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Exploring the Accuracy of Highly Positive Self-Evaluations: A Bogus Pipeline Examination of Fragile Self-Esteem

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The University of Southern Mississippi

EXPLORING THE ACCURACY OF HIGHLY POSITIVE SELF-EVALUATIONS:

A BOGUS PIPELINE EXAMINATION OF FRAGILE SELF-ESTEEM

by

Erin Michele Myers

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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ABSTRACT

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The present study tested the prediction that individuals with fragile high self-esteem are engaging in impression management when they claim to possess highly positive feelings of self-worth. Phase One participants (N = 449) completed internet-based measures of self-esteem level and self-esteem fragility under standard conditions. Phase Two participants (N = 75) completed laboratory-based measures of self-esteem under control or 'bogus pipeline' conditions designed to encourage participants to respond more honestly to questionnaires concerning their self-worth. Hierarchical multiple regression analyses revealed partial support for the impression management hypothesis such that individuals with discrepant high self-esteem (i.e., high explicit self-esteem and low implicit self-esteem as measured by the Name-Letter Task) reported lower levels of explicit self-esteem under bogus pipeline conditions. The impression management hypothesis was not supported for an alternate measure of implicit self-esteem (i.e., Implicit Association Test) or for the two other markers of self-esteem fragility included in the study (i.e., contingent self-esteem and self-esteem instability). The discussion will focus on the implications of the present findings for the current conceptualization of fragile high self-esteem.

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CHAPTER I

INTRODUCTION

Acting is all about honesty. If you can fake that, you've got it made.

-George Burns, American comedian, actor, and writer (1896 - 1996)

In order to put on a believable performance, an actor must convey sincerity. As suggested by the opening quote from George Burns, an actor who has the ability to fake honesty may, indeed, have it made. In a similar fashion, some individuals may attempt to fake honesty in their daily lives by acting out the role of having high self-esteem, even when they do not seem to actually feel especially good about themselves. However, unlike actors who are performing for an audience, it is not clear whether these individuals are trying to convince themselves, other people, or both. Despite the wealth of research concerning self-esteem, relatively little is known about whether the high levels of self-esteem some individuals claim to possess tell the entire story regarding their actual feelings of self-worth. Past research suggests that some individuals may present a façade of positive self-regard that may not accurately reflect their genuine feelings of self-worth (Baumeister, Tice, & Hutton, 1989; Bosson, Brown, Zeigler-Hill, & Swann, 2003; Brown, 1991; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Olson, Fazio, & Hermann, 2007). That is, the high levels of self-esteem these individuals claim to possess on self-report measures may not be an accurate representation of their authentic self-evaluations. Whereas some individuals may be trying to convince *themselves* that they honestly believe their positive self-evaluations, others may be attempting to convince *other people* that they possess a positive sense of self-regard.

In order to gain a better understanding of how individuals really feel about themselves, the present study utilized the *bogus pipeline* technique in order to encourage participants to answer questions about their feelings of self-worth more honestly. The bogus pipeline technique encourages honest responding by leading participants to believe that the experimenter has access to their true attitudes through the use of a lie detector (Jones & Sigall, 1971; Sigall & Page, 1971). This technique has been used successfully in past research to encourage greater honesty (e.g., Alexander & Fisher, 2003; Boysen, Vogel, & Madon, 2006; for a review see Roese & Jamieson, 1993) and was used in the present study to improve our understanding of why individuals may sometimes report higher levels of self-esteem than they actually seem to possess.

What is Self-Esteem?

Self-esteem has emerged as one of the most popular and enduring topics in psychology. First described by William James (1890), self-esteem was at that time characterized as the sense of positive self-regard that develops as a result of consistently exceeding one's important goals. More than a century later, the definition of self-esteem initially offered by James remains remarkably relevant such that self-esteem is still often thought of as a positive attitude an individual holds toward the self that reflects the extent to which an individual feels competent and successful (Coopersmith, 1967). More generally, self-esteem refers to an individual's overall feelings of self-worth and, as a result, is often referred to as global self-esteem (Brown & Marshall, 2006; Rosenberg, 1965).

In contrast to global self-esteem, which is thought to be relatively stable over time (Brown & Marshall, 2006), state self-esteem describes an individual's self-evaluation at a particular moment in time, thus accounting for temporary changes in self-esteem due to

emotional reactions to positive or negative events (Heatherton & Polivy, 1991). However, despite the distinction made between global and state self-esteem, it is important to note that state self-esteem over time may largely determine an individual's global self-esteem. For example, much like weather patterns over an extended period of time determine the climate, an individual's daily self-evaluations over an extended period of time may strongly influence an individual's global level of self-esteem (Leary & MacDonald, 2003).

Self-esteem has received considerable empirical attention. A great deal of this research has focused on the benefits associated with the possession of high levels of self-esteem. For example, research has shown that high self-esteem is related to positive outcomes such as educational performance (Hansford & Hattie, 1982), vocational satisfaction (Frone, 2000; Judge & Bono, 2001), happiness (Furnham & Cheng, 2000), psychological health (Taylor & Brown, 1988), popularity (Battistich, Solomon, & Delucchi, 1993), quality of social interactions (Keefe & Berndt, 1996), and overall life satisfaction (Diener & Diener, 1995). One explanation for the relationship between high self-esteem and positive outcomes comes from self-determination theory (Deci & Ryan, 1995). This explanation suggests that individuals who develop an autonomous sense of self may be more likely to experience positive feelings about themselves. These positive feelings may then lead to successful outcomes across a variety of domains which may, in turn, sustain and bolster an individual's positive self-evaluations. Another possible explanation for the relationship between high self-esteem and positive outcomes is that these outcomes may be indicative of an individual's level of social inclusion (Baumeister & Leary, 1995). That is, the social support that is readily available when individuals

cultivate meaningful attachments may make the experience of positive life outcomes more likely.

As a complement to research showing that high self-esteem is often related to positive outcomes, a great deal of research has also focused on the consequences associated with the possession of low levels of self-esteem. For example, low self-esteem has been found to be associated with negative outcomes such as depression (Tennen & Affleck, 1993), aggression (Gondolf, 1985; Staub, 1989), delinquency (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005), relationship problems (Hendrick, Hendrick, & Adler, 1988; Murray, Rose, Bellavia, Holmes, & Kusche, 2002), and stressful life events (Lakey, Tardiff, & Drew, 1994). Additionally, low self-esteem during adolescence has been found to be associated with poor health, criminal behavior, and limited economic prospects during adulthood (Trzesniewski et al., 2006). According to self-determination theory (Deci & Ryan, 1995), one possible explanation for the relationship between low self-esteem and negative outcomes is a lack of autonomy. That is, individuals who do not feel a sense of control over their lives or actions may be more likely to experience negative feelings about the self. These negative feelings may then make negative outcomes more likely, which may, in turn, reinforce an individual's negative self-conception. Another possible explanation for the relationship between low self-esteem and negative outcomes is that these outcomes may simply reflect an individual's level of social exclusion (Baumeister & Leary, 1995). In other words, individuals who lack a network of social support may be more likely to experience various negative consequences relating to health, adjustment, and well-being.

Several decades ago, laypersons and researchers alike began to take note of the abundance of research findings that often linked high levels of self-esteem to positive

outcomes and low levels of self-esteem to negative outcomes. Despite the correlational nature of these findings, the popular self-esteem movement began with the idea that increasing the self-esteem of individuals would surely lead to more positive outcomes across a wide array of domains (Baumeister, Campbell, Krueger, & Vohs, 2003). In essence, self-esteem was considered to be something akin to a panacea that could cure any number of societal problems ranging from poverty to aggression. For example, the state of California created a program aimed at increasing the self-esteem of individuals in order to tackle such problems as crime, teen pregnancy, drug abuse, and academic underachievement (Mecca, Smelser, & Vasconcellos, 1989). However, as noted in an extensive review of the self-esteem literature (Baumeister et al., 2003), it is unclear whether self-esteem actually *causes* any of the outcomes often associated with it or not (for counterarguments see Swann**,** Chang-Schneider, & Larsen-McClarty, 2007 or Trzesniewski et al., 2006). Furthermore, Baumeister and colleagues (2003) argue that many attempts to increase self-esteem may actually do more harm than good. For example, attempting to increase self-esteem by giving praise where it is not warranted may foster feelings of superiority. These feelings may, in turn, help to sustain a sense of self-worth that – despite being highly positive – remains vulnerable to challenge.

Despite the many positive outcomes often associated with it, high self-esteem has also been shown to be related to some negative outcomes. For example, research has shown high self-esteem to be associated with such negative outcomes as prejudice (Crocker, Thompson, McGraw, & Ingerman, 1987; Verkuyten, 1996; Verkuyten & Masson, 1995) and aggression (Baumeister, Bushman, & Campbell, 2000; Baumeister et al., 2003; Baumeister, Smart, & Boden, 1996; Kernis, Grannemann, & Barclay, 1989; Papps & O'Carroll, 1998). One potential reason for the relationship between high self-

esteem and these negative outcomes is that a subset of individuals with high self-esteem exhibit a tendency to engage in a variety of strategies aimed at protecting and enhancing their self-views (i.e., threatened egotism; Baumeister et al., 2000; Baumeister, Heatherton, & Tice, 1993; Baumeister et al., 1996; Baumeister et al., 1989; Blaine & Crocker, 1993; Fitch, 1970; Kernis et al., 1989; Miller & Ross, 1975; Tice, 1991). In other words, some individuals may lash out in anger when their positive – yet easily threatened – feelings of self-worth are challenged in various ways (Baumeister et al., 1996).

How is Self-Esteem Measured

Owing to the self-evaluative nature of self-esteem (i.e., "How do I feel about myself?"), it makes sense that researchers often rely on straightforward self-report measures in order to measure self-esteem (Blascovich & Tomaka, 1991). In other words, individuals are often simply asked to provide ratings of agreement with items designed to reflect their explicit feelings of self-worth. This direct approach to the measurement of self-esteem has a number of advantages (Blascovich & Tomaka, 1991; Bosson, 2006a; Zeigler-Hill & Jordan, in press). Foremost, if self-esteem is an attitude about how one feels about the self, then individuals may have unique access to that self-knowledge. In support of this contention, research has shown that observer-ratings of self-esteem do not show strong correlations with self-ratings of self-esteem, even when the observer and target are well-acquainted (Buhrmester, Furman, Wittenberg, & Reis, 1988; Watson, Suls, & Haig, 2002). Self-report measures are also economical, simple to administer and interpret, and have been shown to possess excellent psychometric properties (Bosson, 2006a).

In order for direct reports of self-esteem to be accurate, however, there are two primary assumptions that must be met. First, people must be aware of their self-esteem. Second, people must be willing to answer honestly on self-report measures of self-esteem. The first key assumption – that individuals have the ability to access their genuine feelings of self-worth – may not always be met. That is, individuals may not always have complete access to all facets of their self-esteem (Farnham, Greenwald, & Banaji, 1999; Hetts & Pelham, 2001). The fact that direct measures of self-esteem have been shown to correlate with self-deception would also appear to call this assumption into question (Paulhus, 1984, 2002). Self-deception refers to the tendency for individuals to report – and honestly believe – a positive conception of self that may not accurately reflect their latent feelings of self-worth (Paulhus, 1984, 2002). In other words, individuals may present a façade of positive self-regard that – unbeknownst to them – is not an accurate reflection of their inaccessible self-views. The possibility that individuals may not always be aware of all aspects of their self-attitudes is supported, in part, by a body of research showing that individuals, in general, are not always aware of the automatic processes underlying much of their behavior (for a review see Bargh, 2006).

The second key assumption that is necessary in order for direct measures of self-esteem to be accurate – that individuals will honestly report their feelings of self-worth – may also be flawed. That is, high self-esteem may sometimes reflect an individual's desire to give socially desirable responses (Crowne & Marlowe, 1960). Due in part to the cultural desirability of possessing high self-esteem (Baumeister et al., 2003), some individuals may give less than honest responses in order to present themselves to others in a positive fashion. In support of this idea, direct measures of self-esteem have been shown to correlate with the tendency to manipulate one's image to create a positive

impression (i.e., impression management; Paulhus, 1984, 2002; Raskin, Novacek, & Hogan, 1991). One recent study that also supports this idea has shown that self-presentational strategies may influence self-reported explicit self-esteem (Olson et al., 2007).

In addition to conforming to a valued cultural ideal, individuals who present the appearance of possessing high levels of self-esteem may stand to reap social benefits. For example, individuals who are perceived as having higher levels of self-esteem are often viewed more positively by others (Zeigler-Hill & Myers, 2009). Not surprisingly, research has shown that individuals who report high levels of self-esteem tend to be concerned with cultivating a positive image (Baumeister et al., 1989), making direct measures of self-esteem particularly problematic. That is to say, direct measures of self-esteem appear to be inadequate for determining whether individuals – especially those who report high levels of self-esteem – are reporting their genuine feelings of self-worth.

In order to deal with some of the problems posed by direct measures of self-esteem (e.g., self-deception and impression management concerns), some researchers have developed indirect measures of self-esteem. These *nonreactive* measures attempt to measure self-esteem in a way that bypasses individuals' conscious – and potentially biased – self-evaluations. In contrast to direct measures of self-esteem that are designed to capture an individual's *explicit* feelings of self-worth, nonreactive measures of self-esteem are designed to capture what are thought to be an individual's *implicit* feelings of self-worth (Bosson, 2006b; Greenwald & Banaji, 1995; Pelham & Hetts, 1999). Whereas explicit self-esteem is defined as an individual's conscious feelings of self-worth that are deliberate and flexible (Brown & Marshall, 2006), implicit self-esteem refers to an individual's nonconscious, inflexible, intuitive – and possibly automatic – feelings of

self-worth that exist outside of conscious awareness (Greenwald & Banaji, 1995; Jordan, Whitfield, & Zeigler-Hill, 2007; Pelham & Hetts, 1999; Zeigler-Hill & Jordan, in press). The idea that individuals can possess both explicit and implicit forms of self-esteem is supported, in part, by dual information processing models (Epstein & Morling, 1995; Smith & DeCoster, 2001; Wilson, Lindsey, & Schooler, 2000) which suggest that individuals simultaneously process information on both a cognitive (i.e., rational, deliberative, and conscious) and experiential (i.e., affective, automatic, and nonconscious) basis. As such, it is thought that explicit self-esteem is a product of the cognitive system and that implicit self-esteem is likely a derivative of the experiential system (Zeigler-Hill & Jordan, in press).

The measurement of implicit self-esteem does present some methodological challenges. Unlike direct measures of explicit self-esteem, individuals cannot simply be asked to report on their implicit self-esteem. Therefore, the nonreactive measures that attempt to capture implicit self-esteem typically rely on either association-based or indirect strategies (Karpinski & Steinberg, 2006). The association-based approach directly gauges the extent to which individuals associate themselves with positive or negative stimuli. For example, an association-based measure of implicit self-esteem such as the self-esteem version of the Implicit Association Test (IAT; Greenwald & Farnham, 2000) uses reaction times to measure the degree to which individuals associate the self with positive or negative stimuli. The indirect approach, by contrast, compares individuals' ratings of self-relevant stimuli to the ratings of other people. For example, an indirect measure of implicit self-esteem such as the Name-Letter Task (NLT; Nuttin, 1985, 1987) gauges the extent to which individuals favor the letters of their names in comparison with other people.

Despite the advantages associated with the use of non-reactive self-esteem measures (e.g., possible avoidance of self-deception and impression management concerns), there are disadvantages as well (for a recent critique of the implicit self-esteem literature see Buhrmester, Blanton, & Swann, 2010). One important problem with nonreactive measures is that they have often been found to possess less than acceptable psychometric properties (Bosson, 2006a; Bosson, Swann, & Pennebaker, 2000). For example, in a review of nonreactive measures, Bosson (2006a) found that only two measures – the Name-Letter Task (Nuttin, 1985, 1987) and the Implicit Association Test (Greenwald & Farnham, 2000) – possessed adequate psychometric properties. For the most part, nonreactive measures of self-esteem have shown low test-retest reliability as well as little or no correlation with each other (Bosson et al., 2000). The lack of convergent validity between measures of implicit self-esteem is particularly troublesome because different measures of the same underlying construct are expected to correlate with each other. One potential explanation for this lack of convergent validity may be that the various nonreactive measures are capturing different facets of implicit self-esteem (Campbell, Bosson, Goheen, Lakey, & Kernis, 2007; Koole & Pelham, 2003; Sakellaropoulo & Baldwin, 2007). Despite this possibility, it remains unclear whether nonreactive measures truly capture wholly nonconscious attitudes (Fazio & Olson, 2003; Krizan, 2008). For example, it may be that some measures of implicit self-esteem may capture a combination of implicit and explicit self-esteem (Karpinski & Steinberg, 2006). Alternately, recent research has suggested that implicit self-esteem may not be implicit at all (Krizan, 2008). For example, in a test of the implicit nature of the Name-Letter Task, Krizan (2008) found many participants to be aware of the self-relevant nature of the task suggesting that individuals may have at least some awareness of their 'implicit' self-

esteem. Taken together, the challenges associated with nonreactive measures of self-esteem are serious but – despite these difficulties – they do offer the potential to obtain a more complete picture of an individual's sense of self-worth.

Discrepancies between Explicit and Implicit Self-Esteem

The advent of nonreactive measures has allowed the comparison of implicit and explicit forms of self-esteem within the same individual. As such, individuals may possess self-esteem that is either congruent (i.e., low explicit and low implicit; high explicit and high implicit) or discrepant (i.e., low explicit but high implicit; high explicit but low implicit). It is not uncommon for individuals to possess discrepancies between their implicit and explicit self-esteem (Bosson et al., 2003; Jordan et al., 2003; Zeigler-Hill, 2006; Zeigler-Hill & Jordan, in press). For example, it is possible for individuals to possess low levels of explicit self-esteem and high levels of implicit self-esteem (i.e., discrepant low self-esteem). Relatively little research has focused on discrepant low self-esteem, but there is some evidence that this form of discrepant self-esteem may be problematic for individuals because it is indicative of a non-integrated self-concept (Epstein & Morling, 1995; Schröder-Abé, Rudolph, Wiesner & Schütz, 2007).

The form of discrepant self-esteem that has received the most empirical attention is that of discrepant high self-esteem (Bosson et al., 2003; Jordan et al., 2003). Individuals who possess this form of discrepant self-esteem possess high levels of explicit self-esteem and low levels of implicit self-esteem. It is thought that these individuals may wear a façade of positive self-worth in order to mask their underlying feelings of diminished self-worth (Bosson et al., 2003; Jordan et al., 2003). For this reason, individuals with discrepant high self-esteem are thought to possess explicit self-esteem that – despite its outward appearance – is actually fragile and easily threatened

(Bosson et al., 2003; Jordan et al., 2003). In support of this idea, past research has shown that discrepant high self-esteem is associated with both self-enhancement (Bosson et al., 2003) and self-protective behaviors (Jordan et al., 2003). In addition, discrepant high self-esteem has been linked with greater self-esteem instability (Zeigler-Hill, 2006), defensive behavior (Kernis, Lakey, & Heppner, 2008; Schröder-Abé et al., 2007), and has sometimes – but not always – been found to correlate with narcissism (for reviews see Bosson et al., 2008 or Zeigler-Hill & Myers, 2008).

Fragile Self-Esteem

Individuals with discrepant high self-esteem – because they possess self-esteem that is positive yet easily threatened – are considered to possess a form of fragile self-esteem (Kernis, 2003). Fragile self-esteem is defined as a positive sense of self-worth that is vulnerable to challenge, needs frequent outside validation, and often requires some degree of self-deception in order to be maintained (Kernis, 2003). In contrast, secure self-esteem is defined as a positive sense of self-worth that is realistic, well-anchored, and resistant to threat (Kernis, 2003). It appears that high self-esteem is a heterogeneous category consisting of individuals with both secure and fragile forms of self-esteem, perhaps helping to explain why high self-esteem is related to both positive and negative life outcomes (Baumeister et al., 2003). Unlike individuals with secure high self-esteem, individuals who possess fragile self-esteem tend to employ self-defensive and self-enhancement strategies in order to protect their positive – yet vulnerable – feelings of self-worth (Kernis, 2003; Kernis et al., 2008). For example, these individuals tend to exhibit enhanced sensitivity to evaluative events (Crocker, Sommers, & Luhtanen, 2002), greater fluctuations in mood (Kernis et al., 1993), over-reliance on social sources of

evaluation (Greenier et al., 1999; Patrick, Neighbors, & Knee, 2004), as well as greater hostility and anger (Kernis et al., 1989).

In addition to the self-esteem discrepancy model of self-esteem (Bosson et al., 2003; Jordan et al., 2003), fragile self-esteem may also be conceptualized in terms of self-esteem instability (Kernis et al., 1993) and contingent self-esteem (Crocker & Wolfe, 2001; Deci & Ryan, 1995). The instability model of fragile self-esteem (for a review see Kernis, 2005) assesses the extent to which an individual's state self-esteem fluctuates on a day-to-day basis in order to characterize an individual's self-esteem as fragile (i.e., greater levels of fluctuation) or secure (i.e., lower levels of fluctuation). Individuals who possess unstable self-esteem may be at risk for a variety of negative outcomes. For example, these individuals may be more prone to experiencing depression in response to ordinary hassles (Kernis, Paradise, Whitaker,Wheatman, & Goldman, 2000). Individuals with unstable self-esteem may also be hypersensitive to social feedback such that they tend to experience greater reactivity to both positive and negative events (Greenier et al., 1999). In other words, these individuals may hold feelings of self-worth that are constantly 'on-the-line' and, therefore, quite influenced by daily events – both positive and negative. In addition, individuals who possess unstable self-esteem have been shown to possess an impoverished self-concept (Kernis et al., 2000; Zeigler-Hill & Showers, 2007), engage in a greater degree of verbal defensiveness (Kernis et al., 2008), and employ more immature defenses (Myers & Zeigler-Hill, 2008; Zeigler-Hill, Chadha, & Osterman, 2008) than those with stable self-esteem.

The contingency model of self-esteem (Crocker & Wolfe, 2001; Deci & Ryan, 1995) assesses the extent to which individuals base their self-worth on meeting internal or external standards that are highly sensitive to successes or failures in specific, self-

relevant domains in order to characterize an individual's self-esteem as fragile (i.e., higher levels of contingency) or secure (i.e., lower levels of contingency). Self-esteem contingency may be conceptualized at either the domain-specific (Crocker & Wolfe, 2001) or global levels (Deci & Ryan, 1995; Kernis, 2003). The domain-specific approach to contingent self-esteem assesses individual differences in the degree to which individuals base their self-esteem on specific areas of their lives (e.g., appearance, academic competence). Individuals who possess self-esteem that is contingent on a particular domain may experience negative outcomes when they do not meet their own standards. For example, students who based their self-worth on the domain of academic competence tended to experience declines in their overall global self-esteem after receiving rejection letters from graduate schools (Crocker et al., 2002). In addition, Crocker and Park (2004) found that individuals who based their self-worth on gaining the approval of others experienced a greater degree of relationship problems, perhaps because they sought excessive reassurance from their partners and interpreted ambiguous information in a negative light.

The global approach to self-esteem contingency, by contrast, assesses individual differences in the overall degree to which individuals base their self-esteem on meeting internal or external standards. In other words, individuals who possess this form of self-esteem contingency may show a general tendency to base their feelings of self-worth on meeting standards (Kernis & Goldman, 2006). As such, individuals who possess a more generalized form of self-esteem contingency may be especially attuned to social comparisons in order to gauge whether or not they 'measure up.' For example, individuals with highly contingent self-esteem tended to experience increased negative affect when compared to others (Patrick et al., 2004). Reflecting the idea that their self-

worth is constantly at stake, individuals with highly contingent self-esteem have been shown to engage in a greater degree of verbal defensiveness (Kernis et al., 2008). Additionally – perhaps stemming from the stress that may go along with constantly comparing oneself to others – individuals with highly contingent self-esteem may be more likely to abuse alcohol (Neighbors, Larimer, Markman-Geisner, & Knee, 2004).

What is Self-Esteem For?

The existence of fragile self-esteem highlights the fact that people seem to be interested in claiming to possess high levels of self-esteem – even when they may not actually possess such positive feelings about themselves. In order to gain a clearer understanding of why people are so attuned to self-esteem, it may be helpful to examine the functions of self-esteem. One function of self-esteem may simply be to provide individuals with the intrapsychic tools they need to successfully navigate the world. High self-esteem has been shown to be associated with intrapsychic benefits such that individuals with higher levels of self-esteem are more likely to possess the ability to feel good about themselves (Diener & Diener, 1995), deal with life's challenges (Taylor & Brown, 1988), and feel that they are valued by others (Keefe & Berndt, 1996). Considering the inherently rewarding nature of these advantages, it is easy to understand why individuals may be interested in possessing high levels of self-esteem. What is less clear, however, is why individuals may sometimes want to create the *impression* of having high self-esteem (Raskin et al., 1991).

In order to better understand why individuals may want to create the impression of possessing high self-esteem, it may be helpful to consider both the interpersonal nature of self-esteem and the interpersonal benefits that often accompany the possession of high levels of self-esteem. As was first suggested by Cooley (1902) and later extended by

Mead (1913), individuals may come to define themselves based on the impressions that others have of them (i.e., the looking-glass self). In other words, an individual who is perceived by others in a positive light may come to incorporate the positive impressions of others into one's own self-concept. According to this perspective, it would be advantageous for individuals to cultivate a positive appearance in order to reap the personal benefits that may arise out of others' positive evaluations. Therefore, creating the appearance of high self-esteem may be one way for individuals to accomplish this goal.

Individuals may also be interested in creating the impression of possessing high self-esteem in order to gain interpersonal advantages. That is, self-esteem may hold important consequences for interpersonal functioning (Kirkpatrick & Ellis, 2001, 2006). For example, it is thought that self-esteem may have evolved out of the fundamental human need to belong (Baumeister & Leary, 1995) such that it serves a status-tracking function.[1] In other words, self-esteem may allow individuals to monitor their social value on both a short- and long-term basis (i.e., sociometer theory; Leary & Downs, 1995). Considering the evolutionary advantages associated with group inclusion (e.g., greater chance of survival), the evolution of a status-tracking system appears to serve an important interpersonal function. According to sociometer theory, self-esteem functions much like the gas gauge on the dashboard of an automobile such that higher levels of self-esteem are reflective of social inclusion whereas lower levels of self-esteem are

[1] It should also be noted that an alternate theory regarding the function of self-esteem is Terror Management Theory (TMT; Greenberg, Solomon, & Pyszczynski, 1992; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). TMT suggests that self-esteem allows individuals to reduce the existential anxiety that results from the uniquely human knowledge that death is forthcoming. In addition, TMT posits that individuals gain self-esteem by meeting cultural expectations. TMT has been supported by research showing that when individuals are reminded of their mortality, their striving for self-esteem generally increases (Pyszczynski, Greenberg, & Solomon, 2005).

reflective of social exclusion (Bourgeois & Leary, 2001; Leary, 1999; Leary, Cottrell, & Phillips, 2001; Leary & Downs, 1995; Leary, Haupt, Strausser, & Chokel, 1998; Leary & MacDonald, 2003; Leary, Tambor, Terdal, & Downs, 1995; Nezlek, Kowalski, Leary, Blevins, & Holgate, 1997). For example, when the gas gauge on an automobile shows that the level of fuel in the tank is low, individuals must act to refill the tank or risk becoming stranded on the highway. In much the same fashion, individuals who experience low levels of state self-esteem should be alerted to strive for social acceptance so that they may avoid the possibility of becoming ostracized from their social support networks.

Expanding on sociometer theory, Kirkpatrick and Ellis (2001, 2006) proposed the idea of multiple sociometers that serve a status-tracking function across a variety of interpersonal domains rather than focusing solely on a global form of relational value. According to this extension of the basic sociometer model, individuals may be able to use self-esteem – not only to monitor relational value – but also to gauge their value as a potential mate or monitor their rank within a social group. Taking mate value as an example, consider the cost in terms of time and resources of attracting the highest quality mate possible. Being able to accurately perceive one's own value as a mate may prevent the loss of valuable resources in the search for a mate of equivalent value. In other words, no time is wasted in pursuit of a mate that is out of one's league or, by the same token, one does not select a lower-quality mate than one may be capable of attracting. This notion has been supported by research showing that self-esteem may be a good indicator of an individual's value as a mate (Brase & Guy, 2004; Dawkins, 1982; Kenrick, Groth, Trost, & Sadalla, 1993; Kiesler & Baral, 1970; Shackelford, 2001; Tooby & Cosmides,

1990; Trivers, 1972; Wright, 1994; Zeigler-Hill, 2010; Zeigler-Hill, Campe, & Myers, 2009).

It is also thought that self-esteem may have evolved to aid individuals as they monitor their rank within social dominance hierarchies (Kirkpatrick & Ellis, 2001, 2006). Because individuals must enact different strategies depending on their rank, it is important that they accurately perceive their place in the dominance hierarchy in order to make appropriate behavioral choices. For example, in the evolutionary past it may have been necessary for lower-ranking individuals to devise ways to attain everything from food to mating opportunities without openly infringing on the domains of higher-ranking individuals. Conversely, higher-ranking individuals may have been attuned to maintaining and defending their positions in the social hierarchy. Supporting the notion that self-esteem may be indicative of an individual's position in the dominance hierarchy, self-esteem has been shown to be associated with dominance (Barkow, 1989; Gilbert, Price, & Allan, 1995; Zeigler-Hill, in press).

Despite some evidence linking dominance and self-esteem, it has been suggested that people may be even more attuned to prestige than they are to dominance (Henrich & Gil-White, 2001). In contrast to dominance – which is maintained by force – prestige is a more refined and evolved form of social dominance in which others recognize the special skills, knowledge, or achievements of others. Individuals then seek to associate with these high prestige individuals in order to attain social benefits by nature of association (Henrich & Gil-White, 2001). It follows that in order to maintain high prestige, individuals must make appropriate behavioral decisions that will attract lower-ranking individuals who hope to learn or gain something by being associated with the higher prestige individual. Research has supported the idea that self-esteem may indicate an

individual's level of prestige. One study showed that participants with lower levels of self-esteem chose to affiliate with participants scoring significantly higher on self-esteem and that, conversely, participants with higher levels of self-esteem chose to affiliate with participants scoring significantly lower on self-esteem (Astra & Singg, 2000). Another study showed that compared to individuals with lower levels of self-esteem, individuals with higher levels of self-esteem expressed greater confidence that being friendly would result in affiliative responses from others (Baldwin & Keelan, 1999).

In addition to serving a status-tracking function that allows individuals to monitor their social standing across a variety of domains, self-esteem may also have status-signaling properties that transfer information about individuals to the social environment (Zeigler-Hill, 2010; Zeigler-Hill & Myers, 2009). As a complement to status-tracking models of self-esteem (i.e., sociometer theory; Leary & Downs, 1995), the status-signaling model of self-esteem proposes that an individual's level of self-esteem provides information to the social environment that may, in turn, influence perceptions of the individual. In other words, by sending signals to the social environment regarding their status, individuals may influence the ways in which they are perceived by those who comprise their social environment. For example, research has shown that individuals who appear to possess higher levels of self-esteem are generally viewed more positively by others on domains concerning romantic desirability (Zeigler-Hill, 2010) and political competence (Zeigler-Hill & Myers, 2009). As such, individuals may sometimes attempt to create an overly positive impression of themselves in order to take advantage of the interpersonal benefits associated with the appearance of high self-esteem.

Overview and Predictions

Despite the abundance of past research examining self-esteem, one question that has remained unanswered is whether the high levels of self-esteem some individuals claim to possess accurately reflect their authentic self-evaluations. This may be especially true for individuals who possess feelings of self-worth that – despite being overtly positive – are easily threatened (i.e., fragile self-esteem; Kernis, 2003). As such, the present study was conducted in order to improve our understanding of whether individuals with fragile high self-esteem sometimes report higher levels of self-esteem than they actually possess. In order to accomplish this goal and to improve the likelihood that individuals would answer questions about their self-worth more honestly, the present study utilized the bogus-pipeline technique (Jones & Sigall, 1971; Sigall & Page, 1971). This technique generally involves the use of physiological equipment – such as a lie detector – that ostensibly allows the researcher to know if individuals are responding truthfully or not. Therefore, it is assumed that individuals – believing that the experimenter has access to their true attitudes – will respond more honestly (Jones & Sigall, 1971; Sigall & Page, 1971). This technique has been used successfully in past research (Alexander & Fisher, 2003; Boysen, et al., 2006; Roese & Jamieson, 1993) to examine topics that may elicit a strong social desirability bias in participant responses (e.g., sexual behaviors, prejudice based on race and sexual orientation) and was used in the present study in order to gain a better understanding of the ways in which individuals feel about themselves.

It was predicted that – relative to individuals with secure high self-esteem – individuals with fragile high self-esteem would report more moderate levels of explicit self-esteem under bogus pipeline conditions. That is, it was predicted that the bogus

pipeline manipulation would break through what may be a façade of high self-esteem that these individuals use to manage the impressions that others have of them (i.e., impression management; Paulhus, 1984, 2002; Raskin et al., 1991). There are several reasons why this impression management hypothesis seemed more likely than other potential explanations (e.g., self-deception, emotional lability). First, it seemed likely that the socially desirable nature of high self-esteem may influence individuals to present themselves as if they possess high self-esteem even if they do not (Baumeister et al., 2003; Paulhus, 1984, 2002; Raskin et al., 1991). In doing so, individuals may be able to create the appearance of conforming to a valued cultural ideal and may stand to reap social benefits such as being viewed more positively by others (Zeigler-Hill & Myers, 2009). Second, it seemed likely that individuals may be interested in creating the impression of possessing high self-esteem in order to improve their lot within the social hierarchy (e.g., increased social standing, ease in finding a mate; Kirkpatrick & Ellis, 2001, 2006; Leary & Downs, 1995). Finally, it seemed that in addition to trying to manage the impressions that others have of them, individuals may be trying to manage their own impressions of themselves. According to Trivers (2000), in order to successfully deceive others, an individual must first believe his or her own "act". In reporting higher levels of self-esteem than they actually possess, individuals may be, in essence, strengthening their act by making it more believable to themselves. This may, in turn, make their act more believable to others. In putting on a convincing performance, these individuals may be more likely to achieve the dual goals of (a) convincing others that they possess the high levels of self-esteem that they say they do and (b) not being exposed as a fake. Reporting high levels of self-worth on direct measures of self-esteem –

even when they do not accurately reflect one's genuine self-evaluation – may be one way for individuals to accomplish these goals.

CHAPTER II

METHODOLOGY

Participants and Procedure for Phase One

Participants for Phase One were 449 undergraduates (76 men, 373 women) recruited from the subject pool at The University of Southern Mississippi. The mean age of participants was 22.07 years (*SD* = 5.99) and the racial/ethnic composition was 54% White, 33% Black, and 13% Other. Participants received partial fulfillment of a research participation requirement in exchange for their participation.

Participants completed internet-based measures of demographics (i.e., age, gender, racial/ethnic background, marital status), explicit self-esteem (i.e., Rosenberg Self-Esteem Scale; Rosenberg, 1965), implicit self-esteem (i.e., Name-Letter Task; Nuttin, 1985, 1987), contingent self-esteem (i.e., Contingent Self-Esteem Scale; Paradise & Kernis, 1999), and other measures that were not relevant to the present study. At the completion of the 60-minute session, participants were given instructions for completing a brief measure of state self-esteem each evening for seven consecutive days in order to create an index of self-esteem instability (Kernis et al., 1989).

Phase One Measures

Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is a widely used 10-item measure of global self-esteem (e.g., "I take a positive attitude toward myself"). Respondents were asked to provide ratings of agreement based on how they generally feel about themselves on scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Past research has demonstrated the construct validity and reliability of the RSES (Blascovich & Tomaka, 1991; Demo, 1985; Rosenberg, 1965; Silber & Tippett, 1965) with test-retest correlations ranging from .82 to

.88 and Cronbach's alphas ranging from .77 to .88 (Blascovich & Tomaka, 1991; Rosenberg, 1986). For Phase One of the present study, the internal consistency of the RSES was .88.

Name-Letter Task. The Name-Letter Task (NLT; Nuttin, 1985, 1987) is a 26-item measure of implicit self-esteem. Participants were asked to evaluate how much they like each letter of the alphabet by responding on scales ranging from 1 (*I dislike this letter very much*) to 7 (*I like this letter very much*). This measure of implicit self-esteem is based on the 'mere ownership effect' which refers to the idea that an individual's positive self-evaluations will spill over onto other self-relevant objects (Zajonc, 1968). More specifically, research has shown that individuals may tend to show a preference for the letters than represent their own initials (Nuttin, 1985, 1987). The extent to which participants evaluate their own initials more positively than other participants evaluate the same letters is thought to be indicative of implicit self-esteem. The NLT has been shown to possess acceptable levels of reliability and validity (Bosson et al., 2000; Jones, Pelham, Mirenberg, & Hetts, 2002; Koole, Dijksterhuis, & van Knippenberg, 2001; Koole & Pelham, 2003; Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999; Shimizu & Pelham, 2004). In accordance with past research (e.g., Kernis et al., 2008; Zeigler-Hill, 2006), the significant positive correlation between the preference for the first and last initial serves as a measure of internal consistency for the NLT ($r = .28$, $p < .05$).

Contingent Self-Esteem Scale. The Contingent Self-Esteem Scale (CSES; Paradise & Kernis, 1999) is a 15-item measure of general self-esteem contingency (e.g., "When my actions do not live up to my expectations, it makes me feel dissatisfied with myself"). Participants were asked to respond on scales ranging from 1 (*not at all like me*) to 5 (*very much like me*). The CSES has been shown to be a reliable and valid measure of

contingent self-esteem (Kernis & Goldman, 2006; Neighbors et al., 2004; Patrick et al., 2004). For the present sample, the internal consistency of the CSES was .73.

State self-esteem and self-esteem instability. The method for measuring self-esteem instability was adapted from the procedure developed by Kernis and his colleagues (for a review see Kernis, 2005). Participants were asked to complete a modified version of the RSES each evening at approximately 10 p.m. for 7 consecutive days via the internet. The RSES was modified to measure state self-esteem by instructing the participant to give the response that best reflected how he or she felt at the moment the form was completed. Responses were made on scales ranging from 1 (*strongly disagree*) to 10 (*strongly agree*). An index of self-esteem instability was created by evaluating the within-subject standard deviation across repeated assessments of state self-esteem such that higher standard deviations reflect higher levels of self-esteem instability. This measure has been shown to possess convergent validity with other measures of fragile self-esteem (Kernis et al., 2008). For the present sample, the significant correlation between level of self-esteem (i.e., RSES) and self-esteem instability (r = -.45, $p < .01$) is consistent with past research (e.g., Kernis et al., 1989; Kernis et al., 2008; Zeigler-Hill, 2006).

Participants and Procedure for Phase Two

All Phase One participants were invited to take part in Phase Two of the present study. Participants for Phase Two were 79 undergraduates (8 men, 71 women) with a mean age of 21.74 years (SD = 4.46). The racial/ethnic composition was 42% White, 45% Black, and 13% Other. All Phase Two participants received additional credit toward the fulfillment of a research participation requirement in exchange for their participation. Independent t-tests showed that the Phase Two sample did not significantly differ

from the Phase One sample on any of the following personality and demographic variables: Explicit Self-Esteem, t (441) = .29, *ns*; Implicit Self-Esteem, t (436) = 1.03, *ns*; Contingent Self-Esteem, t (435) = 1.41, *ns*; and Age, t (435) = .54, *ns*. However, these analyses did reveal differences between the laboratory sample and the Phase One sample on the demographic variables of race, t (94.08) = 2.45, $p < .05$, and gender, t (138.27) = 2.08, $p < .05$, such that the laboratory sample included a greater proportion of Black and female participants. Despite these differences between the Phase One and Phase Two participants, the inclusion of race and gender in the preliminary analyses did not qualify any of the results for the present study. As a result, race and gender will not be discussed further.

The first 50 Phase Two participants were randomly assigned to either the bogus pipeline or control condition. The remaining participants were assigned to these conditions based on race and gender in an effort to achieve roughly equal groups with respect to these attributes. Out of the 79 participants who completed Phase Two, there were 38 participants (3 men, 35 women) in the control condition. The racial/ethnic composition of the control condition was 45% White, 47% Black, and 8% Other. In the bogus pipeline condition, there were 41 participants (5 men, 36 women). The racial/ethnic composition of the bogus pipeline condition was 39% White, 42% Black, and 19% Other.

Preliminary analyses using the Phase Two sample of 79 participants revealed that 4 participants had extreme scores (i.e., greater than 2 standard deviations below the mean) on Phase One measures of Self-Esteem (i.e., Rosenberg Self-Esteem Scale and Name-Letter Task). As a result, these participants were excluded from the final implicit and contingent self-esteem analyses which were conducted using the remaining sample of

75 participants (7 men, 68 women). These participants had a mean age of 21.80 years (*SD* = 4.56), and the racial/ethnic composition was 43% White, 44% Black, and 13% Other. For the self-esteem instability analysis, 27 additional participants were excluded due to failure to complete three or more daily measures of state self-esteem. The remaining 48 participants (5 men, 43 women) had a mean age of 22.26 years (*SD* = 5.18) and the racial/ethnic composition was 40% White, 44% Black, and 16% Other.

Laboratory Procedure

Upon arrival at the laboratory, participants were greeted by a White female researcher wearing a standard white lab coat. Participants were also introduced to one of four White female undergraduate research assistants. After providing informed consent, participants were seated at a computer station and asked to complete the self-esteem version of the Implicit Association Test (IAT; Greenwald & Farnham, 2000).

Bogus-pipeline condition. After completing the self-esteem IAT, participants in the bogus pipeline condition were told that for the next task, they would be monitored by lie-detecting physiological equipment.[2] Participants were also informed that they would be videotaped in order to analyze their nonverbal behavior for signs of deception. The researcher then stated that the undergraduate research assistant would be monitoring the results from a computer station located directly adjacent to the laboratory and escorted each participant into a small room containing physiological testing equipment (i.e., galvanic skin response equipment, automatic blood pressure monitor, and Grass Model 78D Polygraph machine). Participants were seated in a recliner as the researcher applied electrode paste to the finger cuffs and explained the general procedure. The researcher

[2] It should be noted that no physiological measurements were actually collected or recorded in either condition.

then affixed the finger cuffs as well as a blood pressure cuff. Participants were then restrained using arm straps ostensibly to avoid any excessive movement, and the recliner was moved to the fully reclining position. Participants were then asked several questions for the ostensible purpose of checking to make sure the equipment was functioning properly. For example, participants were first asked obvious questions and instructed to respond truthfully (e.g., "What is your name?", "How old are you?"). Participants were then asked obvious questions and instructed to lie (e.g., "What color is my lab coat?", "Are you male or female?"). After each question was answered, the researcher left the room to briefly consult with the undergraduate research assistant seated at the outside computer station. After having created the impression that the physiological equipment was functioning correctly, participants were again reminded that their physiological measurements were being collected for the express purpose of assessing their potential misrepresentation of attitudes (e.g., "We will be able to tell if you are lying"). From the computer station adjacent to the laboratory, the undergraduate research assistant then started the PowerPoint presentation containing the questionnaire items. After turning the lights off and starting the video camera, the researcher sat behind the participant and used a remote presenter to control the projection of the questionnaire items directly onto the laboratory wall. Participants were then instructed to read and respond out loud to the following measures of explicit self-esteem: Rosenberg Self-Esteem Scale (Rosenberg, 1965), State Self-Esteem Scale (Heatherton & Polivy, 1991), Self-Liking/Self-Competence Scale (Tafarodi & Swann, 2001), and Self-Attributes Questionnaire (Pelham & Swann, 1989). For exploratory purposes, participants in the laboratory were also asked to respond to measures of implicit self-esteem (NLT; Nuttin, 1985, 1987) and affect (Positive and Negative Affect Scale; Watson, Clark, & Tellegen, 1988). The researcher

then recorded the responses of participants to each item on a standardized response sheet. After the measures were completed, participants were led through a funnel-style debriefing (e.g., "Did you ever have a sense that there was more to this study than we were telling you?") and thanked for their participation.

Control condition. In accordance with past research (Boysen et al., 2006), the control condition was designed to be nearly identical to the bogus pipeline procedure differing only by the nature of the cover story. More specifically, participants in the control condition were told that they would be connected to the physiological equipment in order to allow the researcher to gain practice in connecting participants to the physiological equipment and to test whether participants have any difficulty completing tasks while restrained. After successfully connecting participants to the physiological equipment, the researcher then clearly deactivated the physiological equipment (i.e., "I am turning the equipment off now") and reminded participants that their physiological data was not being collected or recorded in any way. Additionally, participants were told that the session would be videotaped for the purpose of allowing the researcher to review laboratory procedures.

Phase Two Measures

Implicit Association Test. The self-esteem Implicit Association Test (IAT; Greenwald & Farnham, 2000) assesses implicit self-esteem by engaging participants in a computerized categorization task that measures automatic associations of self-relevant (e.g., myself, mine, me) and non-self-relevant words (e.g., other, them, their) with pleasant (e.g., sunshine, smile, happy) and unpleasant words (e.g., grief, tragedy, sickness). Participants were asked to categorize target words that appeared in the center of their computer screens. There were seven blocks of trials consisting of both practice

and judgment trials in which participants were asked to make single (e.g., pleasant vs. not-pleasant) and combined categorizations (e.g., self and pleasant vs. not-self and unpleasant). Participants were asked to make both congruent (i.e., self and pleasant vs. not-self and unpleasant) and incongruent (self and unpleasant vs. not-self and pleasant) categorizations. The Inquisit computer program (Millisecond Software, 2000) controlled the random presentation of items, order of blocks, and recording of response latencies. IAT scores reflect the ease with which participants associate pleasant versus unpleasant words with the self. The IAT has been shown to possess adequate psychometric properties including acceptable test-retest reliability (Bosson et al., 2000; Greenwald & Farnham, 2000; Greenwald, Nosek, & Banaji, 2003).

Rosenberg Self-Esteem Scale. For Phase Two of the present study, the internal consistency of the RSES was .83.

State Self-Esteem Scale. The State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991) is a 20-item measure of self-esteem designed to capture momentary fluctuations in feelings of self-worth that relate to the domains of performance (e.g., "At this moment, I feel frustrated or rattled about my performance"), social (e.g., "At this moment, I feel that others respect and admire me"), and appearance self-esteem (e.g., "At this moment, I feel unattractive"). Respondents were asked to provide ratings of agreement based on their present feelings on scales ranging from 1 (*not at all*) to 5 (*extremely*).The SSES has been shown to be a valid and reliable measure of state self-esteem (Heatherton & Polivy, 1991). For the present sample, the internal consistency of the SSES was high (α = .89).

Self-Liking/Self-Competence Scale. The Self-Liking/Self-Competence Scale (SLSC; Tafarodi & Swann, 2001) is a 16-item measure of global self-esteem that

captures the domains of self-liking (e.g., "I feel great about who I am") and self-competence (e.g., "I perform very well at many things"). Respondents were asked to provide ratings of agreement on scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The SLSC has been shown to possess adequate psychometric properties including convergent and discriminant validity (Tafarodi & Swann, 2001). For the present sample, the internal consistency of the SLSC was .89.

Self-Attributes Questionnaire. The Self-Attributes Questionnaire (SAQ; Pelham & Swann, 1989) is a 24-item measure of self-attributes consisting of three subscales (i.e., self-attributes, ideal attributes, and personal importance of attributes). The present study utilized the first subscale of 8-items designed to assess attitudes regarding personal activities and abilities (e.g., common sense, social skills/social competence). Respondents were asked to rate themselves relative to other students of their sex and age on scales ranging from 0 (*way below average*) to 9 (*way above average*). For the present sample, the internal consistency of the SAQ was .70.

Laboratory session composite of explicit self-esteem. A total explicit self-esteem composite score was created to serve as a total measure of explicit self-esteem during the laboratory session.[3] In order to create the composite, standardized values were obtained for the score totals of the RSES, SSES, SLSC, and SAQ (rs > .42, p < .001). A mean score was then calculated with higher scores reflecting higher Phase Two Explicit Self-Esteem (α = .80).

[3]Analyses predicting the RSES alone were consistent with the results obtained using the total composite measure of explicit self-esteem.

CHAPTER III

RESULTS

Table 1 presents the descriptive statistics, internal consistency coefficients, and intercorrelations for the measures in the present study.

Table 1

Intercorrelations and Descriptive Statistics for Explicit Self-Esteem Level (Phase One), Implicit Self-Esteem, Contingent Self-Esteem, Self Esteem Instability, and Explicit Self-Esteem Level (Phase Two).

	1	2	3	4	5	6
1. Explicit S.E. (Phase One)	—	.31	.12	-.56***	-.53**	.43**
2. Implicit S.E. (NLT)	.25	—	-.22	.00	-.16	.20
3. Implicit S.E. (IAT)	.25	-.33	—	.03	-.05	.13
4. Contingent S.E.	-.58***	-.12	-.02	—	.47*	-.29
5. S.E. Instability	-.36*	.05	-.16	.22	—	-.29
6. Explicit S.E. (Phase Two)	.55***	.26	.27	-.12	-.04	—
Control (*N*=36)						
M	4.08	3.16	.90	3.25	.43	.20
SD	.70	1.80	.48	.56	.29	.75
Minimum	2.80	-1.50	.07	1.93	.00	-1.47
Maximum	5.00	5.50	1.70	4.40	1.06	1.47
Bogus Pipeline (*N*=39)						
M	3.99	2.35	.96	3.24	.54	-.06
SD	.70	1.80	.42	.53	.34	.74
Minimum	2.70	-1.57	-.02	2.20	.08	-1.43
Maximum	5.00	5.06	1.71	4.47	1.13	1.54

*$p < .05$; **$p < .01$; ***$p < .001$.

Note. The intercorrelations are presented above (Bogus Pipeline) and below (Control) the diagonal for each experimental condition.

Data Analytic Strategy

A series of hierarchical multiple regressions were performed to examine whether fragile self-esteem would moderate explicit self-esteem level during the laboratory session. In order to independently examine the effects for each marker of self-esteem fragility, separate regressions were performed for each marker of fragile self-esteem in the present study (i.e. implicit self-esteem, contingent self-esteem, and self-esteem instability). For each of these analyses, the continuous predictors were first centered on their respective means (Aiken & West, 1991). On Step 1 of these analyses, the following variables were entered: experimental condition (0 = control, 1 = bogus pipeline), explicit self-esteem level (Phase One) and fragility marker score. The two-way interactions of the main effect terms were entered on Step 2 and the three-way interaction was entered on Step 3. These regression analyses were followed by the simple slopes tests recommended by Aiken and West (1991) in order to examine the patterns of the interactions emerging from these analyses.

Implicit Self-Esteem

Tables 2 and 3 present the results for the analyses examining the moderating role of implicit self-esteem in conjunction with Phase One self-esteem and experimental condition on Phase Two self-esteem. Due to the lack of convergence between the two measures of implicit self-esteem used in the present study ($r = -.28$, $p < .05$), a separate regression analysis was performed for each measure. The results for the NLT analysis are presented in Table 2, and the results for the IAT analysis are presented in Table 3.

Table 2

Analysis Regressing Explicit Self-Esteem (Phase Two) onto Experimental Condition, Explicit Self-Esteem (Phase One), and Implicit Self-Esteem as Measured by the Name-Letter Task.

	Explicit Self-Esteem (Phase Two)		
	Cumulative R^2	Increase in R^2	β
Step 1	.27***	.27***	
Condition			-.12
Explicit S.E. (Phase One)			.45***
Implicit S.E. (NLT)			.10
Step 2	.28**	.01	
Condition x Explicit S.E. (Phase One)			-.08
Condition x Implicit S.E. (NLT)			-.04
Explicit S.E. (Phase One) x Implicit S.E. (NLT)			.02
Step 3	.37***	.09**	
Condition x Explicit S.E. (Phase One) x Implicit S.E. (NLT)			.46**

*$p < .05$; **$p < .01$; ***$p < .001$.

Name-Letter Task

For this analysis, a main effect emerged for Phase One explicit self-esteem (β = .45, $p < .001$) such that individuals with higher levels of explicit self-esteem during Phase One of the study were more likely to report higher levels of explicit self-esteem during Phase Two of the study. This main effect for self-esteem was qualified by the three-way interaction between experimental condition, explicit self-esteem (Phase One) and NLT (β = .46, $p < .01$). The predicted values for this interaction are shown in Figure 1. Simple slopes tests indicated that participants in the bogus pipeline condition were more likely to report lower levels of explicit self-esteem during the laboratory session when they possessed high levels of explicit self-esteem at Phase One in conjunction with low levels

of implicit self-esteem (β = .51, $p < .05$). In other words, participants with fragile high self-esteem tended to report lower levels of explicit self-esteem when they believed that the researcher had access to their true feelings. As further evidence of this effect, simple slopes tests revealed that in comparison to the control condition, individuals with discrepant high self-esteem were more likely to report lower levels of self-esteem in the bogus pipeline condition (β = -.62, $p < .05$). The remaining slopes failed to reach conventional levels of significance (βs < .32, *ns*).

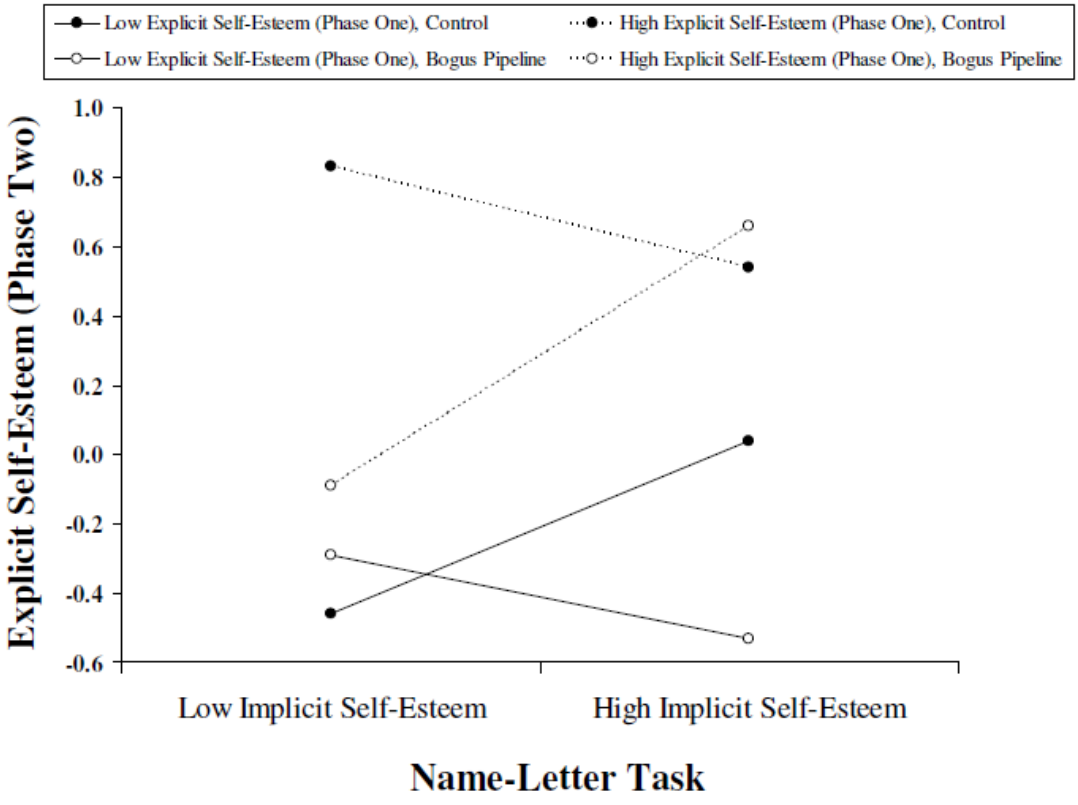

Figure 1. Name-Letter Task.

Note. Adjusted predicted values for explicit self-esteem level (Phase Two), illustrating the three-way interaction of experimental condition, explicit self-esteem (Phase One), and NLT at values that are one standard deviation above and below their respective means.

Table 3

Analysis Regressing Explicit Self-Esteem (Phase Two) onto Experimental Condition, Explicit Self-Esteem (Phase One), and Implicit Self-Esteem as Measured by the Implicit Association Test.

	Explicit Self-Esteem (Phase Two)		
	Cumulative R^2	Increase in R^2	β
Step 1	.27***	.27***	
Condition			-.15
Explicit S.E. (Phase One)			.46***
Implicit S.E. (IAT)			.11
Step 2	.28**	.01	
Condition x Explicit S.E. (Phase One)			-.09
Condition x Implicit S.E. (IAT)			-.03
Explicit S.E. (Phase One) x Implicit S.E. (IAT)			.05
Step 3	.36***	.08**	
Condition x Explicit S.E. (Phase One) x Implicit S.E. (IAT)			-.39**

*$p < .05$; **$p < .01$; ***$p < .001$.

Implicit Association Test

The results of this analysis also indicated a main effect for Phase One explicit self-esteem (β = .46, $p < .001$) which was qualified by the three-way interaction between experimental condition, explicit self-esteem (Phase One) and IAT (β = -.39, $p < .01$). The predicted values for this interaction are shown in Figure 2. In contrast to the results for the NLT, the simple slopes tests for the IAT indicated that participants in the control condition tended to report higher levels of explicit self-esteem during the laboratory session when they possessed high levels of explicit self-esteem at Phase One in conjunction with high levels of implicit self-esteem (β = .47, $p < .05$). These results are not surprising in that they reflect highly positive feelings of self-worth for participants

with secure high self-esteem in the control condition. Simple slopes tests also indicated a significant difference between the control and bogus pipeline conditions for these individuals ($\beta = -.50$, $p < .05$) such that individuals with secure high self-esteem were more likely to report higher levels of explicit self-esteem in the control condition. The remaining slopes failed to reach conventional levels of significance ($\beta s < .33$, *ns*).

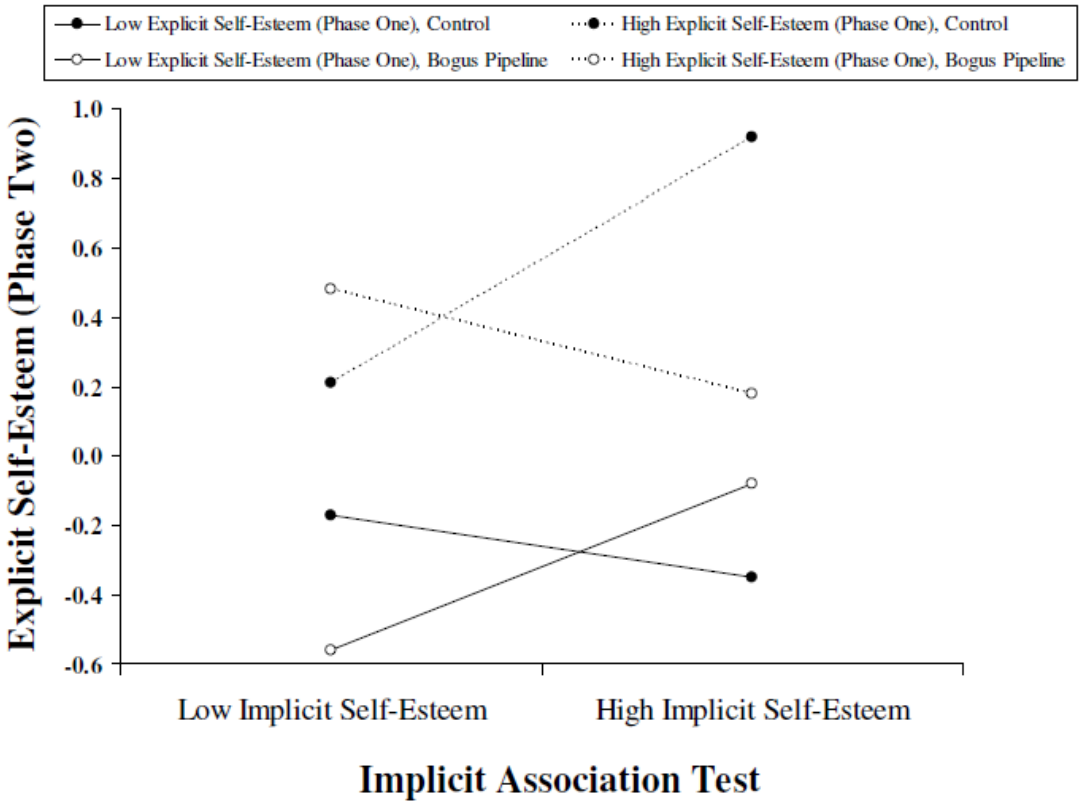

Figure 2. Implicit Association Test.

Note. Adjusted predicted values for explicit self-esteem level (Phase Two), illustrating the three-way interaction of experimental condition, explicit self-esteem (Phase One), and IAT at values that are one standard deviation above and below their respective means.

Contingent Self-Esteem

Table 4 presents the results for the analysis examining the moderating role of contingent self-esteem in conjunction with Phase One self-esteem and experimental condition on Phase Two self-esteem. A main effect emerged for self-esteem ($\beta = .54$, $p < .001$) such that individuals with higher levels of self-esteem during Phase One of the study were more likely to report higher levels of self-esteem during Phase Two of the study. This main effect was qualified by the emergence of a two-way interaction between self-esteem and contingent self-esteem ($\beta = -.21$, $p < .05$). Simple slopes tests revealed that contingent self-esteem was positively associated with explicit self-esteem during the laboratory session among individuals with low Phase One self-esteem ($\beta = .37$, $p < .06$).

Table 4

Analysis Regressing Explicit Self-Esteem (Phase Two) onto Experimental Condition, Explicit Self-Esteem (Phase One), and Contingent Self-Esteem.

	Explicit Self-Esteem (Phase Two)		
	Cumulative R^2	Increase in R^2	β
Step 1	.27***	.27***	
Condition			-.14
Explicit S.E. (Phase One)			.54***
Contingent S.E.			.10
Step 2	.34***	.07	
Condition x Explicit S.E. (Phase One)			-.28
Condition x Contingent S.E.			-.31
Explicit S.E. (Phase One) x Contingent S.E.			-.21*
Step 3	.34***	.00	
Condition x Explicit S.E. (Phase One) x Contingent S.E.			.02

*$p < .05$; **$p < .01$; ***$p < .001$.

For individuals with high Phase One self-esteem, the association between contingent self-esteem and explicit self-esteem during the laboratory session did not approach conventional levels of significance (β = -.04, *ns*). There were no further significant findings for the contingent self-esteem analysis.

Self-Esteem Instability

Table 5 presents the results for the analysis examining the moderating role of self-esteem instability in conjunction with Phase One self-esteem and experimental condition on Phase Two self-esteem. The self-esteem instability analysis revealed a main effect for participants' level of self-esteem at Phase One was a strong indicator of their self-esteem level at Phase Two. The self-esteem instability analysis yielded no further results.

Table 5

Analysis Regressing Explicit Self-Esteem (Phase Two) onto Experimental Condition, Explicit Self-Esteem (Phase One), and Self-Esteem Instability.

	Explicit Self-Esteem (Phase Two)		
	Cumulative R^2	Increase in R^2	β
Step 1	.35***	.35***	
Condition			-.23
Explicit S.E. (Phase One)			.57***
S.E. Instability			.09
Step 2	.38**	.03	
Condition x Explicit S.E. (Phase One)			.02
Condition x S.E. Instability			-.21
Explicit S.E. (Phase One) x S.E. Instability			-.17
Step 3	.40**	.02	
Condition x Explicit S.E. (Phase One) x S.E. Instability			.33

*$p < .05$; **$p < .01$; ***$p < .001$.

CHAPTER IV

DISCUSSION

Summary

The present study found partial support for the prediction that individuals with fragile high self-esteem are engaging in impression management when they report highly positive feelings of self-worth. In support of the impression management hypothesis, individuals with discrepant high self-esteem (i.e., high explicit self-esteem and low implicit self-esteem) reported lower levels of explicit self-esteem under bogus pipeline conditions. However, it is important to note that this pattern only emerged when implicit self-esteem was measured using the Name-Letter Task. The impression management hypothesis was not supported when implicit self-esteem was measured using the Implicit Association Test. In addition, the predicted pattern of results was not found for the two other markers of self-esteem fragility (i.e., contingent self-esteem and self-esteem instability).

It was predicted that self-esteem fragility would moderate explicit self-esteem level in the laboratory. More specifically, it was predicted that – compared to individuals who possessed *secure* high self-esteem – individuals who possessed *fragile* high self-esteem would be more likely to report lower levels of explicit self-esteem in the bogus pipeline condition. This prediction was supported by the interaction between experimental condition, Phase One explicit self-esteem, and NLT such that individuals with discrepant high self-esteem reported significantly lower levels of explicit self-esteem in the bogus pipeline condition. This finding is interesting in that it suggests that individuals with discrepant high self-esteem (i.e., high explicit but low implicit) may be engaging in impression management when they claim to possess highly positive feelings

of self-worth. In doing so, individuals may stand to gain some of the benefits that are associated with the possession of high self-esteem such as being viewed more positively by others (Zeigler-Hill & Myers, 2009) and increased social standing (Leary & Downs, 1995).

If it is the case that individuals with fragile high self-esteem are intentionally reporting higher levels of explicit self-esteem than they may actually possess, then it follows that these individuals must have at least some access to their presumed-to-be implicit self-esteem. This finding contradicts the commonly held assumption that nonreactive measures of self-esteem are capturing attitudes that exist outside of conscious awareness (Greenwald & Banaji, 1995; Jordan et al., 2007; Pelham & Hetts, 1999; Zeigler-Hill & Jordan, in press) and is consistent with recent research that has questioned this assumption (Fazio & Olson, 2003; Olson et al., 2007; Karpinski & Steinberg, 2006; Krizan, 2008). For example, it has been suggested that measures purporting to capture implicit self-esteem may instead capture a combination of implicit and explicit self-esteem (Karpinski & Steinberg, 2006) or wholly explicit self-esteem (Krizan, 2008). For instance, Krizan (2008) found many participants to be aware of the self-relevant nature of the NLT such that many participants reported recognizing their initials during the NLT. Further, Krizan (2008) reported that these individuals were also more likely to report that their letter ratings during the NLT were influenced by how much they liked their names. Also supporting the contention that individuals have access to their implicit self-esteem, Olson and colleagues (2007) reported that the discrepancy between individuals' explicit and implicit self-esteem diminished when individuals were asked to be careful not to over-report or under-report their explicit feelings of self-worth. In other words, Olson and colleagues contend that individuals have knowledge of their implicit self-esteem but

sometimes over- or under-report it as a self-presentational strategy. Taken together, these recent findings – along with the results of the present study – support the contention that the attitudes captured by some measures of implicit self-esteem may not wholly exist outside of conscious awareness.

In contrast to the results for the NLT, the predicted pattern of results did not emerge when implicit self-esteem was measured using the IAT. That is, individuals who possessed discrepant high self-esteem were *not* more likely to report lower levels of explicit self-esteem in the bogus pipeline condition. Instead, a significant interaction emerged between experimental condition, Phase One explicit self-esteem, and IAT such that individuals with secure high self-esteem reported significantly higher levels of explicit self-esteem in the control condition. This interaction may simply reflect the unchecked and highly positive feelings of self-worth that individuals with secure high self-esteem may have experienced in the control condition (Baumeister et al., 1989). In other words, individuals who possessed secure high self-esteem in the control condition may have reveled in the opportunity to affirm positive views of the self. In contrast, individuals with secure high self-esteem in the bogus pipeline condition were reminded to think very carefully about accurately reporting their feelings of self-worth. As a result, these individuals may have simply adopted a more modest self-presentation by toning down their highly positive self-evaluations.

The divergent outcomes for the NLT and IAT raise the following question: Why did self-esteem fragility moderate explicit self-esteem level in the laboratory when implicit self-esteem was measured with the NLT but not with the IAT? In order to understand why two measures that purport to measure the same underlying construct would produce divergent outcomes in the present study, it may be helpful to examine the

two measures in terms of their psychometric properties. First, it is worth noting again that the measurement of implicit self-esteem has been controversial and plagued with inconsistencies since its inception with various measures of implicit self-esteem typically having little or no correlation with each other (Bosson et al., 2000; Gebauer, Riketta, Broemer, & Maio, 2008; Zeigler-Hill, 2006). This general lack of convergent validity between measures of implicit self-esteem has always been problematic, but even more troubling for the present study is that – despite sharing similar positive correlations with explicit self-esteem – the NLT and the IAT were negatively correlated with each other.

There are at least two potential reasons for finding an unexpected relationship between the NLT and IAT. The first potential explanation concerns the possibility that implicit self-esteem may be fluid in nature. This idea is supported by research showing IAT scores to be responsive to perceived threats (Rudman, Dohn, & Fairchild, 2007) and negative daily events (Dehart & Pelham, 2007) as well as by the low test-retest correlations that are typically found for implicit self-esteem measures (e.g., Zeigler-Hill & Jordan, in press). If it is the case that implicit self-esteem is fluid in nature – and therefore reactive to immediate context – then it may not be surprising to find an unexpected relationship between measures that were administered at different times and under different conditions. For example, in the present study, the NLT was administered online during Phase One of the study whereas the IAT was administered in the laboratory during Phase Two of the study. As such, it is possible that the laboratory setting may have been disconcerting for some participants compared to the relative comfort of the online environment.

The second potential explanation for the unusual relationship between the NLT and IAT is the possibility that the NLT and IAT are capturing either different facets of

implicit self-esteem or completely different underlying constructs. This idea has been supported by recent research demonstrating the multifaceted nature of implicit self-esteem (Campbell et al., 2007; Sakellaropoulo & Baldwin, 2007). For example, Campbell and colleagues (2007) reported that IAT scores for some individuals vary depending on whether the word primes used in the IAT task reflect communal or agentic self-views. Similarly, Sakellaropoulo and Baldwin (2007) suggest that implicit self-esteem should be examined in terms of the domains of self-liking and self-attractiveness. The idea that different measures of implicit self-esteem may capture different facets of implicit self-esteem is consistent with at least one other previous study where results were reported for both the NLT and IAT. In that study, Zeigler-Hill (2006) found that the IAT – but not the NLT – predicted self-esteem instability. Due to the lack of additional studies that have incorporated multiple measures of implicit self-esteem, it remains unclear whether finding different outcomes for the NLT and IAT in the present study is something that should be considered unusual or something that is par for the course given the lack of convergent validity between measures of implicit self-esteem.

Another question raised by the present results concerns the lack of convergence across markers of fragile self-esteem. In other words, why did self-esteem fragility moderate explicit self-esteem level in the laboratory for discrepant high self-esteem but not for contingent self-esteem or self-esteem instability? This lack of convergence across fragility markers is inconsistent with research that has begun to find relationships between and convergence across the markers of self-esteem fragility (Jordan et al., 2003; Kernis et al., 2008; Zeigler-Hill, 2006). For example, some research has shown that low implicit self-esteem predicts greater self-esteem instability (Zeigler-Hill, 2006). More recently, Kernis and colleagues (2008) reported finding significant correlations between

measures of contingent self-esteem and self-esteem instability in their laboratory as well as a recent study linking all three markers of self-esteem to verbal defensiveness. Given these recent findings, it was expected that the present study would result in some manner of convergence between the three markers of fragile self-esteem.

One potential explanation for the different results for the three markers of fragility may come from the fact that all of the fragility markers in the present study did not share significant correlations. In contrast, when all three markers of fragility recently converged to predict verbal defensiveness, it was the case that all three fragility markers were also significantly correlated with each other (Kernis et al., 2008). Despite using the same measures employed by Kernis and colleagues (2008), the present study did not find all three fragility markers to be significantly correlated. Instead, the results for the present study only indicated a significant correlation between contingent self-esteem and self-esteem instability. These results may be due – at least in part – to the relatively small sample size and resulting lack of statistical power in the present study. Another potential explanation for the lack of convergence between markers of fragile self-esteem may stem from the degree of "honesty" required of participants for each marker of fragile self-esteem. In other words, implicit self-esteem – which is measured indirectly – requires the least amount of insight from participants. In contrast, contingent self-esteem and self-esteem instability require more honest introspection in order for participants to accurately report their feelings. This may, perhaps, explain why the predicted effect was found for implicit self-esteem but not for contingent self-esteem and self-esteem instability. Again, given the lack of studies that have included all three markers of fragility, it is difficult to say whether these results should be considered unusual.

Limitations and Future Directions

It is important to acknowledge several limitations associated with the present study. The first limitation is that the sample was primarily comprised of college students. As a result, the results obtained may not generalize to more mature populations. The second limitation is that the sample primarily consisted of female participants. This is reflective of the low participation rates of men in laboratory-based research studies and is consistent with the characteristics of the sample used in recent fragile self-esteem research as reported by Kernis and colleagues (2008). The third limitation is the relatively small sample size obtained for the present study which may have resulted in a lack of statistical power. This limitation is reflective of the difficulty in recruiting participants for laboratory-based studies. Although the null results for contingent self-esteem and self-esteem instability did not remotely approach significance in the present study, increasing the sample size in future studies may be helpful in order to rule out the possibility that sample size alone was responsible for the lack of significant findings for contingent self-esteem and self-esteem instability. The fourth limitation is that the present study relied solely on self-report measures, leaving open the possibility of positive or negative response bias.

The results of the present study suggest several directions for future research. Most importantly, more research is needed to corroborate the present finding that seems to suggest that individuals with discrepant high self-esteem are engaging in impression management when they claim to possess highly positive feelings of self-worth. If it can be established that impression management strategies are being used by individuals with fragile high self-esteem, then it would be interesting to investigate the potential real-world implications of this behavior for these individuals. Second, more studies should

include multiple measures of implicit self-esteem in an effort to help elucidate the construct of implicit self-esteem. For example, if more studies included multiple measures of implicit self-esteem, researchers could compare findings across the different measures. This would be helpful in the refinement of the construct of implicit self-esteem and could help to clarify some of the confusion surrounding the measurement of implicit self-esteem. Finally, it would be helpful if more studies of fragile self-esteem examined all three markers of fragility in order to ascertain whether they consistently predict similar outcomes.

Conclusion

In conclusion, the present study contributes to our knowledge of self-esteem by (a) finding partial support for the prediction that individuals with fragile high self-esteem are engaging in impression management when they report highly positive feelings of self-worth and (b) shedding light on the problem of non-convergence between different measures of implicit self-esteem and between the three markers of fragile self-esteem. In support of the impression management hypothesis, individuals with discrepant high self-esteem (i.e., high explicit self-esteem and low implicit self-esteem) reported lower levels of explicit self-esteem under bogus pipeline conditions, a pattern which emerged when implicit self-esteem was measured using the NLT but not with the IAT. In addition, the predicted pattern of results was not found for contingent self-esteem or for self-esteem instability.

APPENDIX

INSTITUTIONAL REVIEW BOARD APPROVAL FORM

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

118 College Drive #5147
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HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE
NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months. Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **29080302**
PROJECT TITLE: **Personality F09**
PROPOSED PROJECT DATES: **08/19/09 to 07/31/10**
PROJECT TYPE: **Dissertation or Thesis**
PRINCIPAL INVESTIGATORS: **Erin M. Myers**
COLLEGE/DIVISION: **College of Education & Psychology**
DEPARTMENT: **Psychology**
FUNDING AGENCY: **N/A**
HSPRC COMMITTEE ACTION: **Expedited Review Approval**
PERIOD OF APPROVAL: **08/03/09 to 08/02/10**

Lawrence A. Hosman — 8-06-09

Lawrence A. Hosman, Ph.D.
HSPRC Chair

Date

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