

AVOIDANCE OF SELF-AWARENESS FOLLOWING EGO THREAT IN PEOPLE WITH
DEFENSIVE AND CONTINGENT HIGH SELF-ESTEEM

Stefanie Linnan

Thesis Submitted in Partial Fulfillment of the Requirements
for the Bachelor of Arts Degree at Hamilton College

May 6, 2011

Advisor: Jennifer Borton

Abstract

Past research has shown that people with defensive and contingent high self-esteem often employ a variety of defense mechanisms to diminish ego threats resulting from discrepancies between their actual and ideal selves. In the present study, it was hypothesized that avoidance of self-awareness might be another such defense mechanism that people with these self-esteem subtypes use. Participants received false positive or negative feedback on a “flexible thinking” task; their eye movements were then tracked as they viewed photographs of themselves and others. I expected that, following negative feedback, individuals with defensive and contingent high self-esteem would fixate less on photographs of themselves relative to photographs of others. Consistent with the hypothesis, individuals with contingent high self-esteem did avoid self-awareness following ego threat; however, individuals with defensive self-esteem did not. More research is necessary to better understand the situations in which people with defensive self-esteem avoid self-awareness.

Avoidance of Self-Awareness Following Ego Threat in People with Defensive and
Contingent High Self-Esteem

Consider a professional man in a high-stress job. Having worked for many years to reach his current position, this man prides himself on his success at work and believes himself to have a highly coveted skill-set relative to his co-workers. He is not modest about his accomplishments and has treated his friends and family to dinner in celebration of his professional triumphs on more than one occasion. Nonetheless, in a recent annual performance review, his boss expresses disappointment at slow progress on a current project. If the project is not completed efficiently and successfully in a month's time, the man's yearly bonus might be at stake. Upon leaving his boss, the man promptly returns to his office, slams the door, and calls his wife to inform her that he is working for an incompetent fool.

In view of this man's previous track record of professional success and demonstrated awareness of his own talents, both of which suggest he has high self-esteem, his strong negative reaction to his boss's criticism seems surprising. However, recent investigations into self-esteem have shown that some people who would otherwise appear to have high self-esteem respond defensively to ego threats. Such adverse reactions are the result of discrepant levels of two different dimensions of self-esteem, explicit and implicit, that often have interactive effects on a person's behavior and self-concept. Both explicit and implicit self-esteem consist of positive or negative attitudes that people hold about themselves, but the explicit dimension concerns people's conscious self-esteem, whereas the implicit dimension concerns people's unconscious self-esteem. Until very recently, researchers considered explicit self-esteem to be the sole determining factor in whether or not a person had high or low self-esteem.

Explicit Self-Esteem

Decades of studies have revealed that people with low explicit self-esteem differ in many respects from those with high explicit self-esteem. People with low explicit self-esteem are somewhat more likely to be juvenile delinquents or victims of bullying; have fewer interpersonal successes, higher depression rates, and higher prevalence of eating disorders; and display antisocial tendencies (Baumeister, Campbell, Krueger, & Vohs, 2003). In contrast, high explicit self-esteem correlates weakly with better job performance, good long-term health, and the ability to cope with stressful situations (Baumeister et al., 2003). People with high explicit self-esteem are also significantly more likely to persist in the face of failure, and they report being significantly happier and more confident in their abilities compared with people with low explicit self-esteem (Baumeister et al., 2003).

Though high explicit self-esteem has been shown to correlate positively with a variety of favorable outcomes, studies reveal that there are some important drawbacks to elevated levels of self-esteem. In general, people with high explicit self-esteem report having greater intelligence, physical attractiveness, and social skills compared with an average person; however, analysis of intelligence tests or performance in similar problem-solving tasks as well as physical attractiveness and interpersonal success ratings from peers reveal that people with high explicit self-esteem tend to grossly overestimate themselves (Baumeister et al., 2003). This overconfidence in their abilities can lead to unrealistic optimism and impossibly high expectations for future success. Driven by their skewed beliefs about their abilities, people with high explicit self-esteem may persist after failure in an attempt to achieve goals that are, in fact, unattainable. Such inaccurate views of self can be debilitating when repeated failures challenge a person's self-concept.

Measures of Explicit Self-Esteem

Though explicit self-esteem research has yielded much data regarding attitudes toward the self and the possible effects thereof, such studies are inherently problematic because the methodology used to assess explicit self-esteem relies primarily on self-report measures. These measures most often take the form of surveys, such as the well-known *Rosenberg Self-Esteem Scale*, in which participants use a Likert-type scale to rate the extent to which they agree with declarative statements about the self (e.g., “I feel that I have a number of good qualities”) (Rosenberg, 1965). Because of the transparent nature of self-report measures, it is easy for people to guess that the survey gauges self-esteem. As a result, people often engage in impression management, responding in a manner that casts them in a better light than more accurate responses might. Self-esteem studies that rely solely on these falsified self-reports would result in data that inaccurately predict true attitudes toward the self and related behavior.

Another problem with studies that use only self-report measures is that people may not be aware of their attitudes toward the self. Thus, their responses do not reflect their true assessment of their own self-worth, because some dimensions of their self-esteem are inaccessible to conscious thought (Greenwald, McGhee, & Schwartz, 1998). This problem with self-report measures led researchers to consider the existence of implicit, or unconscious attitudes toward the self, and more recent studies have used both explicit and implicit measures to assess self-esteem.

Measures of Implicit Self-Esteem

Measures of implicit self-esteem solve both of the problems noted above. First, they reduce impression management because it is often difficult for people to determine exactly what an implicit measure is assessing, and so cannot alter their responses to enhance themselves.

Second, they are able to assess attitudes of which people may not even be aware. Though many different types of implicit measures exist, two are most commonly used in studies of self-esteem. The first involves initials preferences. Participants rate each letter of the alphabet according to how pleasing they feel it is. Research has shown that people with high implicit self-esteem are more likely to rate letters that appear in their own name, especially first and last initials, as significantly more pleasing than others rate them (Bosson, Brown, Zeigler-Hill, & Swann, 2003). Likewise, participants with low implicit self-esteem rate their own initials as significantly less pleasing than others do.

Though initials-preferences measures have been validated (Bosson, Swann, & Pennebaker, 2000), the most widely used measure of implicit self-esteem is the Implicit Association Test (IAT; Greenwald & Farnham, 2000). This test requires that participants categorize stimuli that appear one at a time in the center of a computer screen as one of two target concepts (e.g., *self* vs. *other*) or attributes (e.g., *pleasant* vs. *unpleasant*) using one key on each side of the keyboard (e.g., “d” and “k”). Target-concept and attribute categories are paired (e.g., *self/unpleasant*, *other/pleasant*) and mapped on these two computer keys that correspond with the left and right side of the screen. For example, in one test block, *self/unpleasant* would appear on the left side of the screen, and participants would categorize all stimuli relevant to *self* and *unpleasant* using the “d” key. Likewise, *other/pleasant* would appear on the right side of the screen, and participants would categorize all stimuli relevant to *other* and *pleasant* using the “k” key. If participants struggle with a certain mapped pair, as evidenced by significantly longer response latencies, it is likely that the two categories are incompatible with their implicit attitudes. Thus, people who struggle to categorize *self*- and *pleasant*-related stimuli on the same side of the screen and using the same key have low implicit self-esteem.

The variety of measures available through which researchers can examine implicit and explicit self-esteem allows researchers to gain a more thorough understanding of a person's true attitudes toward the self. Presently, self-esteem is no longer classified as simply high or low. Instead, both implicit and explicit dimensions of self-esteem must be considered, resulting in multiple self-esteem classifications: secure high (high explicit, high implicit), low (low explicit, low implicit), damaged (low explicit, high implicit), and defensive (high explicit, low implicit). Disparities between explicit and implicit self-esteem, as in the cases of damaged or defensive self-esteem, are known as discrepant self-esteem subtypes.

Defensive self-esteem can also be defined as high explicit self-esteem and high scores on the *Defensive Self-Enhancement Scale*, which assesses how willing people are to admit they have ever experienced disagreeable feelings or acted in an undesirable manner (O'Brien & Epstein, 1988). High scores on the *Defensive Self-Enhancement Scale* indicate exaggeratedly high feelings of self-worth and beliefs of invulnerability to natural human weaknesses. Such responses are fueled by a need for social desirability; people with defensive self-esteem often enhance themselves in an unrealistic manner in order to garner approval from others. The *Defensive Self-Enhancement Scale* measures this tendency to act defensively in response to items about undesirable behaviors or feelings, and high scores are a good indicator of defensive self-esteem when paired with high explicit self-esteem.

Correlates of Defensive Self-Esteem

People with defensive self-esteem often share certain character traits and tendencies that result from their constant need to re-affirm their feelings of self-worth. Specifically, people with defensive self-esteem tend to exhibit narcissism and commonly display a self-presentation bias.

Narcissism. Defensive self-esteem is correlated with narcissism, most commonly expressed through a need for social desirability, an exaggeration of abilities, a feeling that one is somehow unique compared with one's peers, and other feelings of grandiosity. Narcissism is often measured through self-report surveys, such as the Narcissistic Personality Inventory (Raskin & Hall, 1979), in which participants must choose the statements that best describe them from among a series of pairs (e.g., "I have a natural talent for influencing people" vs. "I am not good at influencing people"). Although some degree of narcissism is natural for all humans, people with defensive self-esteem usually demonstrate unusually high levels compared with people with secure self-esteem.

Social desirability is a significant element of narcissism because it reflects people's need for approval. Unlike people with secure high self-esteem, people with defensive self-esteem need constant affirmation of their self-concept both from themselves and from their peers. In an extensive factor analysis of explicit measures of self-esteem, narcissism, and defensive self-enhancement – which included measures of social desirability – studies have shown that people with defensive self-esteem have a significantly higher need for approval than do people with congruent self-esteem (Raskin, Novacek, & Hogan, 1991).

In addition to having a need for social desirability, people with defensive self-esteem usually display high levels of narcissistic grandiosity, suggesting that they tend to identify more with their ideal self than their actual self (Raskin et al., 1991). Explicit measures of grandiosity examine the extent to which people's actual selves are congruent with their ideal selves (Raskin et al., 1991). Measures can range from surveys to adjective checklists in which participants indicate words from a standardized list that describe their actual and ideal selves; if participants describe these two selves with many of the same adjectives, grandiosity levels are high and,

usually, so is explicit self-esteem (Raskin et al., 1991). This skewed self-view reflects the deceptive, unrealistic optimism that is characteristic of high explicit self-esteem.

Often, narcissism can extend to include members of one's ingroup; because one associates with a particular group, presumably one shares some similar traits or abilities with one's peers. A tendency to identify with favored ingroup members simply reaffirms one's own positive traits. Sometimes these narcissistic projections occur on an unconscious level. Zuber (1981) found that people with defensive self-esteem who viewed brief flashes of classmates' photographs (20 ms) were significantly more likely to mistakenly identify friends and admirable classmates as themselves. Thus, narcissism among people with defensive self-esteem has been examined on both explicit (e.g., Narcissistic Personality Inventory) and implicit (e.g., Zuber, 1981) levels.

Self-presentation bias. People with defensive self-esteem also attempt to present themselves in a flattering light. As with narcissism, researchers have developed surveys to measure self-presentation bias, but studies have also focused on more subjective measures such as essays about the self (Schneider & Turkat, 1975). People with defensive self-esteem often self-enhance even when no ego threat is present. Recent research has shown that, relative to people with secure self-esteem, people with defensive self-esteem have a stronger presentation bias in general and are significantly more likely to report being closer to their ideal self (Bosson et al., 2003). In one study, participants were asked to read four personality profiles (very flattering, moderately flattering, moderately unflattering, very unflattering) as if they had been written about themselves; participants with defensive self-esteem rated the flattering profiles as being significantly more accurate (Bosson et al., 2003). This tendency to exaggerate positive

personality traits and behaviors even when there is no clear need to self-enhance indicates a continually present self-presentation bias among people who have defensive self-esteem.

Effects of Defensive Self-Esteem Following Ego Threat

Because people with defensive self-esteem have high levels of narcissistic grandiosity and are more likely to identify with their ideal self than their actual self, anything that serves as a reminder of the differences between their ideal and actual selves – that is, anything that makes salient the discrepancies in their self-concept – is viewed as an ego threat. Ego threats can come in many forms, including personal failures to reach goals or criticism from peers. People with defensive self-esteem, more so than those with other self-esteem subtypes, react adversely to ego threats and employ a variety of defense mechanisms to protect themselves against such threats and reaffirm their precarious self-concept.

Self-enhancement. Given that people with defensive self-esteem have a high self-presentation bias, it is not surprising that they use self-enhancement as a defensive mechanism for reducing ego threats. Many studies have shown that people with defensive self-esteem are significantly more likely than people with secure self-esteem to self-enhance following an ego threat (e.g., a poor test score or negative feedback from others). For example, people with defensive self-esteem were shown to self-enhance through the exercise of writing an essay about themselves after receiving positive or negative feedback on a test (Schneider & Turkat, 1975). When experimenters informed participants that the head researcher would read the essays, participants tended to include significantly more positive traits when they had received negative feedback. This effect was especially pronounced for participants with defensive self-esteem as compared with participants with secure high self-esteem, presumably because their need for

approval predisposed them to try to offset the report of a negative test score that would accompany their essay to the head researcher.

Studies such as Schneider and Turkat's (1975) reveal how people with defensive self-esteem actively self-enhance to diminish ego threats and maintain their exaggeratedly positive self-image. However, people with defensive self-esteem can also protect their self-image by enhancing themselves in a more passive way – by selectively paying attention to flattering information. For example, when feedback is presented visually, people with discrepant self-esteem (defensive or damaged) read negative feedback significantly faster than positive feedback (Schröder-Abé, Wiesner, & Schultz, 2007). The accelerated reading of negative feedback and dwelling on positive feedback suggests that people with defensive self-esteem focus more on flattering than critical information compared with people with congruent self-esteem. They are able to avoid the unwelcome effects of an ego threat by paying little attention to negative feedback and can enhance their self-image by spending more time reveling in flattering information.

Ingroup favoritism and outgroup discrimination. Self-enhancement is often not a sufficient defense mechanism for diverting ego threat. People with defensive self-esteem turn instead to the larger social constructions of ingroups and outgroups to reinforce a positive self-image. When people consider themselves in relation to their ingroup, other group members' positive qualities or successes allow them all to bask in each others' reflected glory, and so people will try to give their ingroup advantages whenever possible to improve all members' images over those of outgroups (Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). In one study, participants were divided according to a minimal groups paradigm in which they were told they had either greatly overestimated or underestimated the number of dots that appeared on

a computer screen (Jordan et al., 2003). This ostensibly strong misjudgment acted as an ego threat. Participants were then given the opportunity to award points to either a member of their own group or a member of the other group; the member with the most points at the end of the study would win a monetary prize. Results showed that participants with defensive self-esteem were significantly more likely than those with other types of self-esteem to show ingroup favoritism by assigning more points to members of their own group than to members of the other group. By doing so, the participants were essentially deeming the person who had made the same mistake as they did on the estimation task as more worthy of winning the prize (Jordan et al., 2003). By acting in a manner suggesting their comrade's estimation mistake – and therefore their own mistake – was somehow less grievous than that of the outgroup, participants with defensive self-esteem diminished the ego threat.

In addition to favoring ingroups, individuals with defensive self-esteem also actively discriminate against outgroups following ego threat (Jordan, Spencer, & Zanna, 2005). After reading a description of a physical altercation initiated by either a Native or White Canadian student, participants with defensive self-esteem who had received negative feedback on an intelligence test recommended a significantly harsher penalty when the initiator was a Native student. By placing an outgroup at a distinct disadvantage, the ingroup's image is elevated, and any ego threats subsequently carry less weight (Jordan et al., 2005).

Dissonance reduction. People with defensive self-esteem exist in a constant state of insecurity due to their low implicit self-esteem. As a result, they often try to avoid situations in which they feel some degree of uncertainty (McGregor & Marigold, 2003), an emotion that would not usually be a part of an ideal self. One strategy they employ is compensatory conviction – the tendency to feel stronger convictions about something in response to an event

that inspires uncertainty (McGregor & Marigold, 2003). Research participants who were asked to consider an unresolved personal problem subsequently had stronger convictions about their self-concept as well as their opinions on various social issues in comparison to those who only had to consider a friend's dilemma or make simple decisions (McGregor & Marigold, 2003). This effect was especially pronounced among participants with defensive self-esteem (high explicit, low implicit self-esteem). Compensatory conviction also plays a role when people must choose between two equally attractive options, such as dinner entrees. After making such a choice, people tend to rate the chosen option higher and the rejected option lower than they previously did (Jordan et al., 2003). Jordan et al. argue that uncertainty constitutes an ego threat. Feeling stronger convictions about a recent decision or other area of one's life compensates for the isolated moment of uncertainty, leaving one's positive, confident self-image intact. Compensatory conviction is thus an effective defense mechanism for people with defensive self-esteem.

In general, people with defensive self-esteem have a need for certainty because they lack the natural buffer against ego threats that secure self-esteem provides (Bosson et al. 2003). One common cause of uncertainty is a personal transgression between two or more people, because until an apology is made, it is unclear which party is at fault. However, some research suggests that for people with defensive self-esteem, apologies do not result in their forgiveness of a transgression because they are too concerned with reaffirming their own innocence (Eaton, Struthers, Shomrony, & Santelli, 2007). Eaton et al. (2007) demonstrated that participants with defensive self-esteem were significantly less likely than those with secure self-esteem to feel empathy toward a person who apologized, but they had significantly higher causal certainty regarding the transgression. Researchers concluded that this increased causal certainty was a

result of the propensity for people with defensive self-esteem to focus on the informational content of an apology in order to confirm their own faultlessness (Eaton et al., 2007). It is also likely that focusing on an apology's informational content, thereby reducing the likelihood of feeling empathy toward the transgressor, allows people with defensive self-esteem to remain vengeful. In the event of a future transgression by this same perpetrator, they can self-affirm to defend against ego threat; if they were wronged before, they are probably innocent this time, too. Recollection of their own blamelessness in the perpetrator's past transgressions reduces any ego threat from the possibility of being at fault.

Aggression. Arguably, the most severe kind of ego threat is that which makes discrepancies between people's actual and ideal selves public. In this situation, people's self-images can become the object of criticism from both themselves and peers. Because of the potential for a public loss of face, people with defensive self-esteem are most likely more sensitive to ego threats that make their faults apparent to others, and the unfortunate result is a defense mechanism that can have serious consequences: aggression. Though few studies examine aggression alongside defensive self-esteem in adults, some research has focused on children, who are less able to self-regulate and therefore more often result to physical and relational aggression (Sandstrom & Jordan, 2007). Researchers asked teachers to observe and report on their students' ($M = 13.5$ years) aggressive behaviors, and they found that students with defensive self-esteem had significantly higher levels of aggression (Sandstrom & Jordan, 2007). In general, adolescence is a time in which most people feel increased levels of insecurity, and the fact that children with defensive self-esteem are more aggressive suggests that they are especially sensitive to ego threat (Sandstrom & Jordan, 2007).

Summary of Defensive Self-Esteem

Defensive self-esteem is a type of discrepant, fragile self-esteem operationalized as high explicit and low implicit self-esteem, or as high explicit self-esteem and high scores on the *Defensive Self-Enhancement Scale*. Correlates of defensive self-esteem include narcissism and self-presentation bias, resulting from the fact that people with defensive self-esteem feel the need to enhance their self-image in order to appear more socially desirable to their peers. People with defensive self-esteem rely on self-enhancement, ingroup favoritism, outgroup discrimination, dissonance reduction, and in some cases aggression to deflect ego threats and diminish self-discrepancies. However, defensive self-esteem is not the only fragile self-esteem subtype for which ego threat deflection is important; people with contingent self-esteem—defined as having self-worth dependent on success in certain domains—also employ defense mechanisms in the face of ego threat.

Measurement of Contingent Self-Esteem

People with contingent self-esteem have specific domains on which their self-worth is contingent. Two self-report measures are most commonly used to gauge this contingency of self-worth. The *Contingencies of Self-Worth Scale* is a self-report survey that determines levels of contingency on seven domains: competencies, competition, approval from generalized others, family support, appearance, God's love, and virtue (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). In contrast, the *Contingent Self-Esteem Scale* assesses the general extent to which a person's self-esteem is contingent (Kernis & Goldman, 2006). Both the *Contingencies of Self-Worth Scale* and the *Contingent Self-Esteem Scale* are considered to be valid measures of contingent self-esteem.

Correlates of Contingent Self-Esteem

As is true with defensive self-esteem, people with contingent self-esteem have several characteristics in common that result from their self-worth's dependence on specific domains of contingency. Success in domains of contingency is of the utmost importance for people with this self-esteem subtype, so most behaviors and lifestyle choices are meant to support attempts at success.

Need for success. Among those with contingent self-esteem, self-worth is largely dependent upon success in specific domains (e.g., academics, job performance, interpersonal relationships; Crocker & Knight, 2005). The ability to meet goals and expectations in contingent domains are extremely important to positive self-worth, so people with contingent self-esteem are less likely to set goals for which success is not certain (Crocker & Knight, 2005). Due to the positive relationship between self-worth and success, they are more likely than people with other self-esteem subtypes to feel motivated to reach their goals, but in attempts to do so they are also more likely to experience high levels of stress, lower autonomy, less fulfilling relationships due to their focus on self-validation, and frequent fluctuations of self-esteem as a result of failures (Crocker & Knight, 2005). Quite often, this strain results in self-destructive behavior (e.g., binge drinking, unsafe sex, drug use; Crocker & Knight, 2005). Negative effects of contingent self-esteem are more common when self-worth contingencies are external (situations out of one's control; e.g., relationships) as compared with internal (situations within one's control; e.g., virtue; Crocker & Knight, 2005).

Because they are highly motivated to reach goals in contingent domains, people with contingent self-esteem are careful not to engage in any behavior that could sabotage their chances at success. For example, people whose self-worth is contingent upon success in the

workplace are less likely to engage in deviant behaviors that would harm their job performance (e.g., theft, lateness; Ferris, Brown, Lian, & Keeping, 2009). In contingent domains, success is the only option. There have, however, been some studies that suggest people with unstable self-esteem, such as contingent self-esteem, will self-handicap in attempt to bolster their feelings of self-worth (Zuckerman & Tsai, 2005); if they intentionally put forth less effort than they are capable of into a task, they can attribute any failures to their own purposeful actions rather than to a natural deficit in their abilities.

Narcissism. Like defensive self-esteem, contingent self-esteem is also correlated with narcissism. Recent research has distinguished between two types of narcissism – vulnerable and grandiose – and their relationship to different domains of contingency (Zeigler-Hill, Clark, & Pickard, 2008). Both vulnerable and grandiose narcissism are characterized by feelings of entitlement and exaggerated optimism about the self, but people with vulnerable narcissism hide these negative qualities under superficial concern for others and false modesty, and they rely on peer approval to maintain positive feelings of self-worth (Zeigler-Hill et al., 2008). In contrast, people with grandiose narcissism do not make efforts to hide their self-indulgence; they blatantly devalue other people and self-enhance in order to maintain positive feelings of self-worth (Zeigler-Hill et al., 2008).

A correlational study examining narcissism and contingent domains from the *Contingencies of Self-Worth Scale* suggests that vulnerable and grandiose narcissism are more strongly correlated with specific domains of contingency (Zeigler-Hill et al., 2008). Results showed that people with vulnerable narcissism were more likely to have self-esteem contingent upon competencies, approval from generalized others, family support, appearance, God's love, and virtue. Only the contingent domain of competition was highly correlated with grandiose

narcissism. These findings support the idea that people with vulnerable narcissism rely more on external approval (approval from generalized others, family support, appearance) in most situations to maintain positive feelings of self-worth than do grandiose narcissists (Zeigler-Hill et al., 2008).

Interpersonal styles. Research has also shown that people's interpersonal styles differ depending on the domains upon which their self-worth is contingent. Using the *Contingencies of Self-Worth Scale* and the *Interpersonal Adjectives Scales* (Wiggins, 1995), Zeigler-Hill (2005) found that people were more likely to have nurturing interpersonal styles (e.g., Warm-Agreeable) if their self-worth was contingent upon the domains of Competencies, Approval from Generalized Others, Family Support, Appearance, God's Love, and Virtue. However, people who relied on success in the Competition domain were more likely to have a hostile interpersonal style (e.g., Cold-hearted). Interestingly, these correlations mirror the relationships between domains of contingency and type of narcissism, suggesting that vulnerable narcissists are more likely to have a nurturing interpersonal style since they need approval from others, whereas grandiose narcissists have hostile interpersonal styles. However, interpersonal styles and contingent domains are most likely correlated because people employ a particular interpersonal style that will best allow them to reach goals in their domains of contingency (Zeigler-Hill, 2005).

Effects of Contingent Self-Esteem Following Ego Threat

People who have contingent high self-esteem (i.e., high contingent self-esteem and high explicit self-esteem) are especially vulnerable to ego threats. Similar to those used by people with defensive self-esteem, the mechanisms by which people with contingent high self-esteem deflect the ego threat of failure in a contingent domain generally relate to an inability to accept

their own shortcomings. In most cases, people with contingent high self-esteem attempt to avoid taking responsibility for their failures or lash out at others (Crocker & Knight, 2005). Whenever possible, they make excuses or blame other people for their insufficiency (Crocker & Knight, 2005). Additionally, research has shown that when participants with contingent high self-esteem received negative feedback on a bogus test, they were significantly more likely than people with secure self-esteem to rate a partner in the study as less likeable (Park & Crocker, 2005). Though this result could be related to their tendency to blame others for their faults, it might also relate to the outgroup discrimination that is common with cases of defensive self-esteem and ego threat.

Recent research has shown that verbal defensiveness is a common reaction to ego threat for people with contingent high self-esteem (Kernis, Lakey, & Heppner, 2008). In one study, participants with contingent high self-esteem were significantly more likely than participants with secure self-esteem to respond to threatening prompts (e.g., “Tell me about a time when you’ve broken the rules”) with discrepant information (e.g., “I have honestly never done anything bad. Like the worst thing I do is burn CDs, and I know that that’s like, illegal.”), indicating verbal defensiveness (Kernis et al., 2008, pp. 11, 36). Similar to instances of outgroup discrimination and lashing out at others, tendencies to resort to verbal defensiveness to deflect ego threats and maintain positive feelings of self-worth suggest that defense mechanisms used by people with contingent high self-esteem or defensive self-esteem often overlap.

Gaps in Past Research

People with defensive and/or contingent high self-esteem clearly have a wide array of mechanisms by which they can diffuse ego threats. However, past research has also suggested that self-awareness plays a large role in how ego threats can affect people. Specifically, people tend to avoid thinking about themselves when faced with unpleasant information that threatens

their self-concept (Wicklund & Frey, 1980). Though there is a large body of literature on self-awareness and avoidance, few studies investigate how people with defensive and/or contingent high self-esteem might use these mechanisms to diminish ego threats and preserve their present self-concept.

Self-Awareness Theory

In general, people who are naturally high in self-awareness are forced to pay closer attention to their various selves: the actual self (who one is), the ideal self (who one would like to be), and the ought self (who one thinks one should be; Wicklund & Frey, 1980). All people can be made self-aware when the idea of the self is salient, as when they complete a self-evaluation measure or are in the presence of a mirror (Wicklund & Frey, 1980). Even being made to feel unique from others who surround them, such as being in a minority group, can induce an evaluative state of self-awareness (Wicklund & Frey, 1980). People who are self-aware more thoroughly consider their present actions and attitudes and how they might differ from their ideal and ought selves, causing them to behave in greater accordance with personal or social values and reducing undesirable characteristics such as hypocrisy (Wicklund & Frey, 1980). Indeed, the most important feature in self-awareness theory is the tendency for people to try to avoid discrepancies between their actual and ideal selves. As such, people who face self-discrepancy favor subjective self-awareness, in which attention is focused outward in a first-person viewpoint, and they attempt to avoid objective self-awareness, in which attention is focused inward and they view themselves from a third-person vantage point (Silvia & Duval, 2001).

Avoiding objective self-awareness following ego threat. Research has shown that the self-discrepancies that objective self-awareness makes salient often launch people into a state of negative affect (Phillips & Silvia, 2005). Self-discrepancies can be the result of negative

feedback on a test, criticism from a peer, or even surveys that highlight how actual and ideal selves differ, all of which are unwelcome reminders that a person has fallen short of personal or social standards. In one study, participants who sat in front of a large mirror while completing surveys about their actual, ideal, and ought selves subsequently felt significantly more dejected and agitated than those participants who completed the survey without the presence of a mirror (Phillips & Silvia, 2005). The increased state of negative affect as a result of objective self-awareness is a motivator for people to avoid self-focusing when there is a discrepancy between the self and a personal or social standard in order to maintain a positive self-concept (Silvia & Duval, 2001).

Avoidance of objective self-awareness is strongest when the discrepancy is large or people feel they are not making progress toward meeting a standard quickly enough (Silvia & Duval, 2001). When possible, if people are consistently unable to meet a standard they will attempt to lower it to a level they can reach in order to eliminate self-discrepancies (Silvia & Duval, 2001). However, changing standards is not always possible, especially if the standard is of a social nature. For example, participants in a study who were socially rejected based on physical appearance avoided self-awareness by choosing to listen to a tape recording of another person's voice instead of their own (Gibbons & Wicklund, 1976). Standards of beauty are normally culturally determined and relatively unchangeable; in some cases, the only way for people to meet the standard is to resort to extreme measures such as plastic surgery. In any given moment of self-awareness when a personal or social standard seems unreachable, people will avoid thoughts of self in order to deflect the ego threat of self-discrepancy.

In addition to just avoiding thoughts of self in the face of self-discrepancies, people often put more energy into directing their attention to external stimuli. For example, Hess and Pickett

(2009) demonstrated that participants who were socially rejected remembered significantly more information about other people's actions compared with their own. Participants took part in an online ball-tossing game, in which the other players ignored them after the first few tosses. After the game, they read journals of events and were instructed to imagine the actions being completed by themselves or by another person. In a post-test measuring how much they recalled from the journals, results showed that participants who had been excluded from the ball-tossing game remembered more events from the journal if they had imagined other people taking part in them as compared with those participants who had imagined themselves taking part. In this situation, the ego threat involved in the study was a failure to meet some social standard that would have made them a good ball-tossing player, resulting in social rejection. The fact that rejected participants remembered more actions purportedly completed by others suggests that they were making more of an effort to avoid objective self-awareness by focusing their attention on external stimuli than were the participants who were not rejected from the game.

Failure to meet some standards can result in more detrimental methods of avoiding self-thought. Occasionally, people who face ego threat from self-discrepancy divert too much energy into external stimuli. For example, after receiving negative feedback on a test, people are significantly more likely to watch television for a longer period of time than if they had received positive feedback (Moskalenko & Heine, 2003). Though television viewing or similarly unproductive activities may seem inconsequential in the short term, using these activities as a long-term strategy to avoid objective self-awareness is clearly undesirable. Some ego threats can lead to more extreme withdrawals from the self. Research has shown that failure to meet certain standards can result in significant negative affect in the form of depression and anxiety (Heatherton & Baumeister, 1991). When self-discrepancies are significantly large, people might

devote all of their energy toward focusing on external stimuli in an effort to avoid self-awareness. One possible result of this avoidance, especially in the case of people who fail to live up to their ideal body image, is binge-eating (Heatherton & Baumeister, 1991). By focusing only on food, binge-eaters are able to stop unwanted thoughts about the self. Tragically, for some people even this extreme level of external focus is not enough to halt self-awareness; when self-discrepancies become too overwhelming and attention on self-thoughts cannot be fully diverted, people may resort to suicide as the ultimate escape from the self (Baumeister, 1990).

Overview of the Current Study

Due to previous empirical support for the theory that people will avoid objective self-awareness in response to salient discrepancies between their actual and ideal selves, I was interested in examining to what extent people with defensive and/or contingent high self-esteem would avoid self-focusing following an ego threat. In general, people with defensive self-esteem are more likely than those with secure self-esteem to employ defense mechanisms to maintain positive affect and diffuse any threats to their self-concept (Bosson et al., 2003; Eaton et al., 2007; Jordan et al., 2003; Jordan et al., 2005; McGregor & Marigold, 2003; Sandstrom & Jordan, 2007; Schneider & Turkat, 1975; Schröder-Abé et al., 2007). Similarly, people with contingent high self-esteem are especially sensitive to ego threats in domains upon which their self-worth relies (Crocker & Knight, 2005; Park & Crocker, 2005). Thus, it is possible that people with defensive and/or contingent high self-esteem will be more likely than those with secure self-esteem to avoid objective self-awareness following a significant ego threat.

To investigate the effect of ego threat on avoidance of objective self-awareness in people with defensive and/or contingent high self-esteem, I conducted an experiment with between-subjects variables of ego threat (positive vs. negative feedback on a supposed flexible thinking

task) and self-esteem subtype. Defensive self-esteem was operationalized using both the *Defensive Self-Enhancement Scale* (O'Brien & Epstein, 1988) and a comparison of explicit and implicit self-esteem using the *Rosenberg Self-Esteem Scale* (explicit; Rosenberg, 1965) and the Implicit Association Test (Greenwald & Farnham, 2000). Contingent high self-esteem was operationalized using the *Contingent Self-Esteem Scale* (Kernis & Goldman, 2006) and the *Rosenberg Self-Esteem Scale*. I hypothesized that participants with defensive and/or contingent high self-esteem would be significantly more likely than those with secure self-esteem to avoid looking at a photograph of their face following negative feedback on a test than following positive feedback.

Method

Participants

Eighty-six undergraduate students (26 men, 60 women) from Hamilton College volunteered to participate in the study by signing up to do so online. Their ages ranged from 17 to 21 years ($M = 18.7$, $SD = 0.9$), and the majority of students reported their ethnicity as Caucasian (76.5%). Other ethnicities reported were Asian/Asian-American (9.4%), Hispanic/Latino (4.7%), and African-American (3.5%). Students received compensation for their participation in the form of extra credit applicable to their psychology course or a chance to win \$50 in a lottery.

Measures

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). The RSES is the most commonly used measure of self-esteem, in which participants respond to ten items assessing explicit self-esteem. Items were presented in the form of declarative statements (e.g., "I feel that I have a number of good qualities") and participants rated the items on a Likert-type scale

ranging from 1 (“Strongly disagree”) to 10 (“Strongly agree”); the original 1 to 4 scale was modified to increase variability. Five items were reverse-scored such that higher scores indicated higher explicit self-esteem. See Appendix A for the full measure.

Contingent Self-Esteem Scale (CSES; Kernis & Goldman, 2006). Fifteen declarative statements addressed different characteristics upon which participants’ self-worth was contingent (e.g., “An important measure of my worth is how competently I perform”). Participants responded to each item using a 5-point scale ranging from 1 (“Not at all like me”) to 5 (“Very much like me”) with 3 as a neutral point. Five items were reverse-scored such that lower scores indicated higher contingent self-esteem. Kernis and Goldman (2006) demonstrated that the *Contingent Self-Esteem Scale* has a high internal consistency with a Cronbach alpha of .85 and a high test-retest reliability, $r = .77$. See Appendix B for the complete measure.

Self-Esteem Implicit Association Test (IAT; Greenwald & Farnham, 2000). This task measured participants’ implicit self-esteem through their response latencies and error rates in categorization of stimuli relating to target concepts (*me, others*) and attributes (*positive, negative*) on a computer. The category titles appeared at the top-left or top-right side of the computer screen, and participants were instructed to use the “e” and “i” keys to sort verbal stimuli into the appropriate categories. The IAT included 20 unique stimulus words: four *me* words (*me, my, I, self*), four *others* words (*they, them, their, other*), six *positive* words (*Warmth, friend, smile, sunshine, joy, happy*), and six *negative* words (*agony, death, disease, vomit, evil, pain*).

The IAT contained seven trial blocks. The first block (20 trials) allowed participants to practice target-concept discrimination in a single-categorization task (*me* vs. *others*). The second block (20 trials) was also a single-categorization task in which participants practiced attribute

discrimination; using the “e” and “i” keys, participants sorted attribute words according to whether they were positive or negative. Block three (20 trials) consisted of a practice dual-categorization task for the *me/positive* (vs. *others/negative*) pairing. The fourth block (40 trials) was a test for this pairing. In the fifth block (20 trials), participants practiced a reversal of the initial target-concept discrimination (*others* vs. *me*) in a single-categorization task. Block six (20 trials) combined the newly reversed target-concept discrimination with attribute discrimination in a dual-categorization task for the *me/negative* (vs. *others/positive*) pairing, and the seventh block was a test block (40 trials) for this pairing. Incorrect responses throughout all blocks were indicated by a red “X” appearing in the center of the screen that disappeared after participants pressed the correct categorization key for the stimulus. Block order for the dual categorization tasks was counterbalanced to distribute order effects such that half of the participants completed the *me/positive* pairing first, and half completed the *me/negative* pairing first.

Materials

Self-awareness task. Participants’ eye movements in the self-awareness task were captured and recorded using eyetracking headgear and ASL Eyetrac6000 (version 1.01, 2006) computer software. In a previous pilot test, 30 male and 30 female faces were rated for attractiveness and apparent age. The 21 faces of each sex that received the highest average attractiveness ratings and were generally believed to be college-aged were chosen for inclusion in the present study. Participants in the present study viewed photographs of these faces of their own sex. The first photograph appeared for 2000 msec. in either the top-left, top-right, bottom-right, or bottom-left corner of a computer screen, depending on counterbalancing. Then the photograph disappeared and participants viewed a black screen for 1000 msec. before the next picture appeared. Each subsequent photograph appeared for 2000 msec. in the next corner in a

clockwise fashion, followed by a black screen for 1000 msec. One sequence of the task consisted of 4 stimulus presentations in succession – one in each corner of the screen – and there were 16 total sequences. Included among the photographic stimuli was a photograph of the participant's own face, which was present for 12 of the 16 sequences and always appeared in the same corner of the computer screen; the location of the participant's face was counterbalanced across participants. The duration of the task was approximately 3 minutes.

Procedure

Participants were led to believe that the study involved flexible thinking. Prior to coming to the lab, they completed the *Rosenberg Self-Esteem Scale*, the *Contingent Self-Esteem Scale*, and demographic items among a battery of other measures as part of an online pre-test. However, participants were told only that these surveys measured their “views of the self.”

Only one participant was run at a time. When participants arrived in the lab, they provided informed consent. The researcher then led them to the hallway and asked them to stand against a plain, white wall to have their photograph taken for a later portion of the study. The overhead fluorescent lighting was harsh in this portion of the hallway because the picture was meant to be somewhat unflattering. The researcher showed the photograph to the participants before leading them to a neighboring room to complete the IAT. Participants sat down at a laptop computer and the researcher recited a scripted explanation of the study:

In this study we are interested in your perception of and your flexible responses to photographs and verbal stimuli. Flexible thinking has been shown to be correlated with people's success after college in terms of the types of jobs they are able to get, their rate of promotion, and salary levels. In the first task, you will be making quick judgments about self- and other-related words. In the second task, you will

be looking at various faces, including your own, as they appear on the computer screen for a short length of time.

Unbeknownst to participants, this first task was in fact the IAT, measuring their implicit self-esteem. After the researcher answered any questions that would not divulge the true nature of the study, she informed the participants that they could begin the task at any time. Meanwhile, the researcher explained that she would be setting up for the next part of the study and that participants should remain seated at the computer until they returned.

While participants completed the IAT, the researcher returned to the first room and uploaded the participants' photograph into the program used to present the stimuli for the eyetracking portion of the study.. Participants' photographs were cropped such that only the head appeared, and the width was set to 400 pixels. These changes were made so that the participants' photographs would match the shape of the other photos in the Self-Awareness Task. After approximately 5 minutes, the researcher returned to the IAT room to retrieve the participants for the next part of the study.

Following the categorization tasks in the IAT, a feedback screen appeared indicating that the participant's score was far below the average for the college (45 compared to an average of 73) or well above it (92 compared to an average of 73). This feedback was randomized according to participant number such that half of the participants received positive feedback and half received negative feedback. Upon returning to the IAT room, the researcher approached the participants from behind and viewed the positive or negative score that was fixed on the computer screen. She then casually delivered verbal feedback in response to the score to make it clear that she was aware of the participants' performance. In the positive feedback condition, the researcher said, "Wow! You got one of the highest flexible thinking scores I've seen! I don't

know if you're thinking about jobs yet, but you'd probably do well in a field where you have to think quickly on your feet." In the negative feedback condition, the researcher said, "Huh...you got one of the lower flexible thinking scores I've seen. I guess flexible thinking isn't your strong suit." After it was clear that the participants understood the feedback, the researcher led them to the eyetracking room to complete the next part of the study.

In the eyetracking room, participants were seated in front of a computer. The researcher fit the participants with the eyetracking headgear and calibrated the equipment so that the participants' eye movements could be tracked at any location on the computer screen. Participants were then instructed that they simply needed to view the pictures as they appeared, and that they could begin the task at any time by pressing the space bar. The task took approximately 3 minutes. Following completion of the task, participants were probed for suspicion, thoroughly debriefed, thanked, and dismissed.

Results

Data were deleted for 19 participants who did not believe the feedback manipulation due to prior experience with deception research, and for 27 additional participants for whom I could not collect sufficient eyetracking data due to equipment malfunctions or errors in data collection. Finally, I deleted data for 7 participants who had abnormal response latencies (less than 400 ms or greater than 1000 ms) and/or unacceptable error rates (greater than 35%) on the Implicit Association Test (IAT). Thus, different sample sizes were used in the regression analyses involving explicit/contingent interactions ($N = 38$) than in those involving explicit/implicit interactions ($N = 31$).

Determining Fixation Sums and Durations

I created areas of interest (AOIs) surrounding regions slightly larger than each of the photographs in the four corners of the screen using FixPlot software (Version 2.12, 2008), which allowed eyetracking data for those areas to be isolated for further study. Using EyeNal software (Version 2.107, 2009), I created fixation files for the twelve periods in which participants' own photographs appeared and the twelve periods in which the opposite diagonal photograph appeared. I then used these fixation files and the AOIs to create fixation sequencing files, which reported the number of times participants fixated in each AOI as well as the total time spent looking in each AOI. The dependent variables were averaged across all twelve trials and included (1) the total number of fixations on participants' own photograph minus the number of fixations on the control photograph (fixation sum difference score) and (2) the total number of seconds spent looking at participants' own photograph minus seconds spent looking at the control photograph (fixation duration difference score). Thus, positive values indicated more fixations or seconds spent looking at participants' own photographs than at the control photographs. Similar mean difference scores were also created for the first three trials in which participants' photographs appeared, in case the effect dissipated over time. See Table 1 for means and standard deviations for all relevant variables across all twelve trials and across the first three trials.

Descriptive Statistics: Explicit, Contingent, and Implicit Self-Esteem Measures

Using the improved scoring algorithm for the IAT (Greenwald, Nosek, & Banaji, 2003), I created d scores for all participants. In the first step of this algorithm, I found mean latencies and standard deviations for the two critical test blocks and their corresponding practice blocks. I then found mean differences between these two sets of blocks and divided them by the corresponding

Table 1

Means and Standard Deviations for Eyetracking Variables

Variable	Mean over 12 trials	Mean over 3 trials
Mean number of fixations on self	4.79 (2.65)	4.83 (2.96)
Mean time (sec.) spent looking at self	1.53 (0.89)	1.48 (0.96)
Mean number of fixations on self relative to control (>0 = more fixations on self than control)	0.19 (2.77)	0.06 (1.12)
Mean time (sec.) spent looking at self relative to control (>0 = more time spent looking at self than control)	0.06 (1.05)	0.50 (3.33)

Note. Standard deviations are displayed in parentheses under their corresponding means.

standard deviations. An average of the two resulting ratios comprised the *d* score for each participant. Higher *d* scores represent higher implicit self-esteem. See Table 2 for the means and standard deviations of the measures of explicit, implicit, and contingent self-esteem, as well as their intercorrelations and relevant Cronbach's alphas. The correlations between measures were generally consistent with past findings (Greenwald & Farnham, 2000; Kernis, Lakey, & Heppner, 2008). All variables were centered around their means prior to entry into regression equations. The feedback condition variable was effect-coded (negative = 1, positive = -1).

Defensive Self-Esteem

Fixation counts and durations across 12 trials. I hypothesized that participants with defensive self-esteem (i.e., those with high explicit and low implicit self-esteem) in the negative

Table 2

Correlations Among Explicit, Implicit, and Contingent Self-Esteem Measures

	Rosenberg SE Score	Contingent SE Score	Implicit SE (<i>d</i>)	<i>M</i>	<i>SD</i>
Rosenberg Self-Esteem Score	(.81)			5.65	0.87
Contingent Self-Esteem Score	-0.41*	(.84)		3.61	0.55
Implicit Self-Esteem <i>d</i> Score	-0.14	0.30	---	0.60	0.38

Note. Cronbach's alphas are displayed along the diagonal.

* $p < .05$

feedback condition would fixate on at their own photograph fewer times and would spend less time looking at their own photograph compared with the control photograph. To test these hypotheses, the fixation sum difference score and the fixation duration difference score (for all 12 trials) were each regressed (in separate regression equations) on the effect-coded feedback variable, the centered explicit and implicit self-esteem scores, and all two- and three-way interaction terms. There were no significant main effects or two-way interactions. Contrary to my hypotheses, both three-way interactions were also nonsignificant, $t(26) = 0.19, p = 0.852$ for fixation sum, and $t(26) = 0.15, p = 0.882$ for fixation duration.

Fixation counts and durations across the first three trials. Because of the possibility that the effect of the feedback could fade over time, I also examined just the first three trials in which participants' photographs appeared. Contrary to predictions, neither three-way interaction

was significant, $t(26) = -0.47, p = 0.643$ for fixation sum, and $t(26) = -0.20, p = 0.840$ for fixation duration. However, for fixation duration, there was a main effect for explicit self-esteem, $t(26) = -2.59, p = 0.016, \beta = -0.632$, indicating that higher explicit self-esteem was associated with smaller fixation durations on the self relative to the control photograph. This main effect for explicit self-esteem was qualified by a significant two-way interaction between explicit self-esteem and feedback condition, $t(26) = -2.52, p = 0.018, \beta = -0.607$. Among participants in the negative feedback condition, higher explicit self-esteem was associated with smaller fixation durations, $t(12) = -5.03, p < .001, \beta = -0.870$. However, in the positive feedback condition, explicit self-esteem was unrelated to fixation duration, $t(14) = -0.15, p = 0.884$.

Contingent Self-Esteem

Fixation counts and durations across 12 trials. Following negative feedback, participants with contingent high self-esteem (i.e., high contingent self-esteem paired with high explicit self-esteem) were expected to fixate on their own photograph fewer times and for less total time compared with the control photograph. To test these hypotheses, the fixation sum difference score and the fixation duration difference score (for all 12 trials) were each regressed (in separate regression equations) on the effect-coded feedback variable, the centered explicit and contingent self-esteem means, and all two- and three-way interaction terms. Neither of these regressions revealed main effects for explicit or contingent self-esteem or two-way interactions. Contrary to predictions, both three-way interactions were also nonsignificant, $t(31) = -0.55, p = 0.590$ for fixation sum, and $t(31) = -1.29, p = 0.206$ for fixation duration.

Fixation counts and durations across 3 trials. Examining just the first three trials, the regression with fixation sum as the dependent variable yielded no significant main effects or interactions. However, the regression with fixation duration revealed a main effect for explicit

self-esteem, $t(31) = -2.12, p = 0.043, \beta = -0.431$, such that higher self-esteem was associated with smaller fixation durations. This main effect was qualified by a significant two-way interaction between explicit self-esteem and feedback condition, $t(31) = -2.51, p = 0.017, \beta = -0.500$.

Among participants in the negative feedback condition, higher explicit self-esteem was associated with smaller fixation durations on the self relative to the control photograph, $t(16) = -3.69, p = .002, \beta = -0.678$. In the positive feedback condition, however, explicit self-esteem was unrelated to fixation duration, $t(18) = -0.02, p = 0.981$.

For fixation duration, there was also a significant two-way interaction between explicit self-esteem and contingent self-esteem, $t(31) = 2.55, p = 0.016, \beta = 0.381$. I examined this interaction separately for participants who scored in the upper and lower tertiles for contingent self-esteem. Among individuals in the lower tertile for contingent self-esteem, higher explicit self-esteem was associated with smaller fixation durations on the self relative to the control photograph, $t(9) = -4.72, p = .001, \beta = -0.844$. However, among individuals in the upper tertile for contingent self-esteem, explicit self-esteem was unrelated to fixation durations, $t(9) = -0.11, p = 0.917$.

Finally, for fixation duration, the three-way interaction among explicit self-esteem, contingent self-esteem, and feedback condition approached significance, $t(31) = -1.91, p = 0.065, \beta = -0.298$. To further understand the nature of this three-way interaction, I examined the two-way interaction between explicit self-esteem and contingent self-esteem separately for participants in the positive and negative feedback conditions. Among participants in the positive feedback condition, there were no significant main effects for explicit or contingent self-esteem; however, the two-way interaction was significant, $t(16) = 4.53, p < 0.001, \beta = 0.757$. Among participants in the upper tertile for contingent self-esteem, there was no relationship between

explicit self-esteem and fixation duration $t(1) = 3.00, p = 0.205, \beta = 0.949$, although the direction of the trend suggests that, consistent with my hypothesis, higher explicit self-esteem was related to more time spent looking at one's own photograph (see Figure 1). Among participants in the lower tertile for contingent self-esteem, higher explicit self-esteem was (unexpectedly) significantly related to smaller fixation durations on the self relative to the control photograph, $t(5) = -5.85, p = 0.002, \beta = -0.934$.

Among participants in the negative feedback condition, there was a significant main effect for explicit self-esteem, $t(14) = 0.39, p = 0.006, \beta = -0.753$, such that higher explicit self-esteem was associated with less time spent looking at the self relative to the other. However, inconsistent with my hypothesis, the two-way interaction between explicit and contingent self-esteem was non-significant, $t(14) = 0.39, p = 0.706$.

Discussion

I hypothesized that participants with defensive and contingent high self-esteem in the negative feedback condition would have smaller fixation sums and durations on their own photograph relative to the control photograph. Support for these hypotheses would suggest that participants with these self-esteem subtypes avoided self-awareness in the face of ego threat. After analyzing data for the first 12 trials and finding non-significant results, it was necessary to examine only the first 3 trials in case the feedback effect had faded over the course of the self-awareness task; the effect would be strongest in the first few trials. However, the results of a series of linear regressions left my hypotheses largely unsupported.

Defensive Self-Esteem

Non-significant three-way interactions between explicit self-esteem, implicit self-esteem, and feedback condition suggest that, contrary to expectations, participants with defensive self-

esteem did not attempt to escape self-awareness more than did participants of other self-esteem subtypes following ego threat. However, hypotheses were partially supported by the main effect for explicit self-esteem, which indicated that participants with high explicit self-esteem in the negative feedback condition avoided self-awareness by spending less time looking at their own photograph in relation to the photograph of another person. Thus, participants who had high explicit self-esteem appear to have found negative feedback more threatening than did participants with low explicit self-esteem. This main effect of explicit self-esteem in response to ego threat supports the findings of past research (Eaton et al., 2007; Jordan, Spencer, & Zanna, 2005; Jordan et al., 2003; McGregor & Marigold, 2003; Sandstrom & Jordan, 2007).

Contingent High Self-Esteem

As was the case with defensive self-esteem, data for participants with contingent high self-esteem did not support my central hypotheses. Three-way interactions between explicit self-esteem, contingent self-esteem and feedback condition were significant for fixation duration, but closer examination of these results revealed no significant findings for participants in the negative feedback condition. However, the general trend of the data for contingent high self-esteem participants in each feedback condition was consistent with my hypotheses, though the data were non-significant; in the negative feedback condition, high contingent self-esteem participants tended to have smaller fixation durations on the self photograph in relation to the another person's photograph as explicit self-esteem increased. In contrast, high contingent self-esteem participants in the positive feedback condition tended to have larger fixation durations on the self photograph in relation to the control photograph as explicit self-esteem increased. These trends are consistent with past studies that suggest people with contingent high self-esteem will employ defense mechanisms to combat ego threat (Crocker & Knight, 2005; Park & Crocker,

2005) and lend support to the notion that avoidance of self-awareness may be another effective mechanism that people with this self-esteem subtype employ. It is likely that these findings would have been significant with a larger sample size.

Contrary to my hypotheses, three-way interactions between explicit self-esteem, contingent self-esteem, and feedback condition for fixation sum were non-significant for participants with contingent high self-esteem, suggesting that ego threat did not incite avoidance of self-awareness in the form of the number of times participants fixated on their own photograph in relation to the photograph of another person. It is possible that this unexpected outcome may have been a consequence of the brief duration that photographs appeared on the screen (2000 msec), such that the very short presentation of the self photograph might not have been troubling for participants in the negative feedback condition. Additionally, the photographs may not have been presented long enough for participants to fixate on each more than a few times. Displaying the photographs for a somewhat longer duration (e.g., 5000 msec) might reveal significant differences in fixation sums between the self and control photographs.

As was the case with defensive self-esteem participants, there was a main effect of explicit self-esteem for participants in the negative feedback condition, suggesting that participants with high explicit self-esteem avoided self-awareness in response to ego threat more than did participants with low explicit self-esteem. Thus, regardless of levels of defensive and/or contingent self-esteem, participants' high explicit self-esteem seemed to be the determining factor in whether or not they demonstrated avoidance of self-awareness in the negative feedback condition. Most likely, these findings result from the possibility that people with high explicit self-esteem naturally have higher expectations for their own performance and are therefore more upset when they fail as compared with people with low explicit self-esteem.

Limitations

The bogus feedback paradigm employed in the present study was problematic due to the fact that a large majority of participants were psychology students, and many guessed the nature of the manipulation before completing the self-awareness task. Data for these participants were eliminated from further analysis, leaving a participant pool much smaller than ideal and reducing the power of any potential effects and interactions. Furthermore, a large majority of participants who were psychology students were first-year students taking introductory courses in the field. During debriefing, many of these participants reported being confused by the supposed flexible thinking task (in reality, the IAT) in terms of how scores were calculated and whether they actually reflected their cognitive abilities. Even for participants who believed the bogus feedback manipulation, confusion over the nature of the task and its validity as a true measure of their skills may have significantly reduced the ego threat that was meant to be associated with negative feedback. If this were the case, these participants, regardless of self-esteem subtype, would not have had a need to avoid self-awareness because they did not feel properly threatened. Future studies that employ a bogus feedback paradigm should endeavor to utilize a task that participants will be sure to understand (e.g., a mathematics test, a reading comprehension task) so that a poor score will carry the appropriate ego threat.

Researchers' delivery of verbal feedback also proved to be problematic, as some participants reported feeling suspicious of the score only after researchers emphasized it verbally. Data from these participants were eliminated from further analysis, again reducing the sample size for which data were viable. Furthermore, for participants who did believe the feedback manipulation, it is unclear whether or not the verbal feedback actually succeeded in creating a larger ego threat in the case of negative feedback. Future studies should run the

experiment with and without verbal feedback to determine if it has any effect on subsequent avoidance of self-awareness.

Though results from the present study may suggest that people with defensive and contingent self-esteem do not utilize avoidance of self-awareness to diminish ego threat, it is equally possible that the threat posed in the present study was not strong enough to elicit this particular defense mechanism. Future studies on avoidance of self-awareness in people with these self-esteem subtypes should compare the effects of several types of ego threats (e.g., bogus feedback on a test, criticism from a peer confederate, criticism from an authority figure such as a professor or older researcher) in order to determine if attempts to escape self-thought are dependent on the strength of the threat. For example, criticism from an authority figure would most likely pose a larger ego threat than criticism or social rejection from a peer. Participants with defensive and contingent high self-esteem may avoid self-awareness in response to the more powerful threat but not the weaker threat.

One final limitation of the present study concerns the use of the *Contingent Self-Esteem Scale* to categorize participants as having high or low contingent self-esteem. This scale does not separate participants according to their domain(s) of contingency, so it is possible that some participants who scored high for contingent self-esteem had domains of contingency unrelated to the ego threat introduced in the present study, which concerned mental acuity and success in future job performance. For example, some participants who scored high on the *Contingent Self-Esteem Scale* may have had self-worth contingency only in domains such as relationship success, and in that case they would not have felt as threatened by negative feedback on a test and subsequently would have had less need to avoid self-awareness to cope with the threat than participants for whom success on tests is very important. Data analysis might have revealed

stronger effects in support of my hypotheses if I had separated participants' responses to items on the *Contingent Self-Esteem Scale* that were relevant to the feedback manipulation (e.g., "An important measure of my worth is how competently I perform") from responses to items that concerned domains irrelevant to the ego threat posed in the present study (e.g., "If I get along well with somebody, I feel better about myself overall"). However, it must also be noted that participants were students at a highly selective liberal arts college, and it is likely that contingent self-esteem participants had domains of contingency relating to competency, so the feedback manipulation should have posed a sufficient threat. Regardless, future studies should attempt to more closely examine participants' contingency on domains that are specifically related to the ego threat utilized in the study.

Avenues for Future Research

Future studies should attempt to use a paradigm that more closely reflects real-life situations. In the present study, avoidance of self-awareness was measured in the number of fixations on and amount of time spent looking at participants' own photographs in relation to a control photograph as part of an unrealistic task that would not have been found outside of the laboratory. Future paradigms should assess avoidance of self-awareness in more ecologically valid situations. For example, Moskalkenko and Heine (2003) used the amount of time participants chose to watch television after an ego threat as a measurement of avoidance of self-awareness via increased focus on external stimuli. Because increased television viewing could easily be a coping mechanism that people use in their daily lives to turn their attention away from themselves, Moskalkenko and Heine's (2003) study has strong ecological validity. Future studies on how people with defensive and/or contingent high self-esteem avoid self-awareness to diminish ego threats should strive to achieve real-world application. For example, following an

ego threat such as a negative test score, avoidance of self-awareness could be measured in the extent to which participants will mention themselves or their score in a subsequent conversation with a confederate (i.e., number of “I” statements or statements related to their score) versus the extent to which they deflect attention away from themselves (i.e., number of statements unrelated to the self). In separate studies, similar to Moskalkenko and Heine’s (2003) paradigm, researchers could also measure the extent to which participants avoid self-awareness by devoting their energy to external stimuli such as video games, writing an essay on a topic unrelated to the self, or volunteering to help with a charity effort.

Past studies also suggest that the extent to which people with contingent high self-esteem will respond negatively to an ego threat depends on whether the affected domain of contingency is internal or external (Crocker & Knight, 2005). When external domains are threatened (e.g., approval from others), defense mechanisms are especially common and can be more intense than responses to threatened internal domains (e.g., virtue). The affected domain in the present study was external (competency). Future research should examine whether threats to internal domains (e.g., imagining a time when one betrayed one’s moral values) would produce escape from self-awareness. If findings suggest that people with internal and external domains of contingency avoid self-awareness similarly to protect feelings of self-worth, then it is likely that this particular defense mechanism is universally used to diminish ego threat regardless of self-esteem subtype or related factors thereof.

Concluding Remarks

Though the central hypotheses of the present study were unsupported, researchers should not ignore the potential for a connection between avoidance of self-awareness and ego threat in people with defensive and/or contingent high self-esteem. Data trends in the present study

suggest that the predicted results could be attained with a larger sample size. Additionally, findings suggest that high explicit self-esteem is associated with avoidance of self-awareness regardless of whether or not the participants also had defensive and/or contingent self-esteem. Though there were several limitations to the present study's experimental paradigm – many participants did not believe the feedback manipulation and the self-awareness task has limited real-world application – this study nevertheless provides a starting point for future research on avoidance of self-awareness and defensive and contingent high self-esteem. Continued investigation into potential interactions may give researchers a more comprehensive idea of the roles that defensive and contingent high-self esteem can play in daily life.

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Appendix B
Contingent Self-Esteem Scale

Instructions: Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement carefully and consider the extent to which you think it is like you. Using the 1-5 scale below, write the number that best corresponds to your response on the line to the left of each question. There are no right or wrong answers, so please answer as honestly as you can. Thank you.

	1	2	3	4	5
	Not at all Like me		Neutral		Very much Like me
1. An important measure of my worth is how competently I perform.....	1	2	3	4	5
2. Even in the face of failure, my feelings of self-worth remain unaffected.....	1	2	3	4	5
3. A big determinant of how much I like myself is how well I perform up to the standards that I have set for myself.....	1	2	3	4	5
4. My overall feelings about myself are heavily influenced by how much other people like and accept me.....	1	2	3	4	5
5. If I get along well with somebody, I feel better about myself overall.....	1	2	3	4	5
6. An important measure of my worth is how physically attractive I am.....	1	2	3	4	5
7. My overall feelings about myself are heavily influenced by what I believe other people are saying or thinking about me.....	1	2	3	4	5
8. If I am told that I look good, I feel better about myself in general.....	1	2	3	4	5
9. My feelings of self-worth are basically unaffected when other people treat me badly.....	1	2	3	4	5
10. An important measure of my worth is how well I perform up to the standards that other people have set for me.....	1	2	3	4	5
11. If I know that someone likes me, I do not let it affect how I feel about myself.....	1	2	3	4	5
12. When my actions do not live up to my expectations, it makes me feel dissatisfied with myself.....	1	2	3	4	5
13. Even on a day when I don't look my best, my feelings of self-worth remain unaffected.....	1	2	3	4	5
14. My overall feelings about myself are heavily influenced by how good I look.....	1	2	3	4	5
15. Even in the face of rejection, my feelings of self-worth remain unaffected.....	1	2	3	4	5