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THE ASSOCIATION BETWEEN NARCISSISM AND IMPLICIT SELF-ESTEEM: A TEST
OF THE FRAGILE SELF-ESTEEM HYPOTHESIS

By

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A Dissertation submitted to the
Department of Psychology
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Degree Awarded:
Summer Semester, 2007

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A mima, a Kiko
y a los que dejamos en Cuba

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ABSTRACT

The fragile self-esteem view of narcissism suggests that narcissism is ==rooted in insecurity of the self that is disguised by grandiosity and arrogance.== This conceptualization was initially developed from a psychoanalytic perspective and remains largely overlooked in empirical investigations. The current study empirically tested the fragile self-esteem hypothesis using two established measures of implicit self-esteem. It was proposed that implicit self-esteem would moderate the association between narcissism and criterion measures assessing emotional (e.g., anxiety and depression) and behavioral (e.g., aggression) functioning. Specifically, the study examined for opposing patterns of emotional and behavioral functioning associated with high and low implicit self-esteem profiles. Using a multi-method assessment battery in a large mixed-gender young adult sample, the results failed to support the study predictions and seriously question the viability of the fragile self-esteem hypothesis. Limitations that could have impacted results and avenues for future research are discussed.

INTRODUCTION

Narcissism denotes excessive self-regard, grandiosity, and exhibitionism in the absence of genuine feelings for others. Ellis (1898, as cited in Kernberg, 1998) coined the term after the Greek myth of Narcissus, who perished after falling in love with his own reflection. Narcissism is associated with a deep state of self-love that can lead to impairing consequences. With respect to the current classification and measurement of narcissism, the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders, the DSM-IV-TR (APA, 2000), describes Narcissistic Personality Disorder as tapping an arrogant, envious, grandiose, and interpersonally exploitive lifestyle. Individuals characterized by this diagnosis typically have a sense of entitlement, lack empathy and demand admiration from others (APA, 2000). In the mental health community, narcissism has received much attention since Freud first advanced a comprehensive theory in this area. Although the narcissism construct has a rich clinical history rooted in the psychoanalytic perspective (Freud, 1914/1953; Kernberg, 1975; Kohut, 1977), empirical investigations of the expression and etiology of narcissism are a relatively recent phenomenon. Even the initial inclusion of narcissism as a personality disorder in the Diagnostic and Statistical Manual-III (DSM-III; American Psychiatric Association, 1980) lacked empirical evidence. The paucity of research in this area is concerning given that narcissism is associated with treatment resistance and interpersonal difficulties that can greatly impact familial, social, and occupational functioning (Dickinson & Pincus, 2003; Rhodewalt & Morf, 1995).

Self-Esteem Subtyping of Narcissism

A popular view on the etiology of narcissism, rooted initially in psychoanalytic theory, proposes that narcissism is deep-seated in fragile self-esteem or vulnerability to shame (Broucek, 1991; Emmons, 1987; Morrison, 1989). According to this conceptualization, grandiosity masks inward feelings of inadequacy. This underlying sense of inadequacy creates a preoccupation with maintaining positive self-concepts despite a general lack of confidence. Although this hypothesis is widely accepted and has greatly influenced clinical practice (Rhodewalt & Sorrow, 2003; Rodin & Inzenberg, 1997), available empirical evidence presents equivocal findings with some studies citing an inverse association between narcissism and self-esteem (Rose 2002; Swarie, Watson, Sherbak, Greene, & Arrendondo, 1997; Watson et al., 1997; Watson, Hickman, & Morris, 1996; Soyer, Rovenpor, Kopelman, Mullins, & Watson, 2001), whereas others report a

positive association between narcissism and self-esteem (Emmons, 1984, 1987; Raskin & Terry, 1988; Raskin, Novacek & Hogan, 1991; Watson & Miller, 1997).

It can be argued that at least two measurement-related factors might contribute to these conflicting findings. First, studies reporting a link between low self-esteem and narcissism have used measures that do not really capture the construct of narcissism, as defined in the DSM-IV (APA, 2000). One such measure, the Narcissistic Personality Disorder Scale (Ashby, Lee, & Duke, 1979), has questionable content validity. Items such as, "Life is a strain for me much of the time," "I enjoy detective or mystery stories," and "I certainly feel useless at times," possibly tap subjective well-being, life satisfaction, or even depression. Therefore, it is not surprising that such measures produce associations with low self-esteem since it could be argued that both are tapping similar constructs (e.g., subjective well-being, depressive states). The current study addresses this limitation by using a DSM based assessment of narcissism, the Narcissistic Personality Inventory (NPI; Raskin & Hall, 1979), the most widely used and well-validated rating scale assessing narcissistic features.

A second criticism of the available research literature is that most investigations of the self-esteem hypothesis have relied primarily on explicit measures of self-esteem. These types of measures are face-valid and self-report instruments that tap global evaluations of the self. For example, one prominent measure of self-esteem, the Rosenberg Self-Esteem Scale (Rosenberg, 1965), asks individuals to rate as true or false the statement, "On the whole, I am satisfied with myself." Given the self-flattering attitudes common to individuals with narcissistic traits, explicit measures of self-esteem arguably lead to a distorted and/or inaccurate assessment of self-esteem because explicit self-esteem is confounded with impression management (Olson, Fazio, & Hermann, 2007). This particular concern can be remedied using implicit measures of self-esteem, as these measures arguably offer a purer or more accurate assessment of self-esteem that is less impacted by response biases.

Implicit self-esteem is rooted in the assumption that people have a basic desire to feel good about themselves (Allport, 1961). Implicit self-esteem is defined as an "automatic, overlearned, and nonconscious evaluation of the self that guides spontaneous reactions to self-relevant stimuli" (Bosson, Swann & Pennebaker, 2000, pg. 631). Theorists in this area suggest that positive beliefs about the self generalize to objects associated with the self (Bosson et al., 2000; Greenwald & Banaji, 1995; Jones, Pelham, & Mirenberg, 2002). Specifically, research

suggests that individuals value objects associated with the self more than objects not associated with the self, thus providing support for implicit self-esteem (Greenwald & Banaji, 1995; Jones et al., 2002; Koole, Dijksterhuis & Knippenberg, 2001). Frequently used assessments of implicit self-esteem are the *Implicit Association Test* (IAT; Greenwald et al., 1998) and the *Initials Preference* task (IPT, Jones et al., 2002). On the IPT, for example, participants rate their liking for the 26 letters of the English alphabet. Their liking ratings for their own initials are compared to their liking of the non-name initials. Research using these types of implicit self-esteem measures indicates that individuals tend to rate their own initials higher than the other letters of the alphabet (Baccus, Baldwin, & Packer, 2004; Bosson et al., 2000; Koole et al., 2001), even after controlling for familiarity effects (Jones et al., 2002). Further, initial preference has been associated with positive affect (Bosson et al., 2000; Schimmack & Diener 2003).

To adequately evaluate the fragile self-esteem hypothesis, researchers should include measures of implicit self-esteem in their investigations. Explicit self-esteem measures are arguably too prone to distorted responding by individuals elevated in narcissism given the grandiosity and impression management characteristic of the construct. Implicit self-esteem measures are optimal in that they are performance-based and tap automatic appraisal of task stimuli. This appraisal is less vulnerable to response biases affecting measures of explicit self-esteem. Of note, few studies have investigated the relation between narcissism and implicit self-esteem. However, there is preliminary research linking narcissism to high explicit self-esteem but low implicit self-esteem (Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Ziegler-Hill, 2006). This further supports the importance of attending to implicit self-esteem in future studies.

Beyond these measurement issues, another issue impacting the study of self-esteem and narcissism is the possibility of distinct self-esteem narcissism subtypes. Researchers have speculated about the presence of high and low self-esteem narcissism presentations; however, research is lacking. These subtypes would theoretically yield similar endorsement of narcissism symptoms (e.g., grandiose disposition), but are distinguished according to their emotional, cognitive, and social functioning (Cooper & Ronningstam, 1992; Hibbard, 1992; Wink, 1991). Narcissism embedded in low self-esteem is theoretically linked to emotional over-reactivity and associated emotional distress. Cognitively, this form of narcissism is characterized by hypervigilance to negative evaluation. Socially, these individuals engage in admiration-seeking

behaviors to cope with underlying insecurity and satisfy a grandiose sense of self-importance. Should individuals fail to meet their demands for admiration, they are prone to experience pronounced emotional distress.

Different emotional, cognitive, and social patterns of behavior have been proposed for narcissism embedded in high self-esteem (Dickinson & Pincus, 2003; Rose, 2002; Soyer et al., 2001). This form of narcissism is theoretically associated with emotional under-reactivity and is, therefore, less prone to emotional distress. Cognitively, high self-esteem narcissism is not related hypervigilance to negative evaluation as these individuals are highly confident and secure in their social standing. However, high self-esteem narcissism is theoretically associated with aggression given the lack of sensitivity to emotional displays that generally restrain such behavior. These individuals view aggressive behaviors as a means to overcome obstacles in order to obtain what is deserved.

Narcissism and Emotional Processing

Emotional processing subsumes various cognitive (e.g., attentional to threat stimuli), emotional (e.g., anxiety), behavioral (e.g., avoidance), and psychophysiological (e.g., heart rate and startle response) responses to emotional stimuli, and investigation of emotional processing has proven useful in research on many areas of psychopathology such as the study of anxiety (Kagan & Zentner, 1996; Mogg, Mathews, & Weinman, 1989; Vasey, El-Hag; & Daleiden, 1996) and conduct disorders (Williamsom, Harpur, & Hare, 1991; Lorenz & Newman, 2002a; Loney, Frick, Clements, Ellis, & Kerlin, 2003). Attentional bias measures are one of the most prominent laboratory paradigms used to assess emotional processing in prior psychopathology investigations. These are typically computerized measures of word or picture recognition that are minimally invasive to participants and relatively easy to administer and score. For example, a number of researchers have assessed attentional bias using a computerized lexical decision task measure (e.g., Loney, Frick, Cements, Ellis, & Kerlin, 2003; Lorenz & Newman, 2002a, 2002b; Williamson, Harper, & Hare, 1991). The lexical decision task presents participants with a series of letter strings that form words and nonwords and they are asked to determine whether the letter strings form a word or a nonword. Letter strings forming real words are positive, negative, or neutral. This task theoretically indexes facilitation or attentional bias for emotional material by assessing and comparing word recognition times for emotional and neutral word categories. Using these types of measures, it has been well-established that individuals high on anxiety

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exhibit an attentional bias toward negative stimuli, including threat cues (Mathews & MacLeod, 1994; Mogg & Bradley, 1988, Mogg, Bradley, & Williams, 1995).

Extending the use of emotional processing measures to the area of narcissism could be a fruitful avenue to pursue given the proposed high and low self-esteem profiles characterized by opposing patterns of emotional processing (i.e., vigilant versus non-vigilant for negative social evaluations). Consistent with the self-esteem subtyping model, narcissism accompanied by low self-esteem should be marked by an attentional bias (e.g., faster speed of responding) for negative emotional stimuli. On the other hand, narcissism characterized by high self-esteem should be marked by under-reactivity to the same negative emotional stimuli. Initial emotional processing research suggests that narcissism is associated with under-reactivity to negative emotional stimuli. For example, using physiological measures assessing intensity of reaction to emotional stimuli, Kelsey and colleagues (2001) found that individuals high in narcissism displayed minimal electrodermal reactivity and greater cardiac deceleration in anticipation of an aversive stimulus than comparison subjects (Kelsey, Ornduff, McCann, & Reiff). However, self-esteem moderation was not examined in this study.

Narcissism and Internalizing/Externalizing Symptomatology

Available research indicates equivocal associations between narcissism and levels of anxiety and depression. Many studies indicate that narcissism is inversely related to measures of anxiety and depression (Emmons, 1984; Sedikides, Rudich, Gregg, Kumashiro, & Rubult, 2004). However, others report that narcissism is positively related to the same symptomatology (Rathvon & Holmstrom, 1996; Wink, 1991). The aforementioned theoretical modeling linking high and low self-esteem narcissism presentations to opposing levels of emotional distress could account for these equivocal findings. Beyond simply addressing these equivocal findings, research examining potential self-esteem moderation of the association between narcissism and emotional distress could have significant clinical implications. Should the present study document opposing patterns of emotional functioning associated with high and low self-esteem profiles, it could impact the assessment and treatment of narcissism. For example, it may be erroneously assumed that individuals high in narcissism are unable to experience emotional distress and simply pose a risk for aggressive behavior. Documentation of a distinct low self-esteem presentation could argue for more routine assessment and treatment of emotional distress in these individuals. Further, this type of research could generally increase awareness of the

heterogeneity of narcissism presentations, and this could stimulate related research on etiology and diagnostic classification.

These clinical implications also extend to the assessment of externalizing symptomatology, as it has been proposed that high self-esteem narcissism will be associated with higher levels of aggressive behavior. Similar to the research on anxiety and depression, available research on narcissism and aggression has produced mixed findings. While many researchers have documented a positive association between narcissism and aggression (McCann & Biaggo, 1989; Papps & Carroll, 1998; Raskin, Novacek & Hogan, 1991; Rhodewalt & Morf, 1995), there are studies documenting minimal or no association (e.g., Rose, 2002; Wink, 1991). Research documenting positive associations between narcissism and aggression has argued that this association is largely a factor of an inflated view of self (e.g., Papps & Carroll, 1998; Baumeister, Smart, & Boden, 1996). For example, it has been argued that individuals displaying narcissistic feature genuinely believe they are superior to others and feel confident in manipulating seemingly inferior opponents in order to obtain what they desire, even if it involves aggression. Interestingly, this theoretical modeling is consistent with the high self-esteem expression of narcissism noted in the current theoretical modeling. This further supports the examination of self-esteem moderation as it could clarify prior equivocal findings in this area and potentially aid clinicians in identifying the individuals high in narcissism who are at a greatest risk for violence against others.

The Current Study

The current investigation examined whether implicit self-esteem moderates the association between narcissism and multiple criterion variables of interest including two performance-based measures of emotional processing, as well as anxiety, depression, and aggression symptomatology. These criterion variables were carefully selected to test for the proposed self-esteem subtypes of narcissism (i.e., characterized by high versus low implicit self-esteem). Consistent with previous research in this area (Emmons, 1987; Raskin & Terry, 1988; Rhodewalt & Morf, 1995, Rose, 2002, Wink & Donahue, 1997, Watson & Biderman, 1993; Watson et al., 1997), a mixed-gender and non-referred sample was recruited to test the study hypotheses.

As part of the assessment battery, the present study included two established measures of implicit self-esteem, the Implicit Associations Test (IAT; Jordan et al., 2003) and the *Name*

Initial Preferences task (IPT; Jones et al., 2002). Only the IAT has been consistently used in prior narcissism research. Using the IAT, previous studies have documented implicit self-esteem effects on narcissism (Jordan et al., 2003, Ziegler-Hill, 2006). However, the current study included two measures of implicit self-esteem given the following considerations. First, implicit self-esteem is a recently developed area of research and some have argued that it could be a multi-faceted construct (Banaji, 1999; Bosson et al., 2000.). Second, available implicit self-esteem measures such as the IAT and IPT have displayed small and non-significant associations in some prior research (Bosson et al., 2000). The current study favored the use of the IAT given its precedent in prior narcissism research. However, all analyses were conducted using both the IAT and IPT to provide the most rigorous and comprehensive test of the study hypotheses.

It was predicted that implicit self-esteem would moderate the association between narcissism and each of the study criterion variables. This would offer support for distinct high and low self-esteem profiles. For individuals elevated in implicit self-esteem, narcissism was expected to predict emotional under-reactivity (e.g., slowed responding to negative emotional stimuli) and high levels of aggressive behavior. For individuals low in implicit self-esteem, narcissism was expected to predict emotional over-reactivity and elevated anxiety and depression symptoms. The present study was sensitive to the potential impact of social desirability on study findings given the impression management that is characteristic of narcissism. Similarly, explicit self-esteem was assessed and treated as a potential covariate in study analyses to document the unique contribution of implicit self-esteem to the prediction of the criterion variables.

METHOD

Participants

A non-referred sample of 271 university students (55% male) participated in the current study. The participants were General Psychology students who received course credit in exchange for participation. Twelve participants were excluded from study analyses due to administrative error (e.g., malfunction of computer-based assessment program). The remaining 259 participants comprised the current study sample and were an average age of 19.42 (*SD* = 1.98). The ethnic composition of the sample was predominantly European American (71% European American; 11% African American; 11% Latino; 7% Other).

Measures

Narcissism. Narcissistic features were assessed with the *Narcissistic Personality Inventory (NPI;* Raskin & Hall, 1979; Raskin & Terry, 1988; Appendix A). The NPI is the most widely used self-report measure of narcissism (Dickinson & Pincus, 2003; Kubarych, Deary, & Austin, 2004). It is a 40-item, forced-choice self-report measure (e.g., "I like having authority over people" or "I don't mind following orders") that was originally developed and validated in non-referred settings. The original version (Raskin & Hall, 1979) was developed using the DSM-III criteria for the narcissistic personality disorder. These 40 items were summed to produce a total score, which has demonstrated strong internal consistency in prior non-referred investigations (e.g., alpha = .83; Raskin & Terry, 1988). Additionally, prior research has documented strong associations between the NPI and conceptually related assertiveness, r = .60, and explicit self-esteem, r = .35, measures (Watson et al., 1997).

Internalizing Symptomatology. Depression and anxiety symptoms were measured using the total scores from the *Beck Depression Inventory (BDI*, Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the *Beck Anxiety Inventory (BAI*, Beck, Epstein, Brown, & Steer, 1988), respectively. The BDI is a widely used and well-validated self-report measure of depression. It contains 21 items tapping the somatic (e.g., "I don't sleep as well as I used to"), cognitive (e.g., "I am worried about physical problems such as aches and pains"), and affective (e.g., "I feel sad") domains of depression. Each item is rated on a Likert-type scale from 0 (absence of behavior) to 3 (high frequency of the behavior) that reflects the individual's experiences of specific symptoms over the past week. Beck, Steer, & Garbin (1988) report high internal consistency (alpha = 0.81) and test–retest stability in non-clinical populations.

The BAI is a 21-item self-report measure of anxiety symptoms severity, such as nervousness and losing control. Participants rate each symptom on a 4-point Likert scale ranging from 0 (*not at all)* to 3 (*severely*). The BAI has demonstrated good psychometric properties with non-clinical college populations (e.g., coefficient alpha = .90, test-retest reliability = .62; Creamer, Foran, & Bell, 1995).

Aggression. Aggression was assessed with the *Aggression Questionnaire* (Buss & Perry, 1992; Appendix B). The Aggression Questionnaire is composed of 29-self reported items measuring physical aggression, verbal aggression, anger and hostility. Each item is rated on a Likert-type scale from 1 (absence of behavior) to 5 (high frequency of the behavior). Buss & Perry reported an optimal internal consistency for the total score on this scale (alpha = .89) as well as strong test-retest reliability across a nine-week interval, *r = .80*. In terms of convergent validity, scores on the Aggression Questionnaire have displayed expected association with related measures of assertiveness, *r = .43*, and competitiveness, *r = .46*, (Buss & Perry, 1992).

Explicit Self-Esteem. Explicit self-esteem was assessed with the *Rosenberg Self-esteem Scale (RSES)* (Rosenberg, 1965; see Appendix C). The RSES is a widely used self-report measure of explicit self-esteem or global evaluations of the self. It is composed of 10 items (e.g., "I feel that I have a number of good qualities") that are rated on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). The RSES has demonstrated high internal consistency (coefficient alpha = .81) in similar non-referred samples (Rosenberg, 1965).

Implicit Self-Esteem. Two measures were used to assess levels of implicit self-esteem: the Implicit Association Test (IAT; Jordan et al., 2003, see Appendix D) and the *Name Initial Preferences* task (IPT; Jones et al., 2002; see Appendix E). For the IAT, participants are asked to categorize words as quickly and accurately as possible. The task is for participants to make two distinctions: a) between pleasant and unpleasant words (e.g., friend, joy, cockroach, pain) and b) between self and not-self words (i.e., me, myself, it, that). The target words (pleasant and unpleasant) appear on the center of the screen while the category labels (self vs. not-self) appear on the upper right and left sides of the screen. Participants use two keys to indicate the category to which the target words correspond (e.g., one key of self, another for not-self). The IAT is composed of seven trials and words, although used repeatedly, are presented in a random order within each trial. Blocks 1, 2, and 5 are practice trials during which participants make single categorizations (i.e., pleasant vs. unpleasant or self vs. not-self). Blocks 3 and 6 serve as practice

trials for Blocks 4 and 7. In Block 4, participants press one key if the word on the screen belongs to the self or pleasant categories and a different key if it corresponds to the not-self or unpleasant categories. In Block 7, the categories are switched and the participant is asked to press one key if the word belongs to self or unpleasant categories and a second one if the word belongs to the not self or pleasant categories. Only data from Blocks 4 and 7 were used to calculate IAT scores. To control for the influence of practice effects on IAT scores, about half of the participants completed the task in the order just described. For the rest, the order Blocks 4 and 7, along with their associated practice trials, were switched.

IAT scores were calculated by subtracting participants' average response latencies during Block 4 from their average response times to Block 7. In general, higher IAT scores indicate higher levels of implicit self-esteem. Prior to computing the scores, all errors were excluded. Also, to control for the influence of outliers, response latencies longer than 3000 milliseconds (ms) were recoded as 3000 and response times shorter than 300 ms were recoded as 300. This procedure is consistent with previous investigations using the IAT (Bosson et al., 2000; Greenwald et al., 1998; Jordan et al., 2003). The average IAT accuracy rate for current sample was 92%. Two participants with accuracy rates lower than 65 percent were excluded from study analyses. Overall, the IAT has demonstrated adequate test-retest reliability, $r = .69$, and good validity indices, producing positive associations with explicit self-esteem and positive affect (Bosson et al., 2000).

The IPT instructs participants to quickly rate their liking for the 26 letters of the English alphabet using a Likert-type scale ranging from *dislike very much* (1) to like very much (9). The average liking for each letter is computed across all participants and subtracted from each participant's own rating of her first and last name initial. These difference scores are averaged to form the IPT score (Bosson et al., 2000). This measure of implicit self-esteem has demonstrated strong test-retest reliability across 31 to 38 days, $r = .63$, (Bosson et al., 2000, Greenwald & Farnhan, 2000). Furthermore, scores on this measure have displayed significant associations to positive affect and well-being (Bosson et al., 2000; Schimmack & Diener, 2003).

Emotional Processing. The current study used two measures of emotional processing: a computerized *lexical decision task* (Lorenz & Newman, 2002b, Appendix F) and a computerized facial recognition task (Montagne et al., 2004). The lexical decision task is a word discrimination task that assesses speed of word recognition for emotional versus neutral word stimuli. The

lexical decision task presents participants with a series of letter strings on the center of the computer screen. These letter strings form words and nonwords and remain on the screen for 100ms. The letter strings forming words include positive (e.g., kiss, charm, warmth), negative (e.g., injury, murder, perjury), and neutral (e.g., code, figment, custom) words. Before these words appear on the center of the computer screen, a fixation cross appears for 500ms. Nonwords are formed by altering two letters for each real word contained in the task. Across word categories, the frequency, pronounceability, length, number of letters, number of syllables, concreteness, and imagery of the words were balanced (Kučera & Francis, 1967; Pavio, Yuille, & Madigan, 1968). The stimuli consist of 12 positive, 12 negative, 24 neutral, and 48 nonwords grouped into four experimental blocks, each containing three positive, three negative, six neutral and 12 nonwords. Word stimuli were randomized within blocks and presented in a fixed order to all participants. The positive and negative words differ significantly form the neutral words on emotionality, and the emotional and neutral words differed significantly from each other only on valence (Rubin & Friendly, 1986). The resulting task is comprised of one practice trial and eight experimental trials.

Two scores were calculated for data analyses. A positive word facilitation index score was calculated by subtracting participants' average response time to positive words from their average response time to neutral words. A negative word facilitation index score difference score was calculated by subtracting each participant's average response time to negative words from his average response time to neutral words. These difference scores represent emotional facilitation indices that theoretically index attentional bias for emotional material by assessing average word recognition times for positive, negative, and neutral word stimuli. Response times deviating 2.5 or more standard deviations from participants' overall mean response time for the task were recoded as responses 2.5 SD from the mean. The average accuracy rate for the lexical decision task for the current sample was 91%. Four participants were excluded from study analyses for exhibiting accuracy rates lower than 65 percent.

The second emotional processing measure is a facial recognition task developed by Frigerio and colleagues (Frigerio, Burt, Montagne, Murray, & Perrett, 2002). The stimuli include facial pictures of four individuals (two males and two females) exhibiting 2 positive (i.e., happiness and surprise) and 4 negative (i.e., anger, disgust, fear, and sadness) emotions. Specifically, a computer program presents real-time animation that begins with a picture of a

neutral expression that slowly morphs to 20% of the target emotion. After the 20% morph animation ends, the participant is asked to identify the emotion depicted by pressing one of six text-labeled icons (i.e., happiness, anger, disgust, sadness, fear, surprise). Participants respond to 24 trials at this 20% condition as the 6 target emotions are presented four times each (i.e., once per each male and female face) randomly. Then, these trials are repeated but morph from a neutral expression to 30% of the target emotion. This continues in successive 10% increments until participants view all 6 emotions morphing from a neutral expression to 100% of the target emotion. Consistent with prior research (Montagne et al., 2004), the criterion measure used in the current study was accuracy scores for the positive and negative emotion trials in which the neutral expression morphs to 100% of the target emotion. Accuracy scores for each target emotion were averaged across the four presentations, and these averages were summed within positive and negative categories. Impaired accuracy in identifying full expression of emotions has been associated with emotional and behavioral dysfunction in prior research (e.g., Montagne et al., 2004; Frigerio et al., 2002).

Social Desirability. Social desirability was assessed using the Marlowe-Crowne Social Desirability Scale – 20 (M-C 20, Strahan & Gerbasi, 1972; Appendix G). The M-C 20 is a 20-item self-report measure of social desirability and defensive presentation. Individuals respond to questions such as "I'm always willing to admit it when I make a mistake" in a True/False format. This 20-item measure is a short version of the original Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960). The shorter version has displayed a strong association to the longer instrument ($r = .78$) and strong psychometric properties in similar non-referred samples (e.g., Strahan & Gerbasi, 1972; Reynolds, 1982; Fraboni & Cooper, 1989).

Procedures

Participants completed an IRB-approved research protocol in a university computer lab in small groups of 2 to 12 individuals. All measures were administered using a web-based format. Studies examining the equivalence of paper and web-based presentation have found that the different methodologies are associated with very similar psychometric properties (e.g., Davis, 1999; Finegan & Allen, 1994). Recruitment occurred through a departmental website that listed available experiments and allowed potential participants to choose experiments of interest. After reading about the study, interested students were able to sign up online for one of the available sessions of the current study. Upon arriving to the computer lab, all participants were asked to

read a consent form (see Appendix H) and indicate whether or not they would like to participate in the investigation. Those agreeing to participate then completed the emotional processing tasks (lexical decision task, IAT, and facial recognition task) followed by the web-based rating scale measures. Participants received course credit for their participation.

Data Analytic Procedure

Study analyses began with the examination of descriptive statistics for the main study variables. Next, zero-order correlations among the study variables were inspected to provide a preliminary test of the study hypotheses (e.g., examined the associations between narcissism and implicit self-esteem, and emotional processing) and to inform variables that should be included in the subsequent regression analyses as covariates. Potential covariates included social desirability, explicit self-esteem, and select demographic variables (age, sex. and ethnicity). A variable was treated as a covariate if it was significantly related to both predictor and criterion variables included in a given analysis.

Hierarchical regression analyses provided the primary test of study hypotheses by examining whether implicit self-esteem moderated the association between narcissism and each of the criterion variables (i.e., facilitation to negative words, facilitation to positive words, accuracy in identifying positive emotions, accuracy in identifying negative emotions, anxiety, depression, and aggression). Each criterion variable was regressed separately onto potential covariates (step 1), followed by narcissism and implicit self-esteem (step 2), and an implicit self-esteem*narcissism interaction term (step 3). All variables were centered prior to forming the product interaction terms. At each step, the change in the multiple correlation coefficient was assessed using the F∆ statistic, and the individual regression parameters were investigated for each predictor variable. Given that the current study included two measures of implicit self-esteem, the study predictions were tested by first conducting the hierarchical regression analyses using IAT scores and then run again using the IPT scores. Regarding the order of regression results, the analyses involving emotional processing indices are presented first, followed by analyses focused on the prediction of internalizing symptoms and aggression.

RESULTS

Preliminary Analyses

Table 1 presents descriptive statistics for the main study variables. The overall sample was characterized by wide variability on each of the study measures. There was evidence of positive skew to several variables, including anxiety and depression, as expected for a non-referred sample. It is also interesting to note that the average response to negative and positive word facilitation scores was positive. This suggests that emotionality generally facilitated responding as expected.

The zero-order correlation matrix containing the study variables is provided in Table 2. Regarding study predictions, it is first interesting to note that the two measures of implicit self-esteem (i.e., IAT and IPT) were not related, $r = -.06$, $p > .05$. Further, the IAT and IPT displayed negligible and non-significant associations to narcissism and the majority of study variables. The one exception is that IPT scores were significantly and positively associated with depression, $r = .19$, $p < .01$. In contrast, explicit self-esteem was significantly associated with the most of study criterion measures. For example, it was positively associated with narcissism, $r = .25$, $p < .001$, and accuracy to negative facial expressions, $r = .15$, $p < .05$, and inversely associated with anxiety, $r = -.42$, $p < .01$, depression, $r = -.67$, $p < .001$, and aggression, $r = -.31$, $p < .01$. Narcissism displayed significant associations with depression, $r = -.17$, $p < .01$, and aggression, $r = .19$, $p < .01$.

In terms of general measurement integrity, the main study variables displayed a number of expected associations. For example, anxiety and depression exhibited an expected strong association, $r = .55$, $p < .001$. The measure of social desirability displayed inverse associations with anxiety, $r = -.30$, $p < .001$, depression, $r = -.33$, $p < .001$, and aggression, $r = -.57$, $p < .001$, and sex (coded 0 = male, 1 = female) was positively associated with anxiety, $r = .25$, $p < .001$, and depression, $r = .26$, $p < .001$. In the current sample, females had higher levels of both anxiety and depression. These and other similar findings generally support the integrity of the measurement battery.

Main Regression Analyses

Emotional Processing. The results of hierarchical regression analyses predicting negative and positive word facilitation scores from narcissism and implicit self-esteem are presented in tables 3 through 6. As indicated in the data analytic procedures section, the regression analyses

were first conducted using IAT scores as the measure of implicit self-esteem (tables 3 and 4) and were then run again using the IPT scores as the measure of implicit self-esteem (tables 5 and 6). Across all of these analyses, the same pattern and magnitude of effects were documented for both negative and positive word facilitation, as well as for both of the implicit self-esteem measures. Contrary to prediction, all of the study variables failed to contribute significantly to the prediction of the lexical decision scores in the regression analyses. Given that there were no covariates introduced, as informed by the bivariate correlation matrix, narcissism and implicit self-esteem were entered during step 1 of these analyses. The introduction of step 1 variables did not produce a significant gain in the multiple correlation coefficient, and the introduction of the narcissism*implicit self-esteem interaction in step 2 also did not contribute significantly to the prediction of the criterion measures for either of the implicit self-esteem measures. For example, the analyses predicting negative word facilitation scores from narcissism and IAT scores (see table 3) produced a non-significant ΔR^2 of .00 at step 1 with non-significant regression parameters for the narcissism, $pr = -.04$, $p > .05$, and IAT variables, $pr = .00$, $p > .05$. Similarly, the introduction of the narcissism*IAT interaction term in step 2 of the regression analyses did not contribute significantly to the prediction of negative word facilitation scores. No other regression parameters reached statistical significance in this step or other steps of the analysis.

Regression analyses predicting accuracy of identifying negative and positive facial expressions produced a different pattern of results across emotional categories. For accuracy of identifying negative facial expressions (see tables 7 and 9), the same pattern and magnitude of effects were documented for both of the implicit self-esteem measures. Explicit self-esteem was entered as a covariate in step 1 of these analyses and contributed significantly to the prediction of accuracy scores for negative emotions. However, the introduction of narcissism and implicit self-esteem at step 2 and the introduction of the narcissism*implicit self-esteem interaction in step 3 did not contribute significantly to the prediction of this emotional processing variable. For example, the analyses predicting accuracy of identifying negative facial expressions from narcissism and IAT scores (see table 5) produced a significant ΔR^2 of .02 at step 1 with a regression parameter of $pr = .15$, $p < .05$, for the explicit self-esteem variable. Step two and step three did not contribute significantly to the prediction of criterion variable. No other regression parameter emerged as significant subsequent steps of the analysis.

Regression analyses predicting accuracy of identifying positive facial expressions produced different findings for the two measures of implicit self-esteem (see tables 6 and 10). Analyses using the IPT measure of implicit self-esteem yielded null findings at every step of the regression analysis (see table 10). However, analyses using the IAT measure of implicit self-esteem did yield statistically significant results (see table 8). For the IAT analyses, the introduction of the step 1 predictor variables did not contribute significantly to the prediction of accuracy scores. However, the introduction of the narcissism*implicit self-esteem interaction in step 2 contributed significantly to the prediction of this criterion measure, but only for IAT analyses, $\Delta R^2 = .02$, $p < .05$, $pr = .14$. To explore this interaction, regression lines were plotted using unstandardized beta coefficients for the constant, the main effects, and the interaction term, at values two standard deviations above and below the mean of IAT and narcissism scores (Aiken & West 1991). As illustrated in Figure 1, individuals with high narcissism/high implicit self-esteem had the highest scores in identifying positive emotions. Individuals high in narcissism and low in implicit self-esteem had low accuracy scores to the same emotional stimuli.

Internalizing Symptomatology. The results of hierarchical regression analyses predicting internalizing symptoms from narcissism and implicit self-esteem are presented in tables 11 through 14. For anxiety (see tables 11 and 12), the same pattern and magnitude of effects were documented for both of the implicit self-esteem measures. In addition to controlling for explicit self-esteem, preliminary inspection of the bivariate analyses supported the inclusion of depression and aggression as covariates in step 1 of these analyses. Across these analyses, depression and narcissism uniquely predicted anxiety as main effects in steps 1 and 2, respectively. However, contrary to prediction, the introduction of the narcissism*implicit self-esteem interaction in step 3 did not contribute significantly to the prediction of anxiety for either of the implicit self-esteem measures. For example, analyses using the IAT as a measure of implicit self-esteem (see table 11) produced a significant ΔR^2 of .31 at step 1 with a regression parameter of $pr = .39$ $p < .001$, for the depression variable. The introduction of step 2 variables produced a significant ΔR^2 of .03, $p < .01$, with a regression parameter of $pr = .17$ $p < .01$ for the narcissism variable. No other regression parameters reached statistical significance in this step or other steps of the analysis.

For depression scores, few differences in the pattern and magnitude of effects were documented across the implicit self-esteem measures (see tables 13 and 14). In addition to controlling for explicit self-esteem, preliminary inspection of the bivariate analyses supported the inclusion of aggression as a covariate in step 1 of these analyses. Across these analyses, explicit self-esteem uniquely predicted depression as main effects in step 1. IPT scores (see table 14) uniquely predicted depression in step 2 of the analyses but not the IAT scores (see table 13). Contrary to prediction, the introduction of the narcissism*implicit self-esteem interaction in step 3 did not contribute significantly to the prediction of depression for either of the implicit self-esteem measures. For example, analyses using the IAT as a measure of implicit self-esteem (see table 13) produced a significant ΔR^2 of .45 at step 1 with a regression parameter of $pr = -.67$ $p < .001$, for the explicit self-esteem variable. The introduction of steps 2 and 3 variables did not contribute significantly to the prediction of depression.

Aggression. The results of hierarchical regression analyses predicting aggression from narcissism and implicit self-esteem are presented in tables 15 and 16. For aggression, the same pattern and magnitude of effects were documented for both of the implicit self-esteem measures. In addition to controlling for explicit self-esteem, preliminary inspection of the bivariate analyses supported the inclusion of depression as a covariate in step 1 of these analyses. Across these analyses, aggression uniquely predicted aggression as a main effect in steps 2. However, contrary to prediction, the introduction of the narcissism*implicit self-esteem interaction in step 3 did not contribute significantly to the prediction of aggression for either of the implicit self-esteem measures. For example, analyses using the IAT as a measure of implicit self-esteem (see table 15), step 1 variables did not contribute significantly to the prediction of the criterion. The introduction of step 2 variables, however, produced a significant ΔR^2 of .03, $p < .01$, with a regression parameter of $pr = .25$, $p < .001$, for the narcissism variable. No other regression parameters reached statistical significance in this or subsequent steps of the analysis.

DISCUSSION

The current study proposed that implicit self-esteem would moderate the association between narcissism and each of the study criterion variables. This prediction was based in theoretical speculation regarding fragile self-esteem and the hypothesized low and high self-esteem subtypes derived from the overall narcissism literature. Contrary to expectations, the results failed to support any of the predicted implicit self-esteem moderation effects. In fact, the only documented interaction between narcissism and implicit self-esteem was in predicting accuracy in identifying positive facial expressions. The null findings are particularly striking given the use of two implicit self-esteem measures and the inclusion of criterion variables with strong empirical and theoretical associations to narcissism (Emmons, 1984; Sedikides et al., 2004; Papps & Carroll, 1998; Raskin et al., 1991).

Before proceeding, it seems important to first address the integrity of the implicit self-esteem measures. After all, it could be argued that the lack of findings simply resulted from poor measurement of self-esteem. The current study focused on implicit self-esteem given the concern that measures of explicit self-esteem are confounded with impression management. Incidentally, this concern was supported in the bivariate associations as explicit self-esteem, not implicit self-esteem, was positively associated with social desirability. Nonetheless, it cannot be ignored that the construct of implicit self-esteem is relatively new and has valid criticisms and potential limitations (Bosson et al., 2000; Schimmank & Diener, 2003). Given the early stage of the implicit self-esteem literature, the current study used two established measures. These measures displayed a negligible association. However, this is consistent with prior research suggesting that implicit self-esteem may be a multifaceted construct with distinct and potentially important subcomponents (Bosson et al., 2000). The current results questioned the validity of the IPT measure as IPT scores displayed a positive association to depression. This is inconsistent with prior research and theoretical conceptualization linking the same measure of implicit self-esteem to positive affect (Bosson et al., 2000). The current study favored the IAT given that it has actually demonstrated prior associations to narcissism (Jordan et al., 2003; Ziegler-Hill, 2006). Nevertheless, neither the IAT nor the IPT emerged as a moderator of narcissism effects in the current regression analyses. Although future studies may wish to consider other measures of implicit self-esteem, such as the Implicit Self-Evaluation Survey (Pelham & Hetts, 1999), it

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seems unlikely that inclusion of yet another implicit self-esteem measure would significantly impact the study findings.

Although the results of the implicit-self esteem analyses seriously challenge self-esteem subtyping of narcissism, it could perhaps be argued that the current study did not adequately test the predictions by relying exclusively on implicit measures. Perhaps the fragile self-esteem hypothesis is correct, but it can only be documented at the explicit level. To address this potential limitation, post hoc analyses were conducted in which all criterion variables were regressed onto a narcissism*explicit self-esteem moderator following the same hierarchical regression procedures used in the main study analyses. Across all of these analyses, the explicit self-esteem interaction term failed to contribute significantly to the prediction of any of the criterion measures. Overall, the obtained regression results failed to support self-esteem subtyping at the implicit and explicit levels and again seriously challenge the validity of the fragile self-esteem hypothesis.

Another potential explanation for the null findings is the potential of non-linear associations between narcissism and the study criterion measures. Although visual inspection of residual plots against narcissism scores provided no evidence of a violation of the linearity assumption for all of the criterion measures, this particular concern was further examined in post-hoc analyses. Similar to the original regression analyses, potential covariates were introduced at step 1, followed by the narcissism and implicit self-esteem main effects at step 2. At steps 3 and 4, a quadratic narcissism term was entered followed by a quadratic narcissism by implicit self-esteem interaction variable, respectively. For all of the criterion measures, there were no significant effects at steps 3 and 4 of the analyses.

Despite lack of evidence for a narcissism by self-esteem interaction across the main study analyses and further post hoc analysis, it is important to consider what narcissism was associated with at the main effect level. Consistent with prior investigations (Jordan et al., 2003; Zeigler-Hill, 2006), the current study found support linking narcissism to high explicit self-esteem. This is somewhat intuitive given the impression management and grandiosity associated with narcissistic features. However, in the context of the null findings for implicit self-esteem, it further challenges the view that narcissism is related to an underlying insecurity of self-concept. Beyond self-esteem, narcissism also displayed unique and positive associations to both anxiety and aggression in the main regression analyses. This is consistent with some prior research and

suggests that narcissism is broadly associated with emotional distress and aggressive behavior. Regarding clinical implications, this suggests that individuals displaying narcissism should not be viewed as at risk for either internalizing or externalizing symptomatology. Rather, these individuals could be characterized by an inflated sense of self that leaves them unstable emotionally and behaviorally. This conceptualization is somewhat consistent with well established associations between youth aggression, inflated self-concept, and anxiety (see Washburn 2004; David & Kistner, 2000, Hymel, Rubin, Rowden, & LeMare, 1990). Overall, the current results suggest that attempts to discern distinct narcissism profiles characterized by unique emotional and behavioral impairments could cause clinicians to underestimate the potential impairments experienced by their clients.

The current study was characterized by both methodological strengths as well as some limitations that should be addressed in future investigations. A strength of the study was the use of an extensive multi-method assessment battery that provided a rigorous test of the study predictions. There was strong support for the overall integrity of measures included in this assessment battery. For example, anxiety and depression were moderately and positively related, and females were characterized by higher levels of these symptoms. These internalizing indices were also inversely related to explicit self-esteem and social desirability. In addition, average response times for the lexical decision task indicated that the sample displayed a characteristic bias toward emotional word stimuli. This is just an example of the support for the integrity of measures obtained across the preliminary descriptive and bivariate analyses. Nevertheless, there are some limitations to the study methodology that could have impacted the findings. First, perhaps implicit self-esteem does moderate the association between narcissism and the criterion variable, but the effects are small and went undetectable. To address this potential concern, it is important to indicate that the sample size used in the current investigation was large and had a power level of .85 to detect medium size main and interaction effects across all regression analyses (Cohen & Cohen, 1983). It should also be mentioned that the pattern of results for the main study hypotheses did not approach statistical significance and the number of analyses facilitated the odds of at least some spurious findings (Type 1 error).

Second, the current study relied exclusively on self-report measures for main study variables (e.g., narcissism, anxiety, depression, etc.). Despite the strong psychometric properties of self-report measures included in the current assessment battery (e.g., NPI and BDI), future

studies should consider alternative ways to measure important constructs. This could have influenced the results given that individuals high in narcissism may under-report emotional and behavioral difficulties. Semi-structured interviews (e.g., The Structured Clinical Interview for DSM-IV Personality Disorders; Spitzer, Williams, Gibbons, & First, 1990) could assist in this regard by allowing clinician input in the endorsement of diagnostic symptomatology such as narcissism, anxiety, depression, and antisocial features.

Third, the current study assessed emotional processing and trait levels of emotional distress. However, it is possible that the proposed emotional associations are more state-dependent and limited to response to direct provocation. Future research may wish to consider examining whether self-esteem moderates the effect of narcissism on laboratory-provoked indices of emotional distress or aggression. For example, studies could assess for performance-based aggression effects using a noise-blast technique in which participants can potentially aggress against another "participant" while engaging in a competitive task (Bartholow, Bushman, & Sestir; 2006). Regarding measures of emotional distress, future research could also use mood-induction techniques in an attempt to provoke anxiety and depression symptoms (e.g., mood-suggestive music and autobiographical recall of negative events; Martin, 1990; Singer & Dobson, 2007).

Beyond the aforementioned concerns, there were some limitations pertaining to sample characteristics. For example, perhaps the proposed self-esteem moderation is only present in clinical samples characterized by greater elevations in narcissism and the other emotional and behavioral indices. In response to this limitation, it seems unlikely that this sample characteristic heavily influenced the results given the following considerations. First, narcissism, like other personality disorders, has been described as a variant or extreme of normally distributed personality traits (Clark, 1999; Horrowitz, 1995). Second, prior research has established wide variability of narcissistic features in non-referred samples, and has documented expected bivariate effects in these samples (Emmons, 1987; Raskin & Terry, 1988; Rhodewalt & Morf, 1995, Rose, 2002, Wink & Donahue, 1997, Watson & Biderman, 1993; Watson et al., 1997). Third, available measures of narcissism, like the one included in the current study, were developed and validated in non-referred samples and have demonstrated similar psychometric properties (e.g., factor structure and internal consistency) across non-referred and referred settings (Watson et al., 1992). Nevertheless, to further explore the possibility that effects were

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attenuated by an abundance of low scores on the measure, post-hoc regression analyses were conducted to test whether differences would emerge when focusing exclusively on a subset of participants with pronounced elevations on the narcissism measure. Specifically, the study analyses were re-run on a subset of 93 participants who crossed an established cut-score for the NPI measure (i.e., NPI total score > 20 for males, > 19 for females; Morf, Weir, & Davidov, 2000; Rodewhalt & Morf, 1998, Emmons, 1987). Similar to the other post hoc analyses, there were no substantive differences for any of these analyses. However, despite current null findings, future studies could still consider evaluating self-esteem narcissism profiles in clinical samples.

Finally, the current study contained a relatively equal number of males and females with no consideration that sex could have moderated the effects. There were no apriori sex difference hypotheses given that few studies report sex differences in the levels of narcissism (Rathvon & Holmstrom, 1996; Sawrie, et al., 1997) and moderation effects have not been documented for the types of variables included in the current study. Specific to the current study, sex was treated exclusively as a potential covariate and did not operate as a mediator of any of the documented findings. Nonetheless, post hoc analyses were conducted in which all analyses were run again separately for males and females. There were no substantive differences in the findings for males and females suggesting a lack of sex moderation.

Table 1

Descriptive Statistics for Main Study Variables

	M	*SD*	Range
Age	19.42	1.98	17 – 43
Narcissism	17.95	6.78	3 – 36
Explicit Self-Esteem	40.74	7.62	12 – 50
Implicit Association Test	255	180	-353 – 874
Initials Preference Task	1.66	1.56	-4.47 – 4.37
Anxiety	10.97	9.22	0 – 44
Depression	5.61	5.35	0 – 24
Aggression	77.72	18.15	31 – 141
Social Desirability	9.91	3.66	1 – 20
Facilitation to negative words	24.77	43.96	-76 – 182
Facilitation to positive words	31.73	43.96	-106 – 160
Accuracy to positive facial expressions	160.56	27.23	0 – 200
Accuracy to negative facial expressions	266.96	67.98	25 – 400

Note. Narcissism = narcissism measured using the Narcissistic Personality Inventory; Explicit

Self-Esteem = explicit self-esteem measured using the Rosenberg Self Esteem Scale; Implicit

Association Test = measure of implicit self-esteem and scores represented in milliseconds using

the Implicit Associations Test; Initial Preference Task = measure of implicit self-esteem using

(*Continued*)

Table 1 (Cont'd)

the Initial Preference Task; Anxiety = anxiety symptoms measured using the Beck Anxiety

Inventory; Depression = depression symptoms measured using the Beck Depression Inventory;

Aggression = aggression symptoms measured using the Buss Aggression Questionnaire; Social

Desirability = social desirability effects measured using the Marlow-Crowne Social Desirability

Scale; Facilitation to negative words = facilitation index for negative words on the lexical

decision task; Facilitation to positive words = facilitation index for positive words on the lexical

decision task; Accuracy scores refer to success in identifying positive and negative emotions on a

computerized facial expressions recognition task.

Table 2

Bivariate Correlations Among Demographic and Main Study Variables

	1	2	3	4	5	6	7	8	9	10
1. Age	1									
2. Sex	-.16*	1								
3. Ethnicity	-.04	.03	1							
4. Narcissism	-.09	-.04	-.08	1						
5. Explicit Self-Esteem	.03	-.06	-.11	.25***	1					
6. IAT	-.05	.09	-.05	.11	.10	1				
7. IPT	.01	.09	-.12	.02	-.05	-.06	1			
8. Anxiety	-.08	.25***	.12	.03	-.42**	.06	.09	1		
9. Depression	-.07	.26***	.02	-.17**	-.67***	-.03	.19**	.55***	1	
10. Aggression	-.08	-.12	.02	.19**	-.31**	-.09	.01	.29***	.31**	1

(*Continued*)

Table 2 (Cont'd)
Bivariate Correlations Among Demographic and Main Study Variables

	1	2	3	4	5	6	7	8	9	10
11. Social Desirability	.13*	.02	-.03	-.04	.30**	.03	.07	-.30***	-.33***	-.57***
12. Negative Word Facilitation	.01	-.06	.00	-.03	-.05	-.01	-.09	-.08	.06	-.06
13. Positive Word Facilitation	-.07	.11	.01	.02	-.10	-.00	.05	.07	.15*	.04
14. Accuracy for Negative Facial Expressions	.06	.30***	.01	.04	.15*	.00	-.04	-.01	.05	-.09
15. Accuracy for Positive Facial Expressions	.00	.24***	-.03	.03	.11	.02	.01	.03	.02	-.15*

(*Continued*)

Table 2 (Cont'd)
Bivariate Correlations Among Demographic and Main Study Variables

	11	12	13	14	15
11. Social Desirability	1				
12. Negative Word Facilitation	.10	1			
13. Positive Word Facilitation	.02	.37***	1		
14. Accuracy for Negative Facial Expressions	.10	.08	.04	1	
15. Accuracy for Positive Facial Expressions	.07	.02	.00	.31***	1

Note. Gender coded as 0 = male 1 = female; Narcissism = total score on the Narcissistic Personality Inventory; Explicit Self-Esteem = total score on the Rosenberg Self Esteem Scale; IAT = total score on the Implicit Associations Test measure of implicit self-esteem; IPT = total score on the Initials Preference Task measure of implicit self-esteem; Anxiety = total score on the Beck Anxiety Inventory; Depression = total score on the Beck Depression Inventory; Aggression = total score on the Buss Aggression Questionnaire; Social Desirability = total score on the Marlow-Crowne Social Desirability Scale; Negative Word Facilitation = facilitation index for negative words on the lexical decision task; Positive Word Facilitation = facilitation index for positive words on the lexical decision

(Continued)

Table 2 (Cont'd)

task; Accuracy scores refer to success in identifying positive and negative emotions on a computerized facial expressions recognition task.

* p <.05, ** p < .01, *** p < .001

Table 3

Regression Analyses Predicting Negative Word Facilitation Scores from IAT Scores and Narcissism

	Negative Word Facilitation		
	b	*pr*	ΔR^2
Step 1			.00
Narcissism	-.26	-.04	
IAT	.00	.00	
Step 2			.00
Narcissism*IAT	.00	-.04	

Note. Facilitation to Negative Words = Attentional bias score to negative words on lexical decision task; Narcissism = total score on the Narcissistic Personality Inventory; IAT = total score on the Implicit Association Test; *b* = unstandardized beta coefficient, p*r* = semi-partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

Table 4

Regression Analyses Predicting Positive Word Facilitation Scores from IAT Scores and Narcissism

| | Positive Word Facilitation | | |
	b	pr	ΔR^2
Step 1			.00
Narcissism	.06	.01	
IAT	.00	.01	
Step 2			.01
Narcissism*IAT	.00	-.04	

Note. Positive Word Facilitation = Attentional bias score to positive words on lexical decision task; Narcissism = total score on the Narcissistic Personality Inventory; IAT = total score on the Implicit Association Test; b = unstandardized beta coefficient, pr = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

Table 5

Regression Analyses Predicting Negative Word Facilitation Scores from IPT Scores and Narcissism

	Negative Word Facilitation		
	b	pr	ΔR^2
Step 1			.01
Narcissism	-.20	-.03	
IPT	-2.46	-.08	
Step 2			.01
Narcissism*IPT	-.36	-.08	

Note. Negative Word Facilitation = Attentional bias score to negative words on lexical decision task; Narcissism = total score on the Narcissistic Personality Inventory; IPT = total score on the Initials Preference Task; b = unstandardized beta coefficient, pr = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

Table 6

Regression Analyses Predicting Positive Word Facilitation Scores from IPT Scores and Narcissism

	Positive Word Facilitation		
	b	*pr*	ΔR^2
Step 1			.00
Narcissism	.11	.02	
IPT	1.32	.05	
Step 2			.00
Narcissism*IPT	-.31	-.07	

Note. Positive Word Facilitation = Attentional bias score to positive words on lexical decision task; Narcissism = total score on the Narcissistic Personality Inventory; IPT = total score on the Initials Preference Task; *b* = unstandardized beta coefficient, p*r* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

Table 7

Regression Analyses Predicting Accuracy for Negative Facial Expressions from IAT Scores and Narcissism

	Accuracy Score for Negative Facial Expressions		
	b	*pr*	ΔR^2
Step 1			.02*
Explicit Self-Esteem	1.29	.15*	
Step 2			.01
Narcissism	-.81	-.08	
IAT	.00	-.01	
Step 3			.00
Narcissism*IAT	.00	.06	

Note. Accuracy Score for Negative Facial Expressions = average accuracy in identifying negative facial expressions; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Narcissism = total score on the Narcissistic Personality Inventory; IAT = total score on the Implicit Association Test; *b* = unstandardized beta coefficient, *pr* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

* p < .05.

Table 8

Regression Analyses Predicting Accuracy for Positive Facial Expressions from IAT Scores and Narcissism

	Accuracy Score for Positive Facial Expressions		
	b	pr	ΔR^2
Step 1			.00
Narcissism	.16	.04	
IAT	.00	.02	
Step 2			.02*
Narcissism*IAT	.00	.14*	

Note. Accuracy Score for Positive Facial Expressions = average accuracy in identifying positive facial expressions; Narcissism = total score on the Narcissistic Personality Inventory; IAT = total score on the Implicit Association Test; b = unstandardized beta coefficient, pr = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

* $p < .05$.

Table 9

Regression Analyses Predicting Accuracy for Negative Facial Expressions from IPT Scores and Narcissism

	Accuracy Score for Negative Facial Expressions		
	b	*pr*	ΔR^2
Step 1			.02*
Explicit Self-Esteem	1.29	.15*	
Step 2			.01
Narcissism	-.80	-.08	
IPT	-1.1	-.03	
Step 3			.00
Narcissism*IPT	.31	.05	

Note. Accuracy Score for Negative Facial Expressions = average accuracy in identifying negative facial expressions; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Narcissism = total score on the Narcissistic Personality Inventory; IPT = total score on the Initials Preference Task; *b* = unstandardized beta coefficient, *pr* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

* p < .05.

Table 10

Regression Analyses Predicting Accuracy For Positive Facial Expressions from IPT Scores and Narcissism

	Accuracy Score for Positive Facial Expressions		
	b	*pr*	ΔR^2
Step 1			.00
Narcissism	.12	.03	
IPT	.24	.01	
Step 2			.00
Narcissism*IPT	-.11	-.04	

Note. Accuracy Score for Positive Facial Expressions = average accuracy in identifying positive facial expressions; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Narcissism = total score on the Narcissistic Personality Inventory; IPT = total score on the Initials Preference Task; *b* = unstandardized beta coefficient, *pr* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

Table 11

Regression Analyses Predicting Anxiety from IAT Scores and Narcissism

	Anxiety		
	b	pr	ΔR^2
Step 1			.31***
Explicit Self-Esteem	-.13	-.09	
Depression	.83	.39***	
Aggression	-.02	-.01	
Step 2			.03**
Narcissism	.20	.17**	
IAT	-.00	.08	
Step 3			.00
Narcissism*IAT	.00	.07	

Note. Anxiety = total score on the Beck Anxiety Inventory; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Depression = total score on the Beck Depression Inventory; Aggression = total score on the Buss Aggression Questionnaire; Narcissism = total score on the Narcissistic Personality Inventory; IAT = total score on the Implicit Associations Test; b = unstandardized beta coefficient, pr = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

** p < .01, *** p < .001

Table 12

Regression Analyses Predicting Anxiety from IPT Scores and Narcissism

	Anxiety		
	b	*pr*	ΔR^2
Step 1			.31***
Explicit Self-Esteem	-.13	-.09	
Depression	.83	.39***	
Aggression	-.02	-.01	
Step 2			.02*
Narcissism	.22	.18**	
IPT	-.09	-.02	
Step 3			.004
Narcissism*IPT	-.06	-.08	

Note. Anxiety = total score on the Beck Anxiety Inventory; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Depression = total score on the Beck Depression Inventory; Aggression = total score on the Buss Aggression Questionnaire; Narcissism = total score on the Narcissistic Personality Inventory; IPT = total score on the Initials Preference Task; *b* = unstandardized beta coefficient, p*r* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

* p <.05, ** p < .01, *** p < .001

Table 13

Regression Analyses Predicting Depression from IAT Scores and Narcissism

	Depression		
	b	*pr*	ΔR^2
Step 1			.45***
Explicit Self-Esteem	-.47	-.67***	
Aggression	.06	.05	
Step 2			.002
Narcissism	-.01	-.02	
IAT	.00	.05	
Step 3			.004
Narcissism*IAT	.00	.09	

Note. Depression = total score on the Beck Depression Inventory; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Aggression = total score on the Buss Aggression Questionnaire; Narcissism = total score on the Narcissistic Personality Inventory; IAT = total score on the Implicit Associations Test; *b* = unstandardized beta coefficient, p*r* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

*** p < .001

Table 14

Regression Analyses Predicting Depression from IPT Scores and Narcissism

	Depression		
	b	*pr*	ΔR^2
Step 1			.45***
Explicit Self-Esteem	-.47	-.67***	
Aggression	.06	.05	
Step 2			.02**
Narcissism	-.01	-.02	
IPT	.53	.21**	
Step 3			.01
Narcissism*IPT	.04	.11	

Note. Depression = total score on the Beck Depression Inventory; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Aggression = total score on the Buss Aggression Questionnaire; Narcissism = total score on the Narcissistic Personality Inventory; IPT = total score on the Initials Preference Task; *b* = unstandardized beta coefficient, p*r* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

** p < .01, *** p < .001

Table 15

Regression Analyses Predicting Aggression from IAT Scores and Narcissism

	Aggression		
	b	*pr*	ΔR^2
Step 1			.00
Explicit Self-Esteem	.02	.03	
Depression	.04	.05	
Step 2			.07***
Narcissism	.12	.25***	
IAT	.00	-.10	
Step 3			.01
Narcissism*IAT	.00	-.08	

Note. Aggression = total score on the Buss Aggression Questionnaire; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Depression = total score on the Beck Depression Inventory; Narcissism = total score on the Narcissistic Personality Inventory; IAT = total score on the Implicit Association Test; *b* = unstandardized beta coefficient, *pr* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.

*** p < .001

Table 16

Regression Analyses Predicting Aggression from IPT Scores and Narcissism

	Aggression		
	b	*pr*	ΔR^2
Step 1			.00
Explicit Self-Esteem	.02	.03	
Depression	.04	.05	
Step 2			.07***
Narcissism	.12	.25***	
IPT	-.01	.00	
Step 3			.01
Narcissism*IPT	.00	-.01	

Note. Aggression = total score on the Buss Aggression Questionnaire; Explicit Self-Esteem = total score on the Rosenberg Self-Esteem Scale; Depression = total score on the Beck Depression Inventory; Narcissism = total score on the Narcissistic Personality Inventory; IPT = total score on the Initials Preference Task; *b* = unstandardized beta coefficient, *pr* = partial correlation coefficient; ΔR^2 = change in the squared multiple correlation coefficient.
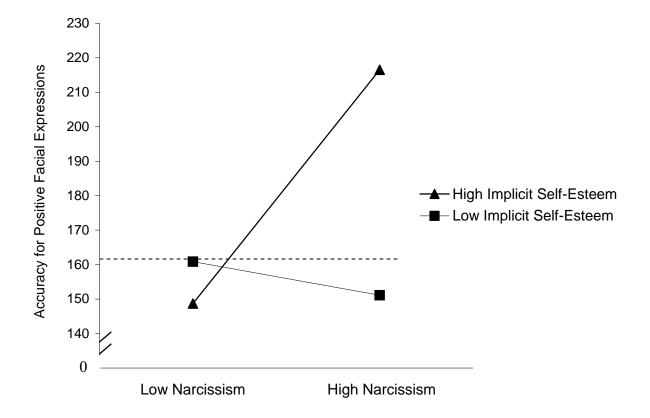
*** $p < .001$

*Figure 1. G*raphical representation of the interaction between narcissism and IAT implicit self-esteem in the prediction of accuracy scores for positive facial expressions. The dotted horizontal line corresponds to the sample mean for accuracy of identifying positive facial expressions.

APPENDIX A.

Narcissistic Personality Inventory

Please read each pair of statements and then choose the one that is closer to your own feelings and beliefs. Indicate your answer by circling the letter "A" or "B" to the left of each item. Please do not skip any items.

1.   A I have a natural talent for influencing people.
         B I am not good at influencing people.

2.   A Modesty doesn't become me.
         B I am essentially a modest person.

3.   A I would do almost anything on a dare.
         B I tend to be a fairly cautious person.

4.   A When people compliment me I sometimes get embarrassed.
         B I know that I am good because everybody keeps telling me so.

5.   A The thought of ruling the world frightens the hell out of me.
         B If I ruled the world it would be a much better place.

6.   A I can usually talk my way out of anything.
         B I try to accept the consequences of my behavior.

7.   A I prefer to blend in with the crowd.
         B I like to be the center of attention.

8.   A I will be a success.
         B I am not too concerned about success.

9.   A I am no better or no worse than most people.
         B I think I am a special person.

10.   A I am not sure if I would make a good leader.
         B I see myself as a good leader.

11.   A I am assertive.
         B I wish I were more assertive.

12.   A I like having authority over people.
         B I don't mind following orders.

13.   A I find it easy to manipulate people.
         B I don't like it when I find myself manipulating people.

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14. A I insist upon getting the respect that is due me.
     B I usually get the respect that I deserve.

15. A I don't particularly like to show off my body.
     B I like to display my body.

16. A I can read people like a book.
     B People are sometimes hard to understand.

17. A If I feel competent I am willing to take responsibility for making decisions.
     B I like to take responsibility for making decisions.

18. A I just want to be reasonably happy.
     B I want to amount to something in the eyes of the world.

19. A My body is nothing special.
     B I like to look at my body.

20. A I try not to be a show off.
     B I am apt to show off if I get the chance.

21. A I always know what I am doing.
     B Sometimes I am not sure of what I am doing.

22. A I sometimes depend on people to get things done.
     B I rarely depend on anyone else to get things done.

23. A Sometimes I tell good stories.
     B Everybody likes to hear my stories.

24. A I expect a great deal from other people.
     B I like to do things for other people.

25. A I will never be satisfied until I get all that I deserve.
     B I take my satisfactions as they come.

26. A Compliments embarrass me.
     B I like to be complimented.

27. A I have a strong will to power.
     B Power for its own sake doesn't interest me.

28. A I don't very much care about new fads and fashions.
     B I like to start new fads and fashions.

29.   A I like to look at myself in the mirror.
       B I am not particularly interested in looking at myself in the mirror.

30.   A I really like to be the center of attention.
       B It makes me uncomfortable to be the center of attention.

31.   A I can live my life in any way I want to.
       B People can't always live their lives in terms of what they want.

32.   A Being an authority doesn't mean that much to me.
       B People always seem to recognize my authority.

33.   A I would prefer to be a leader.
       B It makes little difference to me whether I am a leader or not.

34.   A I am going to be a great person.
       B I hope I am going to be successful.

35.   A People sometimes believe what I tell them.
       B I can make anybody believe anything I want them to.

36.   A I am a born leader.
       B Leadership is a quality that takes a long time to develop.

37.   A I wish somebody would someday write my biography.
       B I don't like people to pry into my life for any reason.

38.   A I get upset when people don't notice how I look when I go out in public.
       B I don't mind blending into the crowd when I go out in public.

39.   A I am more capable than other people.
       B There is a lot that I can learn from other people.

40.   A I am much like everybody else.
       B I am an extraordinary person.

Buss Aggression Questionnaire

Instructions:

Using the 5 point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Place your rating in the box to the right of the statement.

1 = extremely uncharacteristic of me
2 = somewhat uncharacteristic of me
3 = neither uncharacteristic nor characteristic of me
4 = somewhat characteristic of me
5 = extremely characteristic of me

_____1. Some of my friends think I am a hothead

_____2. If I have to resort to violence to protect my rights, I will.

_____3. When people are especially nice to me, I wonder what they want.

_____4. I tell my friends openly when I disagree with them.

_____5. I have become so mad that I have broken things.

_____6. I can't help getting into arguments when people disagree with me.

_____7. I wonder why sometimes I feel so bitter about things.

_____8. Once in a while, I can't control the urge to strike another person.

_____9. I am an even-tempered person.

_____10. I am suspicious of overly friendly strangers.

_____11. I have threatened people I know.

_____12. I flare up quickly but get over it quickly.

_____13. Given enough provocation, I may hit another person.

_____14. When people annoy me, I may tell them what I think of them.

_____15. I am sometimes eaten up with jealousy.

_____16. I can think of no good reason for ever hitting a person.

_____17. At times I feel I have gotten a raw deal out of life.

_____18. I have trouble controlling my temper.

_____19. When frustrated, I let my irritation show.

_____20. I sometimes feel that people are laughing at me behind my back.

_____21. I often find myself disagreeing with people.

_____22. If somebody hits me, I hit back.

_____23. I sometimes feel like a powder keg ready to explode.

_____24. Other people always seem to get the breaks.

_____25. There are people who pushed me so far that we came to blows.

_____26. I know that "friends" talk about me behind my back.

_____27. My friends say that I'm somewhat argumentative.

_____28. Sometimes I fly off the handle for no good reason.

_____29. I get into fights a little more than the average person.

Rosenberg Self-Esteem Scale

Please rate the following items using the scale below:

1	2	3	4	5
Strongly disagree				Strongly agree

___ 1. On the whole, I am satisfied with myself.

___ 2. At times I think I am no good at all.

___ 3. I feel that I have a number of good qualities.

___ 4. I am able to do things as well as most other people.

___ 5. I feel I do not have much to be proud of.

___ 6. I certainly feel useless at times.

___ 7. I feel that I'm a person of worth, at least on an equal plane with others.

___ 8. I wish I could have more respect for myself.

___ 9. All in all, I am inclined to feel that I am a failure.

___ 10. I take a positive attitude toward myself.

APPENDIX D.

Initial Preferences Task

In the table below, please rate how much you like each letter of the alphabet. Don't think about your answers too much – just go by your "gut feeling" about how well you like each letter. Using the following scale, place the number that best represents how much you like the letter inside the box with the letter:

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Dislike								Like
Very Much								Very Much

<u>Letter</u>   <u>Letter</u>

1. A   Rating: _____   14. Z   Rating: _____

2. X   Rating: _____   15. V   Rating: _____

3. Y   Rating: _____   16. F   Rating: _____

4. P   Rating: _____   17. N   Rating: _____

5. Q   Rating: _____   18. B   Rating: _____

6. W   Rating: _____   19. E   Rating: _____

7. S   Rating: _____   20. M   Rating: _____

8. T   Rating: _____   21. J   Rating: _____

9. K   Rating: _____   22. D   Rating: _____

10. C   Rating: _____   23. I   Rating: _____

11. O   Rating: _____   24. L   Rating: _____

12. G   Rating: _____   25. H   Rating: _____

13. R   Rating: _____   26. U   Rating: _____

Implicit Association Test Word Stimuli

Pleasant Words	Unpleasant Words
Joy	Garbage
Happiness	Stink
Smile	Death
Friend	Cockroach
Holiday	Disease
Gift	Disaster
Warmth	Pain
Party	Vomit
Sunshine	Agony
Love	Evil

Lexical Decision Task Word Stimuli, Randomized by Block

A	B	C	D
SHOTGUN	LECTURE	CREATOR	TOMB
VIGOR	INEAN	SHOCK	KLUIN
SHORM	CODE	EDITION	TRAFILE
SLAVE	VATUEM	GLIVE	FECTARE
FUAN	MUSERT	ARRAY	REFLEX
EVENT	GORE	PERDIRY	INJURY
VISBEL	GALLERY	FIDDESS	GEWL
HOUND	CESTAM	EBEMT	VETOR
BOWL	TIMP	HOSTAGE	VESSEL
MIPEEGE	VICTIM	PUVE	GODDESS
MURDER	TRIBUTE	ALUMBRA	SIDUTE
KASP	ROFLEN	TRUYER	PUPIL
DAPIL	PRAYER	PROFILE	WARMTH
ALGEBRA	DREETOR	WERMAH	NIRDER
JIDE	CHARM	PLAIN	SHODGUS
DOVE	ABITION	HOENT	SULFUR
SANSEB	SIGMUNT	MILEAGE	TRADUTE
CUSTOM	SHECH	PECNO	ETRUND
HUSHAGE	ERRAND	KISS	VACUUM
HEAVEN	PIANO	SOLFUD	OCEAN
GILHERY	DEVIL	MISERY	TEEVEN
URTAY	DIEF	DEED	PERJURY
VUBTIM	SEPIL	INDARY	GARM
FIGMENT	SALUTE	SUNSET	FOAM

APPENDIX G.

Marlowe-Crowne Social Desirability Scale

Please indicate whether the following statements are applicable to you. Choose True "T" if it applies to you or False "F" if it does not apply to you.

T F 1. I never hesitate to go out of my way to help someone in trouble.

T F 2. I have never intensely disliked anyone.

T F 3. I sometimes feel resentful when I don't get my way.

T F 4. I like to gossip at times.

T F 5. There have been times when I felt like rebelling against people in authority even though I knew they were right.

T F 6. I can remember "playing sick" to get out of something.

T F 7. There have been occasions when I took advantage of someone.

T F 8. I'm always willing to admit it when I make a mistake.

T F 9. I always try to practice what I preach.

T F 10. I sometimes try to get even rather than forgive and forget.

T F 11. When I don't know something I don't at all mind admitting it.

T F 12. I am always courteous, even when people who are disagreeable.

T F 13. At times I have really insisted on having things my own way.

T F 14. There have been occasions when I felt like smashing things.

T F 15. I would never think of letting someone else be punished for my wrong doings.

T F 16. I never resent being asked to return a favor.

T F 17. I have never been irked when people expressed ideas very different from my own.

T F 18. There have been times when I was quite jealous of the good fortune of others.

T   F   19. I am sometimes irritated by people who ask favors of me.

T   F   20. I have never deliberately said something that hurt someone's feelings.

APPENDIX H.

Informed Consent Form

I freely and voluntarily consent to participate in the research project entitled "The Relation between Personality Styles and Word Recognition" and understand that there is no penalty for non-participation. I also understand that my consent may be withdrawn at any time during the experimental session without prejudice or loss of credit. I will receive 2.0 hours of course credit for participating in the experiment which is being conducted by Elizabeth N. Lima (doctoral student in clinical psychology), under the direction of Dr. Bryan Loney (Assistant Professor in the Department of Psychology at FSU). The experiment will begin by completing a computer task measure in which I will quickly decide whether letter strings presented on a computer screen are real words or nonwords. I will then complete a number of rating scales measures of various personality and behavioral features such as extraversion and impulsivity. In order to protect my confidentiality to the extent allowed by law, I will be assigned a participant number that will serve as the only piece of identifying information on all research measures. The obtained information will be kept in a locked file cabinet in a research laboratory located on the Florida State University campus. A separate sheet of names with corresponding identification numbers will be kept in a locked cabinet in Elizabeth Lima's office. My responses to research measures will be grouped together with scores of other participants making it impossible for anyone outside of the research team to determine how I responded. If you agree to participate in the study, please sign and date below. Thank you for the time that you have spent reviewing these materials whether or not you decide that you would like to participate. Please free feel to direct any questions, comments, and/or concerns to Elizabeth N. Lima or Dr. Loney by phone (850-644-2300) or by email (lima@psy.fsu.edu). If you have any questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President of Research, at (850) 644-8633.

_____   _____   _____

First Name   Middle   Last

_____   _____

Participant Signature   Date

It is helpful for our research if we can use SAT or ACT scores as a separate variable in our analyses. However, we need your permission to access these scores that the university keeps on file. Of course, this data will be coded with your subject numbers rather than your name, and will be kept confidential to the extent allowed by law. Data will be kept in a locked file cabinet and will be destroyed by May of 2011. Please provide your signature below if you permit the use of your scores in our analyses.

_____   _____

Participant Signature   Date

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BIOGRAPHICAL SKETCH

PERSONAL INFORMATION

Phone: (850) 212-8413
E-mail: elizabeth.n.lima@gmail.com
Special Skills: Proficient also in Spanish (reading, writing, communication)

EDUCATION

William S. Hall Psychiatric Institute
       Clinical Psychology Intern, July 2006 – present
            Expected Internship Graduation Date: June 30, 2007

Florida State University, Tallahassee, FL, May 2001 - Present
       Degree: Currently pursuing Ph.D. degree
            Expected Doctoral Graduation: Summer 2007
         M.S. in Clinical Psychology awarded August 2004
       Major: Clinical Psychology
       Major Professor: Bryan R. Loney, Ph.D.
       Comprehensive Exam: Passed, September 11, 2004
       Dissertation Topic: The association between narcissism and implicit self-esteem:
            A test of the fragile self-esteem hypothesis.
            Dissertation Defense Date: June 26, 2007
       Master's Thesis: Emotional reactivity, trait Affectivity, and child conduct
          problems. Defended June 25, 2004.
       G.P.A: 3.79

Florida State University, Tallahassee, FL.
       Degree: B.S. awarded April 2001, Summa Cum Laude with Honors
       Major: Psychology
       Minors: Statistics and Spanish
       Honors Thesis Advisor: Wallace A. Kennedy, Ph.D.
       Honor Thesis Topic: Manipulation and depression in juvenile sex offenders.
       G.P.A: 4.0

AFFILIATIONS
American Psychological Society
Association for Behavioral and Cognitive Therapies
Phi Beta Kappa

CLINICAL EXPERIENCE

       Psychology Intern, William S. Hall Psychiatric Institute/USC School of Medicine
            July 5, 2006 – Present (Expected to complete internship June 29, 2007).

Child and Adolescent Rotation. Responsibilities included evaluation and treatment of children with pervasive developmental disorders, forensic evaluations and psychotherapy for children suspected to be victims of maltreatment (e.g., sexual abuse, physical abuse, and neglect), consultation and treatment with children and families in school-based therapy, inpatient and outpatient psychological assessment and consultation, and evaluation of young children experiencing externalizing and/or internalizing difficulties.

Assessment and Resource Center (ARC). The ARC is a nationally certified children's advocacy center providing forensic evaluations and psychotherapy for children who are suspected to have been maltreated. Duties involved conducting child and caregiver interviews as well as participate in multidisciplinary team meetings. Goal included conducting and documenting a developmentally appropriate, legally defensible child forensic interview, understanding the evaluator's role within multidisciplinary investigative team, understanding the role of evaluation and expert testimony in court (Family and General Sessions), defining abuse typologies and understanding relevant statutes for the reporting, investigation and prosecution of child abuse and neglect, and providing developmentally appropriate trauma-focused therapy.

Developmental Disorders Clinic. This is a multidisciplinary clinic for the evaluation and/or assessment of pervasive developmental disorders. Goals included providing diagnostic clarification and treatment recommendations to families with children suspected of having a developmental disability.

Columbia Area Mental Health School-Based Program. This is a school-based mental health treatment program. Duties involved providing outpatient services in a school-based program. Goals included gaining competency in completing various assessment instruments, developing treatment strategies for a school based program, and gaining an understanding of children living in low-income neighborhoods.

Infant and Early Childhood Evaluation Clinic. This is a multidisciplinary clinic for the evaluation of young children experiencing difficulties in areas including, but not limited to, internalizing (anxiety, depression, etc) and externalizing (ADHD, ODD, CD) symptomatology. Goals included providing diagnostic clarification and treatment recommendations to families with children experiencing impairing behavioral, social, and emotional difficulties.

Inpatient and Outpatient Evaluations. Diagnostic evaluations conducted with children committed to a hospital setting for stabilization due to posing harm to self and/or others. Duties involved consulting with psychiatrists and selecting, administering, and interpreting testing materials with which to address the psychiatrists' referral question. Goals including integrating background information and presenting difficulties in order to formulate adequate treatment recommendations to be implemented upon discharge. Also provided psychological assessment and consultation to psychiatry residents providing services to children and adults on an outpatient basis.

Adult Outpatient Rotation. Duties involved treatment of Axis II outpatients using a Dialectical Behavioral Therapy, inpatient group psychotherapy with individuals experiencing

different symptomatology (e.g., schizophrenia, bipolar disorder, substance dependence) hospitalized because of suspected risk to self or others, psychotherapy to long-term clients, and assessment, consultation, and treatment of adult outpatients.

Columbia Area Mental Health Dialectical Behavioral Therapy (DBT). This program uses the DBT manualized treatment program to target and modify maladaptive ways of coping in individuals with emotional dysregulation, following Dr. Linehan's (creator of DBT) well-validated procedures. Duties involved co-leading the skills building group therapy sessions.

Richland Springs Hospital Inpatient Psychotherapy Group. Duties involved co-leading a psychotherapy group of inpatients committed due to posing a risk to self and/or others. Goals included introducing coping strategies to aid in the stabilization of the inpatients as well as discussing techniques inpatients may continue to utilize upon discharge in order to learn adaptive ways of managing difficulties and reduce need for future hospitalizations.

Forensic (adult) Rotation. Duties will involve consultation, assessment and treatment within a forensic setting and preparation of expert testimony. Pretrial evaluations will be conducted of defendants in regard to competency to stand trial, criminal responsibility (sanity at the time of the offense), and the capacity to conform behavior to the requirements of the law (relating to the guilty but mentally ill defense). Malingering and disability evaluations were also conducted.

Deaf Services Clinic. Goals included learning to become culturally competent in the providing mental health services to Deaf individuals. Duties involved intensive case management and clinical service in the context of multidisciplinary consultation working with Deaf individuals and their families. Also, the acquisition of skills necessary in order to provide mental health services, including diagnostic evaluation, to this underserved population. American Sign Language classes provided during this year-long program.

Long-term Therapy Cases. Outpatient therapy services delivered to children who were sexually abused and their non-offending family members. Also, one of two therapists working in a family therapy case involving a child with severe levels of autism. In two long-term cases, therapy services were delivered in Spanish due to parental preferences.

Psychological Trainee, (Clinical Practicum), Florida State University Crisis Management
    Unit.
        August 2004 – April 2006.
        On-call duties as the civilian partner to a team that also included a police officer. The team responded to emergency calls primarily dealing with the FSU student and faculty population. Current suicide/homicide risk assessment and history evaluations were conducted and decision regarding hospitalization, or other appropriate course of action, was made. Follow-up interviews were also conducted.
        Supervisor: Joyce Carbonell, Ph.D.

Psychological Trainee (Clinical Practicum), Florida State Hospital, Chattahoochee, Florida.
August 2003- August 2004.
Assessment and therapy for geriatric and chronically mentally ill inpatients, primarily with dementia-related diagnoses and secondary psychotic disorders; forensic evaluations including assessment of competency to stand trial. Responsibilities involved conducting psychological interviews with residents, including intake evaluations, assessments mental status/cognitive functioning, and adjustment to the hospital ward. Duties also involved conducting evaluations assessing for cognitive impairments, Axis I symptomatology, and possible changes in their commitment status (e.g., incompetent to stand trial, not guilty by reason of insanity). Annual reviews assessing residents' overall functioning were also completed and such information in combination with chart and staff consultation was integrated into psychological reports. A 1-2 weekly long-term client caseload was maintained. Other responsibilities were to attend hospital unit's staff and treatment team meetings in a multidisciplinary setting.
Supervisor: Robert Kline, Psy.D.

Psychological Trainee (Clinical Practicum), Regional Multidisciplinary Evaluation and Consulting, Tallahassee, Florida.
August 2003- April 2005
Assessment services for children and adolescents, with an emphasis on learning disorders. Evaluations conducted in English and Spanish. A caseload of 1 client per week was maintained. Duties involved administering evaluations to clients and preparation of comprehensive reports that included clients' developmental history, evaluation of their current functioning as well as recommendations targeting presenting difficulties. Results from the parent/guardian interview with a staff social worker were incorporated into the report. Experience obtained using multiple instruments to assess for current estimate of intellectual ability (IQ), academic skills, cognitive processing and behavioral and emotional functioning.
Primary Supervisor: Beverly Atkeson, Ph.D.

Psychological Trainee (Clinical Practicum), Florida State University Psychology Clinic.
August 2002- May 2004
Responsibilities included maintaining individual weekly sessions with clients, utilizing cognitive-behavioral, interpersonal, and skills training techniques. Parent training also employed. A caseload of 4-5 clients composed of children, adolescents, families, couples, and adults was maintained. Duties also involved preparation for therapy sessions, attendance to weekly individual and group supervision and staff meetings and completion of clinical paperwork (e.g., intakereports, therapy notes). Therapeutic services conducted in Spanish when Spanish-speaking clients experienced difficulties communicating in English.
Supervisor: Donald Kerr, Ph.D. (August 2002-July 2003)
Supervisor: Thomas E. Joiner, Jr., Ph.D. (August 2003- May 2004)

Psychological Trainee (Clinical Practicum), Arthur G. Dozier School for Boys.

August 2002 - August 2003.
Duties involved conducting individual and group therapy and assessment evaluations for adolescent males (approximately 50% sexual offenders) incarcerated at a juvenile detention facility. Responsibilities included individual therapy and anger control groups and behavior management program implementation. Maintained an individual six-client caseload. Duties also involved conducting evaluations assessing offenders' intellectual, personality and behavioral functioning as well as attending weekly individual supervision and completing clinical paperwork (e.g., treatment plans, therapy notes). Therapeutic services conducted in Spanish when Spanish-speaking clients experienced difficulties communicating in English.
Supervisor: Teion Wells-Harrison, Ph.D.

TEACHING EXPERIENCE

Psychology Instructor, Research Methods Laboratory (PSY 3213/L), Florida State University.
Fall 2005, Spring 2006
Students are introduced to research methods and statistical analyses in psychology. Students are also presented with strategies to conducting analyses using the statistical software package SPSS. Duties include preparing all lectures and classroom demonstrations as well as a course website, grades and office hours.
Classroom size: 25 students, four classes over two-semester period.

Psychology Instructor, General Psychology (PSY 2012), Florida State University.
Fall 2004, Spring 2005, Summer 2005, Summer 2006
Introductory survey course of psychology as a science. Duties involved designing course curriculum, preparation and delivery of lectures with an emphasis on active learning. Responsibilities also included developing examinations and maintaining course website, grades and office hours and office hours.
Classroom size: 200 students (three classes) and 45 students (two classes).

Adjunct Faculty, Psychology Instructor, General Psychology (PSY 2012), Tallahassee Community College.
Spring 2005, Spring 2006.
Introductory survey course of psychology as a science having a liberal arts written requirement. Duties involved designing course curriculum, preparation and delivery of lectures with an emphasis on active learning. Responsibilities also included developing examinations and maintaining course website, grades and   office hours and office hours.
Classroom size: 40 students approximately (two classes).

PUBLICATIONS

Articles in Refereed Journals (listed chronologically)

Stanley, S., Reitzel, L., Wingate, L., Cukrowicz, K., Lima, E., & Joiner, T. (in press). Mindfulness: A primrose path for therapists using manualized treatments? Manuscript accepted for publication in *Journal of Cognitive Psychotherapy.*

Loney, B. R., Lima, E. N., & Butler, M. A. (2006). Trait affectivity and nonreferred adolescent conduct problems. *Journal of Clinical Child and Adolescent Psychology, 35,* 329-336.

Loney, B.R., Butler, M., Lima, E. N., Counts, C., & Eckel, L. (2006). The relation between salivary cortisol, callous-unemotional traits, and conduct problems in an adolescent non-referred sample. *Journal of Child Psychology and Psychiatry, 47,* 30 – 36.

Reitzel, L. R., Stellrecht, N. E., Gordon, K. H., Lima, E. N., Wingate, L. R., Brown, J. S., Wolfe, A. S., Zenoz, L. M., & Joiner, T. E. (2006). Does time between application and case assignment predict therapy attendance or premature termination in outpatients? *Psychological Services, 31,* 51-60.

Lima, E. N., Stanley, S., Kaboski, B., Reitzel, L. R., Richey, J. A., Castro, Y., Williams, F. M., Tannenbaum, K., Stellrecht, N. E., Jakobsons, L. R., Wingate, L. R., & Joiner, T. E. (2005). The incremental utility of the MMPI-2: When does therapist access not enhance treatment outcome? *Psychological Assessment, 17,* 462-468.

Brown, J. S., Stellrecht, N. E., Reitzel, L.R., Williams, F. M., Denoma, J. M., Wingate L. R., Lima, E. N., Reitzel, L. R., & Joiner, T. E. (2005). A comparison of therapy alone versus therapy and medication in a community clinic. *Journal of   Cognitive Psychotherapy, 19,* 309-316.

Minnix, J.A., Reitzel, L.R., Repper, K.A., Burns, A.B., Williams, F., Lima, E.N., Cukrowicz, K.C., Kirsch, L., and Joiner, T.E., Jr. (2005). Total number of MMPI-2 clinical scale elevations predicts premature termination after controlling for intake symptom severity and personality disorder diagnosis. *Personality & Individual Differences, 38,* 1745-1755.

Book Chapters (listed chronologically)

Wingate, L.R., Lima, E., & Butler, M. (2005). Step 1: Situational description, in   Cukrowicz, K. C., Burns. A. B., Minnix, J., Reitzel, L. R., & Joiner, T. E. (Eds)   Simple treatment for complex problems: A patient workbook. Tallahassee, FL: Center Circle Press.

Loney, B. R., & Lima, E. N. (2003). The classification and assessment of conduct disorders. In C. A. Essau (Ed), *Conduct and Oppositional defiant disorders: Epidemiology, risk factors, and treatment* (pp 3-31). New Jersey, Lawrence: Earlbaum.

Manuscripts Under Review

Loney, B. R., Butler, M. A., Lima, E. N., Counts, C. A., & Schmeelk, K. (2007). Is relational aggression a sex-specific marker for childhood psychopathic traits? Manuscript being revised for resubmission.

PRESENTATIONS (listed chronologically)

Lima, E. (2006). Delivery of Mental Health Services to Latino Populations. Presented at the USC School of Medicine Child Grand Rounds in Columbia, SC.

Loney, B. R., Butler, M., Lima, E., Counts, C., & Eckel, L. (2005). The relation between salivary cortisol, callous-unemotional traits, and conduct problems in an adolescent non-referred sample. Paper presented at the 2005 Society for Research on Child Development Conference in Atlanta.

Loney, B. R., Butler, M. A., Counts, C. A., & Lima, E. N. (2005). Callous-unemotional traits, parenting dysfunction, and adolescent conduct problems: The role of gender and relational aggression. Poster presented at the 2005 Society for Research on Child Development Conference in Atlanta.

Lima, E.N., Kaboski, B., Reitzel, L. R., Tannenbaum, K. R., Jakobsons, L. J., Joiner, T. E. (2004). The Clinical Utility of the MMPI-2: Does Therapist Access Improve Treatment Outcome? Poster presented at the 38th Annual American Association for the Advancement of Behavior Therapy convention. New Orleans, LA.

Reitzel, L. R., Stellrecht, N. E., Gordon, K. H., Lima, E. N., Wingate, & Joiner, T. E. (2004). Playing the waiting game: Does time between application and case assignment predict therapy attendance or premature termination? Poster presented at the 38th annual American Association for the Advancement of Behavior Therapy convention. New Orleans, LA.

Loney, B.R., Vasey, M., & Lima, E.N. (2003). The agreement and unique endorsement of child psychopathy items across informant categories. Poster presented at American Psychological Society.

Paivandy, S., Loney, B.R., Butler, M., & Lima, E.N. (2003). The convergent and discriminant validity of the child psychopathy narcissism dimension. Poster presented at American Psychological Society.

Lima, E. N., Butler, M.A., & Loney, B.R. (June, 2002). Parent-reported psychopathy: The robustness of the three-factor model in adolescents. Poster presented at American Psychological Society.