, Naumann, & Vazire (2011) | Published | Students | NPI | Observer | Residual | Close observer | Reliable | Communion | 82 | .02 | .02 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Attractiveness | Agency | 201 | .33 | .41 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Attractiveness | Agency | 201 | .41 | .51 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Openness | Agency | 201 | .22 | .28 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Openness | Agency | 201 | .19 | .24 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Conscientiousness | Communion | 201 | .20 | .25 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Conscientiousness | Communion | 201 | .21 | .26 |

(*continued*)

APPENDIX A (continued)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Extraversion | Agency | 201 | .35 | .44 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Extraversion | Agency | 201 | .34 | .43 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Agreeable | Communion | 201 | .19 | .24 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Agreeable | Communion | 201 | .18 | .23 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Emotional stability | Neither | 201 | .22 | .28 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Emotional stability | Neither | 201 | .14 | .18 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Intelligence | Agency | 201 | .27 | .34 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Intelligence | Agency | 201 | .31 | .39 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Well-being | Neither | 201 | .24 | .30 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Well-being | Neither | 201 | .20 | .25 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Honest | Communion | 201 | .08 | .10 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Honest | Communion | 201 | .09 | .11 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Likeable | Neither | 201 | .24 | .30 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Likeable | Neither | 201 | .32 | .40 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Funny | Neither | 201 | .31 | .39 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Funny | Neither | 201 | .28 | .35 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Impulsive | Agency | 201 | .08 | .10 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Impulsive | Agency | 201 | .11 | .14 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Exaggerates abilities | Agency | 201 | .15 | .19 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Exaggerates abilities | Agency | 201 | .18 | .23 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Arrogant | Agency | 201 | .32 | .40 |

(*continued*)

APPENDIX A (continued)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Arrogant | Agency | 201 | .21 | .26 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Power oriented | Agency | 201 | .37 | .46 |
| 7 | Carlson, Vazire, & Oltmanns (2011)  Study 1 | Published | Students | NPI | Observer | Residual | Close observer | Power oriented | Agency | 201 | .34 | .43 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Attractiveness | Agency | 72 | .55 | .60 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Attractiveness | Agency | 72 | .52 | .57 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Openness | Agency | 72 | .31 | .34 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Openness | Agency | 72 | .30 | .33 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Openness | Agency | 72 | .21 | .23 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Openness | Agency | 72 | .35 | .38 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Conscientiousness | Communion | 72 | .08 | .09 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Conscientiousness | Communion | 72 | .04 | .04 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Conscientiousness | Communion | 72 | .03 | .03 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Conscientiousness | Communion | 72 | .08 | .09 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Extraverted | Agency | 72 | .27 | .30 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Extraverted | Agency | 72 | .16 | .18 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Extraverted | Agency | 72 | .25 | .27 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Extraverted | Agency | 72 | .32 | .35 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Agreeable | Communion | 72 | .13 | .14 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Agreeable | Communion | 72 | .04 | .04 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Agreeable | Communion | 72 | .11 | .12 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Agreeable | Communion | 72 | .11 | .12 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Emotionally stable | Neither | 72 | .06 | .07 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Emotionally stable | Neither | 72 | -.03 | -.03 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Emotionally stable | Neither | 72 | .15 | .16 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Emotionally stable | Neither | 72 | .11 | .12 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Intelligence | Agency | 72 | .29 | .32 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Intelligence | Agency | 72 | .10 | .11 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Likeable | Neither | 72 | .35 | .38 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Likeable | Neither | 72 | .28 | .31 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Funny | Neither | 72 | .14 | .15 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Funny | Neither | 72 | .14 | .15 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Exaggerates abilities | Agency | 72 | .25 | .27 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Exaggerates abilities | Agency | 72 | .34 | .37 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Arrogant | Agency | 72 | .36 | .40 |
| 8 | Carlson, Vazire, & Oltmanns (2011)  Study 2 | Published | Students | NPI | Observer | Residual | Close observer | Arrogant | Agency | 72 | .38 | .42 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-consistency | Communion | 91 | .13 | .15 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-consistency | Communion | 91 | .26 | .31 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-decision making | Communion | 91 | .13 | .15 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-decision making | Communion | 91 | .12 | .14 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-empathy | Communion | 91 | .09 | .10 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-empathy | Communion | 91 | .05 | .06 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-equality | Communion | 91 | .16 | .18 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-equality | Communion | 91 | .32 | .38 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-relative | Communion | 91 | .12 | .13 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-relative | Communion | 91 | .06 | .07 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-supportiveness | Communion | 91 | .16 | .18 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-supportiveness | Communion | 91 | .12 | .14 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-transaction | Communion | 91 | .09 | .10 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-transaction | Communion | 91 | .05 | .06 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-treatment | Communion | 91 | .09 | .10 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-treatment | Communion | 91 | .13 | .15 |
| 9 | Dattner (1999) | Unpublished | Students | NPI | Observer | Difference | Close observer | Fairness-voice | Communion | 91 | .04 | .04 |
| 9 | Dattner (1999) | Unpublished | Students | CPI | Observer | Difference | Close observer | Fairness-voice | Communion | 91 | .05 | .06 |
| 10 | Gabriel, Critelli, & Ee (1994)  Sample 1 | Published | Students | NPI | Observer | Difference | Acquaintance | Attractiveness | Agency | 62 | .29 | .31 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 10 | Gabriel, Critelli, & Ee (1994)  Sample 1 | Published | Students | NPI | Objective | Difference | . | Intelligence | Agency | 62 | .35 | .38 |
| 11 | Gabriel, Critelli, & Ee (1994)  Sample 2 | Published | Students | NPI | Observer | Difference | Acquaintance | Attractiveness | Agency | 84 | .30 | .32 |
| 11 | Gabriel, Critelli, & Ee (1994)  Sample 2 | Published | Students | NPI | Objective | Difference | . | Intelligence | Agency | 84 | .23 | .25 |
| 12 | Gebauer, Sedikides, Verplanken, & Maio (2012)  Sample 1 | Published | Internet | NPI | Objective | Residual | . | Communal traits | Communion | 145 | .13 | .15 |
| 13 | Gebauer, Sedikides, Verplanken, & Maio (2012)  Sample 2 | Published | Students | NPI | Objective | Residual | . | Communal traits | Communion | 201 | .17 | .19 |
| 13 | Gebauer, Sedikides, Verplanken, & Maio (2012)  Sample 2 | Published | Students | NPI | Objective | Residual | . | Agentic traits | Agency | 201 | .20 | .22 |
| 14 | Gosling, John, Craik, & Robins (1998) | Published | Students | NPI | Observer | Residual | Acquaintance | A variety of categories | Neither | 88 | .27 | .32 |
| 15 | Harms, Wood, & Roberts (2007) | Unpublished | Students | Selected items measuring the dark triad | Observer | Residual | Close observer | Openness | Agency | 351 | .49 | .57 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 15 | Harms, Wood, & Roberts (2007) | Unpublished | Students | Selected items measuring the dark triad | Observer | Residual | Close observer | Conscientiousness | Communion | 351 | .10 | .12 |
| 15 | Harms, Wood, & Roberts (2007) | Unpublished | Students | Selected items measuring the dark triad | Observer | Residual | Close observer | Extraversion | Agency | 351 | .43 | .49 |
| 15 | Harms, Wood, & Roberts (2007) | Unpublished | Students | Selected items used to measure the dark triad | Observer | Residual | Close observer | Agreeableness | Communion | 351 | .04 | .05 |
| 15 | Harms, Wood, & Roberts (2007) | Unpublished | Students | Selected items used to measure the dark triad | Observer | Residual | Close observer | Emotional stability | Neither | 351 | .05 | .06 |
| 15 | Harms, Wood, & Roberts (2007) | Unpublished | Students | Selected items used to measure the dark triad | Observer | Residual | Close observer | Leadership | Agency | 351 | .31 | .36 |
| 16 | John & Robins (1994)  Sample 1 | Published | Students | DSM-III-R | Observer | Residual | Acquaintance | Task performance | Agency | 102 | .40 | .43 |
| 16 | John & Robins (1994)  Sample 1 | Published | Students | CAQ | Observer | Residual | Acquaintance | Task performance | Agency | 102 | .20 | .24 |
| 17 | John & Robins (1994) Sample 2 | Published | Students | NPI | Observer | Residual | Acquaintance | Task Performance | Agency | 72 | .32 | .36 |
| 17 | John & Robins (1994)  Sample 2 | Published | Students | CPI | Observer | Residual | Acquaintance | Task performance | Agency | 72 | .23 | .26 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 18 | Novartis\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 861 | .15 | .18 |
| 18 | Novartis\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 861 | .15 | .18 |
| 18 | Novartis\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 861 | .15 | .18 |
| 19 | Paulhus (1998)  Study 1 Time 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Task performance | Agency | 124 | .13 | .15 |
| 19 | Paulhus (1998)  Study 1 Time 2 | Published | Students | NPI | Observer | Residual | Close observer | Task performance | Agency | 124 | .33 | .37 |
| 20 | Paulhus (1998)  Study 2 Time 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Task performance | Agency | 89 | .00 | .00 |
| 20 | Paulhus (1998)  Study 2 Time 2 | Published | Students | NPI | Observer | Residual | Close observer | Task performance | Agency | 89 | .30 | .34 |
| 21 | Paulhus & Williams (2002) | Published | Students | NPI | Objective | Residual | . | Intelligence | Agency | 245 | .24 | .26 |
| 21 | Paulhus & Williams (2002) | Published | Students | NPI | Objective | . | . | Intelligence | Agency | 245 | .17 | .19 |
| 22 | Pepsi\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 211 | .30 | .37 |
| 22 | Pepsi\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 211 | .30 | .37 |
| 22 | Pepsi\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 211 | .33 | .40 |
| 22 | Pepsi\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 211 | .30 | .37 |

(*continued*)

APPENDIX A (continued)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Study | Type of Publication | Sample | Narcissism Measure | Type of Self-Enhancement Measure  (Objective vs. Observer) | Type of Self-Enhancement Measure  (Residual vs. Difference Score) | Length of Relationship | Self-Enhancement Construct | Agency/  Communion/Neither | *N* | *r* | *ρ* |
| 23 | Robins & Beer (2001)  Sample 1 | Published | Students | NPI | Observer | Residual | Acquaintance | Task performance | Agency | 360 | .13 | .15 |
| 24 | Robins & Beer (2001)  Sample 2 | Published | Students | NPI | Objective | Residual | . | Academic performance | Agency | 486 | .36 | .40 |
| 25 | WAMU\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 359 | .35 | .43 |
| 25 | WAMU\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 359 | .36 | .44 |
| 25 | WAMU\* | . | Community | HDS-Bold | Observer | Residual | Close observer | Leadership | Agency | 359 | .34 | .42 |
| 26 | Ysa (2007)  Time 1 No feedback | Published | Community | NPI | Objective | Difference | . | Task performance | Agency | 102 | .01 | .01 |
| 26 | Ysa (2007)  Time 1 No feedback | Published | Community | NPI | Objective | Difference | . | Task performance | Agency | 102 | .01 | .01 |
| 26 | Ysa (2007)  Time 1 No feedback | Published | Community | NPDS | Observer | Difference | . | Task performance | Agency | 102 | .03 | .04 |
| 26 | Ysa (2007)  Time 1 No feedback | Published | Community | NPDS | Objective | Difference | . | Task performance | Agency | 102 | .07 | .09 |
| 26 | Ysa (2007)  Time 2 Feedback | Published | Community | NPI | Objective | Difference | . | Task performance | Agency | 102 | .11 | .12 |
| 26 | Ysa (2007)  Time 2 Feedback | Published | Community | NPI | Objective | Difference | . | Task performance | Agency | 102 | .05 | .05 |
| 26 | Ysa (2007)  Time 2 Feedback | Published | Community | NPDS | Observer | Difference | . | Task performance | Agency | 102 | .23 | .29 |
| 26 | Ysa (2007)  Time 2 Feedback | Published | Community | NPDS | Objective | Difference | . | Task performance | Agency | 102 | .18 | .23 |

*Note. N* = sample size; *r* = ; NPI = Narcissistic Personality Inventory; HDS-Bold = Hogan Developmental Survey; CPI = California Personality Inventory; CAQ = California Adult Q-sort; NPDS = Narcissistic Personality Disorder Scale.

\*Hogan & Hogan, 2009

1. Similar to most research in this area, we believe that Narcissism exists on a continuum. Specifically, the word narcissist is used to refer “to people with relatively high scores on attitudinal and behavioral measures of Narcissism. Although in extreme cases Narcissism is classified as a psychiatric disorder, it is also a continuous individual difference with substantial variation” [Bianchi, 2014, p. 7; see also Chaterjee & Hambrick (2007) and Miller & Campbell (2010)]. [↑](#footnote-ref-1)
2. In this case, the narcissism/self-enhancement effect sizes (*B’s*) use the same metric as correlation coefficients. [↑](#footnote-ref-2)