Effect of Self-Awareness on Negative Affect among Individuals with Discrepant Low Self-Esteem

Clara Michelle Cheng
American University

Olesya Govorun
TNS

Tanya L. Chartrand
Duke University

Keywords: self-esteem; implicit self-esteem; self-awareness; negative affect

Correspondence should be addressed to:
Clara Cheng
Department of Psychology
American University
4400 Massachusetts Ave NW
Washington, DC 20016
Phone: (202)885-1711
Fax: (202)885-1023
Email: cheng@american.edu
Abstract

Past research suggests that individuals with discrepant low self-esteem (low explicit and high implicit self-esteem) may hold themselves against higher standards and judge themselves more critically when they fall short of those standards (V. Zeigler-Hill & C. Terry, 2007). We postulated that for discrepant low self-esteem individuals, self-awareness would activate their stringent standards and the fact that they have failed to meet those standards, thereby inducing negative affect. In this study, 145 participants completed implicit and explicit self-esteem measures, and half were then made to be self-aware by completing a task with a mirror in front of them for 3 min. We found that self-awareness increased negative affect among discrepant low self-esteem participants.
Effect of Self-Awareness on Negative Affect among Individuals with Discrepant Low Self-Esteem

For many years, research findings have supported the conventional wisdom that high self-esteem is associated with positive outcomes, such as happiness and life-satisfaction (Diener & Diener, 1995), persistence following failure (McFarlin, Baumeister, & Blascovich, 1984), and better academic performance (Hansford & Hattie, 1982). Traditionally, self-esteem had been conceptualized as one’s conscious or explicit evaluations of oneself, and is commonly measured using self-report questionnaires such as the Rosenberg self-esteem scale (Rosenberg, 1965). More recently, with the advent of implicit measures in social cognition, researchers have begun to show that it is also useful to take into account people’s implicit self-esteem, defined as “the introspectively unidentified…effect of the self-attitude on evaluation of self-associated and self-dissociated objects” (Greenwald & Banaji, 1995, p. 11). Implicit measures of self-esteem typically do not require overt self-evaluation, but rather, assess how quickly one can associate positive stimuli with the self or the degree to which one evaluates objects related to the self, such as one’s name letters (see Bosson, Swann, & Pennebaker, 2000, for a review). Interestingly, while both explicit and implicit self-esteem are forms of self-evaluation, measures of the two constructs are not highly correlated (Bosson et al., 2000). Indeed, many theorists have postulated that explicit and implicit self-esteem are distinct but related constructs, with explicit self-esteem arising from conscious beliefs of the self, and implicit self-esteem stemming from intuitive, automatic, and less conscious evaluative associations of the self (Koole & DeHart, 2007; Koole, Dijksterhuis, & van Knippenberg, 2001; but see Olson, Fazio, & Hermann, 2007; Sherman et al., 2008, for alternative views).
The notion that explicit and implicit self-esteem are based in different processes suggests that it is possible for some individuals to possess a mismatch between their level of explicit self-esteem and their level of implicit self-esteem. Indeed, recent research has begun to examine such discrepant forms of self-esteem. Individuals with high explicit and low implicit self-esteem – also known as defensive, fragile high, or discrepant high self-esteem in the literature – are believed to regard themselves highly at the conscious level, but to feel insecure “underneath the surface.” Converging evidence suggests that people with discrepant high self-esteem experience less stable self-esteem, and are more likely to act defensively and engage in self-enhancement strategies, especially when threatened (Bosson, Brown, Zeigler-Hill, & Swann, 2003; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003; Zeigler-Hill, 2006; Kernis, Lakey, & Heppner, 2008; Kernis et al., 2005). Furthermore, discrepant high self-esteem individuals are less willing to forgive those who have transgressed against them (Eaton, Struthers, Shomrony, & Santelli, 2007). Such findings suggest that there is a “dark side” to high self-esteem, when it is paired with low implicit self-esteem.

Relatively little research thus far has focused on the other form of discrepant self-esteem – discrepant low self-esteem – which consists of low explicit but high implicit self-esteem. Spencer and his colleagues (Spencer, Jordan, Logel, & Zanna, 2005) suggested that discrepant low self-esteem individuals may approach future tasks with a “glimmer of hope” that buffers them against defensiveness, citing evidence that these individuals are more optimistic, more likely to persevere on a previously failed task, and less likely to self-handicap. Based on this idea, Zeigler-Hill and Terry (2007) hypothesized that the optimism that discrepant low self-esteem individuals possess may lead them to adopt higher standards for themselves, and to judge themselves more critically when those standards are not met. In line with this reasoning,
Zeigler-Hill and Terry found that discrepant low self-esteem is correlated with both adaptive and maladaptive forms of perfectionism – the latter of which have been linked to a whole host of symptoms of maladjustment, including depression, anxiety, and obsessive-compulsiveness (Hewitt & Flett, 1991). Thus, while discrepant low self-esteem may be associated with such positive traits as optimism, the high self-standards adopted by discrepant low self-esteem individuals may also result in negative psychological outcomes. It is therefore important to understand the conditions under which individuals with discrepant low self-esteem might be susceptible to such negative outcomes.

In this research, we examined negative affect as one such undesirable consequence. Specifically, our investigation focused on whether self-awareness triggers negative affect among individuals with discrepant low self-esteem. According to the objective self-awareness theory (Duval & Wicklund, 1972), self-focused attention leads people to compare their current state to their standards or ideals. When one’s current state falls short of one’s ideals, negative affect ensues. It has been suggested that implicit measures of self-esteem tap our “ideal self-schemas” while explicit measures tap our “actual self-schemas” (Franck, De Raedt, & De Houwer, 2007). Thus, for individuals with discrepant low self-esteem, the high implicit self-esteem portion indicates that they hold themselves to higher standards and lofty ideals, and the low explicit self-esteem portion indicates that they feel their current state falls to match those ideals. Self-awareness should therefore activate this discrepancy, resulting in negative affect.

In this study, we measured implicit and explicit self-esteem and exposed half of the participants to a self-awareness manipulation. We then assessed negative affect as our dependent variable.

Method
Participants

Participants were 145 undergraduate students (119 females) who participated in the study in exchange for extra credit in a psychology course.

Materials

*Rosenberg self-esteem scale.* The Rosenberg self-esteem scale (Rosenberg, 1965) was used to measure explicit self-esteem. Participants responded to 10 statements using a response scale that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). Sample items include “I feel that I am a person of worth, at least on an equal basis with others” and “All in all, I am inclined to feel that I am a failure” (reverse scored). Participants’ responses on the 10 items were averaged to form an explicit self-esteem score (ESE).

*Self-esteem Implicit Associations Test (IAT).* Our measure of implicit self-esteem was the Self-esteem IAT (Greenwald & Farnham, 2000), which has been found to have some of the highest reliability and validity indicators among existing implicit self-esteem measures (Bosson et al., 2000). The Self-esteem IAT assesses the ease of associating the self with pleasant and unpleasant stimuli. Participants were instructed to categorize various words into self/other (“target”) categories or pleasant/unpleasant (“attribute”) categories. The word stimuli included self- and other-related pronouns (e.g., I, me, they, theirs), and pleasant and unpleasant words (e.g., good, palace, poor, war). Participants first categorized the stimuli into the attribute categories (Block 1; 20 trials) and into target categories (Block 2; 20 trials). The attribute and target categories were then paired, and participants were to categorize the stimuli as belonging to either of the combined categories (Block 3; 20 practice and 40 critical trials). In Block 4 the target categories were reversed, and participants completed 20 practice trials to familiarize themselves with the new order. In Block 5, the reversed categories were paired with the attribute
categories from Block 1. Participants completed 20 practice and 40 critical trials in this block. Blocks 3 and 5 were congruent if the “self” and “pleasant” shared a response key, and were incongruent if the “self” and “unpleasant” shared a response key. Half of the participants completed the congruent block first followed by the incongruent block; the remaining participants completed the blocks in the reverse order. The order of the congruent versus incongruent blocks did not interact with any of the other factors in our analyses and will not be further discussed.

The implicit self-esteem score (ISE) comprised of the $D$ index computed according to the new IAT scoring algorithm (Greenwald, Nosek, & Banaji, 2003)\(^1\). Essentially, this value represents the difference in reaction time between congruent trials and incongruent trials, divided by the standard deviation. Higher values of $D$ indicate a greater ease of associating self-related pronouns with pleasant words and thus higher ISE.

**Self-awareness manipulation.** The self-awareness manipulation was posed as a memorization task in which participants were given 3 mins to memorize nine small objects (e.g., a glue stick, a pack of crayons) attached to a 22” x 28” poster board. Participants in the self-awareness condition were exposed to a poster board containing a small mirror in the center of the board. Participants were instructed to hold the board on their laps. This was to ensure that the mirror would be leveled with participants’ faces, causing them to see their own reflection while they completed the memorization task, though they were not explicitly told to focus on the mirror or on themselves in any way. Participants in the control condition were instead exposed to an envelope in the center of the board.

**Affect measure.** We used a disguised affect measure adapted from previous research (Hass, Katz, Rizzo, Bailey, & Moore, 1992; Koole, Smeets, van Knippenberg, & Dijksterhuis,
The task was described to participants as a test of subliminal perception. Participants were shown a series of flashes on the computer, which were ostensibly words presented beyond conscious recognition. In reality, participants were shown subliminal nonsense words for 15 ms, backmasked by a string of # signs for 100 ms. After each flash, participants were given four alternatives, one of which was said to correspond to the subliminally presented word. Participants were asked to rely on their “gut feeling” in deciding which of the four words was the one they saw in the flash. Ten of the trials consisted of a negatively valenced word (e.g., down, depressed) as one of the four response alternatives, and 10 other trials consisted of a positively valenced word (e.g., happy, joyful). There were also 5 filler trials containing emotionally neutral words. All 25 trials were presented to participants in a random order, and the measure was given twice, once pre-manipulation and once post-manipulation, with different stimulus words each time. Negative and positive affect scores were calculated by adding the number of times participants chose negative and positive items as their responses, respectively, and a change score was computed by subtracting the pre-manipulation negative and positive affect scores from the post-manipulation negative and positive affect scores. Thus, a higher score indicates a negative or positive affect change, respectively. Even though this task yields both positive and negative affect scores, our hypothesis is specific to the negative affect component because self-awareness has not been consistently linked with positive affect (Mor & Winquist, 2002). Our data analyses will therefore be focused on the negative affect score.

The disguised affect measure is based on the notion that our affect can be misattributed to a neutral source (Murphy & Zajonc, 1993; Payne, Cheng, Govorun, & Stewart, 2005) – in this case, to the perception of purportedly subliminal words. Similar misattribution-based measures of affect have been shown to correlate with self-reported affect and trait measures of positivity.
and negativity (Quirin, Kazén, & Kuhl, in press), and to serve as a better predictor of endocrine stress responses than self-reported affect (Quirin, Kazén, Rohrmann, & Kuhl, 2009). Because our self-awareness manipulation is rather subtle, we felt that a disguised measure of affect would be a better tool than a self-report measure for capturing the automatic activation of affect. In addition, a disguised affect measure would serve to avoid the biases on self-reported affect that may result from conscious reflection or self-presentational concerns (see Quirin et al., in press; Robinson & Clore, 2002, for further discussion on biases in self-reports of affect). Nevertheless, in this task participants were specifically instructed to use their “gut feelings” to guide their subliminal perception. We thus believe that responses on this measure arise from participants’ (misattributed) affect rather than purely cognitive associations.

Procedure. Up to three participants took part in each experimental session. Participants were led to the laboratory and seated at individual computer workstations separated by solid panels and equipped with the MediaLab and DirectRT software. Participants were told that the study examined the relationship between different personality and cognitive tasks. Participants completed the pre-manipulation affect measure, the Self-esteem IAT, and the Rosenberg self-esteem scale. Then, participants were given a 10-min filler task in which they were asked to read the profiles of six cities from various parts of the world (e.g., Hong Kong, China; Winnipeg, Canada) and remember the information. The purpose of the filler task was to diminish any self-awareness or self-related affect that may have been activated as a result of having just completed the self-esteem measures. Following the filler task, participants were each given a poster board for the memorization task, which was in fact the self-awareness manipulation. Half of the sessions were randomly assigned to the self-awareness condition while the other half were in the control condition. Participants in the same session were assigned to the same condition to avoid
any suspicion if participants were to accidentally catch a glimpse of another participants’ poster board. Following the self-awareness manipulation, participants completed the post-manipulation affect measure and were thoroughly debriefed, thanked, and dismissed.

Results

*Negative affect.* As in previous research, participants’ ESE and ISE scores did not correlate with one another, \( r(145) = .09, p = .30. \) A hierarchical multiple regression analysis based on recommendations by Aiken and West (1991) was conducted with negative affect change score as the dependent variable. We entered participants’ ESE scores (centered on the mean), ISE scores (centered on the mean), and self-awareness condition in the first step of the regression, the two-way interaction terms in the second step, and the three-way interaction term in the third step. This analysis found no significant overall main effects or two-way interactions, but a significant three-way interaction emerged, \( \beta = -.22, t(137) = -2.17, p = .03. \) As can be seen in Figure 1, there was a ESE x ISE two-way interaction in the self-awareness condition, \( \beta = -.71, t(137) = -2.31, p = .02, \) but not in the control condition, \( \beta = -.07, t(137) = -.84, p = .40. \)

Decomposing this interaction at 1 SD above and below the mean of the two continuous variables revealed that in the self-awareness condition, participants low in ESE and high in ISE showed a greater change in negative affect than participants with low ESE and low ISE, \( \beta = .58, t(137) = 2.29, p = .02. \) They also scored marginally higher than participants with high ESE and high ISE, \( \beta = .40, t(137) = 1.92, p = .06. \) In addition, among low ESE/high ISE participants, those in the self-awareness condition showed higher negative affect change compared to those in the control condition, \( \beta = -.43, t(137) = -2.03, p = .04. \) These results confirmed our hypothesis that self-awareness increases negative affect among participants with discrepant low self-esteem.
Somewhat unexpectedly, it was also found that participants with low ESE and low ISE showed a significant reduction of negative affect in the self-awareness condition compared to the control condition, $\beta = .36$, $t(137) = 2.06$, $p = .04$.

For the control condition, we found no main effects or ISE x ESE interaction, $p_s > .39$.

*Positive affect.* A separate hierarchical multiple regression analysis on the positive affect scores yielded no significant main effects or interactions.

**Discussion**

Individuals with discrepant low self-esteem – or the combination of high implicit self-esteem and low explicit self-esteem – have been shown in previous literature to exhibit greater perfectionism (Zeigler-Hill & Terry, 2007). In this study, we sought to examine whether a self-awareness induction would increase negative affect for discrepant low self-esteem individuals. The rationale for this hypothesis was that self-awareness activates a comparison between the current self and the ideal self (Duval & Wicklund, 1972); for discrepant low self-esteem individuals – who have high, perfectionistic standards for themselves (Zeigler-Hill & Terry, 2007) yet believe that they have failed to achieve those standards – the unfavorable comparison brought on by self-awareness should increase negative affect. Our hypothesis was confirmed: Discrepant low self-esteem participants showed greater increases in negative affect following self-awareness compared to participants with congruent high or low self-esteem, as well as participants in the control condition who were not exposed to the self-awareness manipulation.

Unexpectedly, participants with congruent low self-esteem (low in both explicit and implicit self-esteem) in the self-awareness condition showed a significant reduction in negative affect following the self-awareness induction. Previous research has found that people are motivated to seek out information that confirms their existing self-views, even if those self-views
are negative (Swann, Rentfrow, & Guinn, 2002). Thus, it is possible that self-awareness may have activated ideal self-schemas among the low ESE/low ISE participants that are consistent with what they already believe, thereby reducing negative affect relative to the control condition. We did not find the same drop in negative affect among participants with congruent high self-esteem in the self-awareness condition, however. Because high self-esteem is associated with more emotional stability (Judge, Erez, Bono, & Thoresen, 2002), it is possible that congruent high self-esteem individuals were simply less susceptible to changes in affect that may have been invoked by self-verification.

The findings of the current research contribute a greater understanding of the discrepant low self-esteem phenomenon. In general, the findings of this study suggest that high implicit self-esteem is not necessarily linked to positive outcomes. Indeed, our data lend support to previous work showing that high implicit self-esteem predicts depressive symptomatology (Franck et al., 2007), as well as research linking discrepant low self-esteem to greater anger suppression, depressed attributional style, nervousness, and lower mental health (Schröder-Abé, Rudolph, & Schütz, 2007). Our findings also provide one possible explanation for the link between discrepant low self-esteem and poorer mental health: that self-awareness may be one chronic source of negative affect for discrepant low self-esteem individuals, as there are many opportunities in our daily lives for self-awareness to be provoked (such as looking at oneself in the mirror every morning). Indeed, our research shows that even a subtle form of self-awareness can activate negative affect among discrepant low self-esteem individuals.

One limitation of the current study is that we did not explicitly ask participants to report on their mood. Thus, while we were able to detect automatically activated negative affect among discrepant low self-esteem individuals after a self-awareness induction, it is unclear whether
these participants consciously experienced a lowered mood. And if participants are not explicitly aware of their negative affect, is it truly a harmful consequence? We argue that it is. First, while a single self-awareness episode may not cause dramatic changes in overall affect, repeated instances of self-awareness may have an accumulative effect (Chartrand, van Baaren, & Bargh, 2006). Thus, over time, subtle activations of negative affect may amass into much stronger negative emotions, which can eventually lead to depressive symptoms. Secondly, studies have shown that affect that is not consciously felt can nonetheless exert an influence on our behavior (Winkielman, Berridge, & Wilbarger, 2005), social judgments (Ric, 2004), and psychosomatic symptoms (Lane, 2008), suggesting that negative affect can have a potentially adverse impact on our well-being, regardless of our conscious awareness of the affect.

One potential direction for future research would be to examine the downstream consequences of self-awareness-induced negative affect among individuals with discrepant low self-esteem. One such downstream consequence may be stereotyping and prejudice, which can be a result of implicit self-threat (Cheng, 2009). As research in the domain of discrepant low self-esteem is only in its infancy, more studies will help us better understand the implications of discrepant low self-esteem for psychological functioning.
References


Sherman, J. W., Gawronski, B., Gonsalkorale, K., Hugenberg, K., Allen, T. J., & Groom, C. J.

*Psychological Review, 115,* 314-335.


Author Note

Clara Michelle Cheng, Department of Psychology, American University; Olesya Govorun, TNS; Tanya L. Chartrand, The Fuqua School of Business, Duke University.

We would like to thank Jane Ledbetter, Lisa McQuighan, and Gigi Petito for their able assistance with data collection.

Correspondence should be addressed to Clara Michelle Cheng, Department of Psychology, American University, 4400 Massachusetts Ave NW, Washington, DC 20016; Email: cheng@american.edu.
Footnotes

1Due to an oversight on our part, we had used an older version of the Self-esteem IAT that was programmed before the publication of the new scoring algorithm (Greenwald et al., 2003). As a result, data from the practice blocks of the IAT were not recorded and were thus not used in calculating participants’ IAT scores. We otherwise followed all steps of the new scoring algorithm.
Figure Caption

Figure 1. Effect of self-awareness manipulation on negative affect change as a function of implicit self-esteem and explicit self-esteem levels. Both implicit and explicit self-esteem are plotted at 1 SD above and below the mean. Higher values on the y-axis indicate greater levels of post-manipulation negative affect compared to pre-manipulation negative affect.
Effect of Self-Awareness

Self-Awareness Condition

Control Condition

Negative Affect Change

Low ESE  High ESE

Low ISE  High ISE