Research Report

UNCONSCIOUS UNEASE AND SELF-HANDICAPPING: Behavioral Consequences of Individual Differences in Implicit and Explicit Self-Esteem

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Abstract—*In contrast to measures of explicit self-esteem which assess introspectively accessible self-evaluations, measures of implicit self-esteem assess the valence of unconscious, introspectively inaccessible associations to the self This experiment is the first to document a relationship between individual differences in implicit self-esteem and social behavior Participants completed either a self-relevant or a self-irrelevant interview, and were then rated by the interviewer on their anxiety When the interview was self-relevant apparent anxiety was greater for participants low in implicit self-esteem than for participants high in self-esteem, implicit self-esteem did not predict anxiety when the interview was self-irrelevant Explicit self-esteem did not predict apparent anxiety in either interview, but did predict participants' explicit self-judgments of anxiety Self-handicapping about interview performance was greater for participants low in both explicit and implicit self-esteem than for those high in these measures The experiment provides direct evidence that effects of implicit and explicit self-esteem may be dissociated*

The past 15 years have witnessed an explosion of research on the implicit self-concept which we define as introspectively inaccessible cognitive and evaluative associations with the self (for reviews, see Greenwald & Banaji, 1995 Kihlstrom et al , 1988, Pelham & Hetts, 1999) Research on the implicit self-concept has clustered around three themes (a) social influences on the implicit self-concept (e g , Bylsma, Tomaka, Luhtanen, Crocker, & Major, 1992 Dodgson & Wood, 1998) (b) cognitive and affective factors associated with the implicit self-concept (e g , Bargh, 1982 Higgins, Van Hook, & Dorfman, 1988, Paulhus & Levitt, 1987, Strauman & Higgins, 1987), and (c) the relationship between the implicit self-concept and explicit or conscious attitudes and preferences (e g , Greenwald & Banaji, 1995, Kitayama & Karasawa, 1997, Markus, 1977, Markus, Crane, Bernstein, & Siladi, 1982, Nuttin, 1985) Despite the extensive theoretical and empirical attention, there remain to date no attempts to link the implicit self-concept to behavioral outcomes This omission is striking given the long-standing interest in linking the explicit self-concept to behavior (e g , Markus & Wurf, 1987, Rosenberg, 1965, Wylie 1960), as well as the recent interest in linking implicit stereotyping to social behavior (Chen & Bargh, 1997, Fazio Jackson, Dutton, & Williams, 1995)

The present study rectifies this omission by demonstrating that individual differences in implicit self-esteem are associated with behavioral outcomes of direct consequence to the self, and moreover that implicit and explicit self-esteem have independent consequences In so doing, this research demonstrates both the validity of a new measure of implicit self-esteem and the utility of implicit self-esteem for predicting particular social behaviors

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IMPLICIT AND EXPLICIT SELF-ESTEEM

The primary distinction between implicit and explicit self-esteem concerns whether self-evaluations are accessible to conscious awareness The idea that important aspects of the self-concept may be introspectively inaccessible is an old one (e g , Freud, 1923/1965), but social psychologists have only recently begun to revisit the issue Although few studies have directly investigated the relationship between implicit and explicit self-esteem, existing published evidence suggests that the correlation between them is small at best (Hetts, Sakuma, & Pelham, in press, Pelham & Hetts, 1999) Such findings parallel research finding low or no correlations between implicit and explicit attitudes (e g , Greenwald, McGhee, & Schwartz, 1998, Wittenbrink, Judd, & Park, 1997), implicit and explicit stereotypes (e g , Banaji & Hardin 1996), and implicit and explicit motives (e g , McClelland, Koestner, & Weinberger, 1989 Woike, 1995)

Although low correlations between implicit and explicit measures are provocative, they do not provide incontrovertible evidence that implicit and explicit self-esteem are dissociated Low correlations can be obtained for any number of reasons, not the least of which is that one of the measures is low in construct validity Although research measuring and manipulating implicit self-esteem provides important evidence of the utility of the construct (e g , Greenwald & Banaji, 1995), the predictive utility of implicit self-esteem requires that it is reliably associated with theoretically specifiable behaviors and attitudes

IMPLICIT SELF-ESTEEM AND BEHAVIOR

What kinds of behaviors should implicit self-esteem predict? Implicit self-esteem may influence behaviors that are not normally subject to conscious control Although many forms of nonverbal communication, including eye contact and fidgeting with hands or feet (e g Crosby, Bromley, & Saxe, 1980 Mehrabian, 1971), appear to be difficult or impossible to control strategically, recent research suggests that they may be influenced by implicit cognition For example, research on implicit stereotyping links (a) implicit antiblack racism with negative nonverbal behavior toward an African American (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997, Fazio et al , 1995), (b) implicit activation of stereotypes of the elderly with physical slowness (Bargh, Chen, & Burrows, 1996), and (c) implicit activation of stereotypes of African Americans with hostile behaviors toward others (Bargh et al , 1996, Chen & Bargh, 1997) Interestingly, these studies have not found an association between nonverbal behavior and explicit stereotyping For example, European Americans' negative nonverbal behavior toward African Americans is typically unrelated to self-reported racial attitudes (Crosby et al , 1980) We therefore

hypothesized that implicit self-esteem, but not explicit self-esteem, influences nonverbal behavior, particularly in self-relevant interactions Moreover, we predicted that if implicit self-esteem functions in part as a resource utilized when navigating challenging interpersonal situations, individuals high in implicit self-esteem may exhibit smaller effects of self-threat than individuals low in implicit self-esteem

A related issue is whether implicit self-esteem might affect self-perceptions of nonverbal behavior Can individuals assess the effect of implicit self-esteem on their behavior, or is this effect implicit? If people rely on their explicit self-knowledge to understand and explain their behavior (Vorauer & Miller, 1997), then people's accounts of their own behavior may be more closely related to explicit than to implicit self-esteem Hence, explicit but not implicit self-esteem should predict conscious assessments of nonverbal behavior, and self-reported and other-assessed estimates of nonverbal behavior should not be strongly associated

Furthermore, behaviors that are habitually subject to consciously controlled processes also may be relatively more sensitive to explicit than implicit influence For example, self-presentation strategies are often conscious and strategic responses to the perceived social situation (e g , Baumeister, 1982, Jones & Pittman, 1982, Snyder, 1974, Tedeschi, 1981), and hence may depend relatively more on explicit than implicit cognitions

To investigate these hypotheses, we assessed participants' apparent nonverbal anxiety, self-reported assessments of their behavior, and self-handicapping regarding their behavior during either a self-relevant interview or a self-irrelevant interview We expected that (a) apparent anxiety, as judged by the interviewer would be predicted by implicit self-esteem, (b) apparent anxiety would not be predicted by explicit self-esteem, (c) self-judged anxiety would be predicted by explicit but not implicit self-esteem, and (d) self-handicapping would be more related to explicit self-esteem than implicit self-esteem

METHOD

Overview and Design

Sixty-four undergraduates (41 women, 23 men) enrolled in an introductory psychology course at the University of California, Los Angeles, participated in a study on "talking about health" in exchange for credit toward a course requirement Participants first completed measures of implicit and explicit self-esteem as "background information" and were then interviewed about either their own or their best friends' "emotional health" The interviewer rated the participants' apparent nonverbal anxiety during the first 5 min of the interviews After the interviews, participants rated their own anxiety during the interviews and completed a self-handicapping questionnaire We examined the interviewer's ratings of participants' anxiety as well as participants' judgments of their interview performance as a function of interview type and median-split self-esteem scores in a 2 (implicit self-esteem high vs low) × 2 (explicit self-esteem high vs low) × 2 (interview type self-relevant, self-irrelevant) mixed factorial design

Materials

Measure of explicit self-esteem

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used to measure explicit self-esteem Scores were obtained from 10 items, each measured on a 4-point Likert scale Example items include "I feel that I have a number of good qualities" and "At times I think I am no good at all"

Measure of implicit self-esteem

Measures of implicit self-esteem assess the degree to which the self is cognitively associated with positive versus negative thoughts Our measure of implicit self-esteem was adapted from existing response-latency measures of the automatic attitude-activation effect, in which exposure to an attitude object facilitates judgments of words that share the valence of the attitude object (e g , Fazio et al , 1995, Fazio, Sanbonmatsu, Powell, & Kardes, 1986, Hetts et al , in press) We operationalized implicit self-esteem as the degree to which judgments of affectively positive words were relatively quick and judgments of affectively negative words were relatively slow after exposure to self-relevant words, controlling for responses after self-irrelevant words

The implicit self-esteem measure was administered on a Macintosh IIsi computer running PsyScope software (Cohen, MacWhinney, Flatt, & Provost, 1993) Participants judged each of a series of unambiguously valenced words as "positive" or "negative" as quickly and accurately as possible after subliminal exposure to either a self-relevant prime word (*me, myself*) or a self-irrelevant prime word (*two, manner*) The positive words were *good, proud, superior, worthy, strong,* and *winner*, the negative words were *bad, ashamed, inferior unworthy, weak,* and *loser* "Positive" and "negative" judgments were entered on two keys marked with "+" and "–" symbols Each prime appeared 24 times for each subject, and target words were randomly selected to appear after each prime, thus creating 96 judgment trials in the measure

Each judgment trial consisted of an orienting stimulus (*) alerting participants to press the space bar to continue, a forward mask of a random letter string for 50 ms a prime word for 17 ms, a blank screen for 17 ms, a backward mask of the same random letter string for 50 ms a blank screen for 100 ms, a target word that appeared on-screen until the judgment was entered, and an intertrial interval of 500 ms Thus, the signal onset asynchrony (SOA) was 184 ms (See Fig 1 for an illustration of the sequence of the stimuli) Response latencies were log transformed to correct for positive skew To create implicit self-esteem scores, we subtracted the average response latency to positive target words from the average response latency for negative target words separately for trials with self-relevant primes and self-irrelevant primes The value for the trials with self-irrelevant primes was subtracted from the value for the trials with self-relevant primes to create a single implicit self-esteem score for each participant Hence, higher composite scores indicated more positive implicit self-esteem For the purpose of analyses, scores were median split, creating groups of participants high (M = 0 86, SD = 0 71) and low (M = –1 00, SD = 0 74) in implicit self-esteem

Interview protocol

The interview on "emotional health" was designed to mimic popular conceptions of the kinds of questions psychologists ask All participants were asked the identical series of questions, but those in the self-relevant condition answered the questions with regard to their own emotional health and those in the self-irrelevant condition answered the questions with regard to their best friends' emotional health Participants were asked to describe the positive and negative aspects of their own or their best friends' personalities and were also asked other

Sample stimulus:	Stimulus type(presentation time).
IDXFNBO	Forward mask (50ms)
-	
ME	Self Prime (17 ms)
-	
	Blank screen (17 ms)
-	
IDXFNBO	Backward mask (50ms)
-	
	Blank screen (100ms)
-	
GOOD	Positive target (remains onscreen until subject presses "+" or "-" keys to judge valence)

Fig. 1 Order of sample stimuli presented in the implicit self-esteem task This example shows a self-relevant prime and a positive target word

ostensibly projective questions, such as "If [you/your best friend] could be any sort of animal, what animal would that be and why?" A single interviewer—blind to participants' implicit and explicit self-esteem scores—rated participants' nonverbal anxiety level on a scale from 0 to 10 with higher scores indicating more anxiety

Self-handicapping and self-reported anxiety

Six items measured self-handicapping by allowing participants the opportunity to present themselves as having been negatively affected by factors other than the interview (adapted from Steele & Aronson, 1995) Three items, answered on a 7-point scale, involved how much stress participants were currently under, how able to focus they currently felt, and how anxious they usually felt during interviews The other three items assessed whether participants had skipped any meals the day of the experiment, whether there was any aspect of the laboratory setting that made the participants feel anxiety, and how many hours participants had slept the previous night A single self-reported rating on a 7-point scale assessed participants' ratings of how anxiety-provoking they found the interview to be

RESULTS

As expected from previous research, implicit self-esteem and explicit self-esteem were uncorrelated across participants ($r = -05$, $p > 70$) In addition, as anticipated, we found that individual differences in implicit self-esteem predicted nonverbal anxiety during the interview, whereas individual differences in explicit self-esteem predicted explicit self-handicapping about the interview Primary analyses consisted of a series of 2 (interview topic) × 2 (high vs low implicit self-esteem) × 2 (high vs low explicit self-esteem) analyses of variance (ANOVAs) on the interviewer's ratings of nonverbal anxiety, participants' self-reported ratings of their anxiety, and participants' self-handicapping scores

Interviewer Ratings of Nonverbal Anxiety

As predicted, implicit self-esteem was related to participants' apparent nonverbal anxiety in the self-relevant but not the self-irrelevant interview, as indicated by a significant planned contrast (weights −1 −1, +3, −1), $t(18\ 5) = 3\ 29$, $p < 004$ ($d = 1\ 53$) As shown in Figure 2, although participants high in implicit self-esteem exhibited equivalent anxiety regardless of whether the interview was self-relevant ($M = 4\ 57$ $SD = 1\ 65$) or self-irrelevant ($M = 4\ 64$, $SD = 1\ 98$), $t(1, 51) = 0\ 10$, $p > 90$ ($d = 0\ 03$), participants low in implicit self-esteem exhibited more anxiety when the interview was self-relevant ($M = 6\ 54$, $SD = 2\ 07$) than when it was self-irrelevant ($M = 4\ 07$, $SD = 1\ 98$), $t(1, 51) = 3\ 29$, $p < 002$ ($d = 0\ 92$) Although apparent anxiety in the self-irrelevant interview was equivalent for participants high and low in implicit self-esteem, $t(1, 51) = 0\ 79$, $p > 40$ ($d = 0\ 22$), participants low in implicit self-esteem exhibited more anxiety than participants high in implicit self-esteem during the self-relevant interview, $t(1, 51) = 2\ 59$ $p < 01$ ($d = 0\ 73$) In sum, we found that although implicit self-esteem did not predict the nonverbal anxiety of participants who completed the self-irrelevant interview, implicit self-esteem did predict the nonverbal anxiety of participants who completed the self-relevant interview The interviewer rated participants as more anxious when they were interviewed about their own emotional health ($M = 5\ 52$, $SD = 2\ 11$) than when they were interviewed about their best friends' emotional health ($M = 4\ 36$, $SD = 1\ 97$), as indicated by a significant main effect of interview topic, $F(1, 47) = 4\ 94$, $p < 03$ ($d = 0\ 65$)

In contrast, explicit self-esteem did not significantly moderate participants' apparent anxiety, as indicated by a nonsignificant planned comparison with identical cell weights, $t(34\ 3) = 1\ 11$, $p > 25$ ($d =$

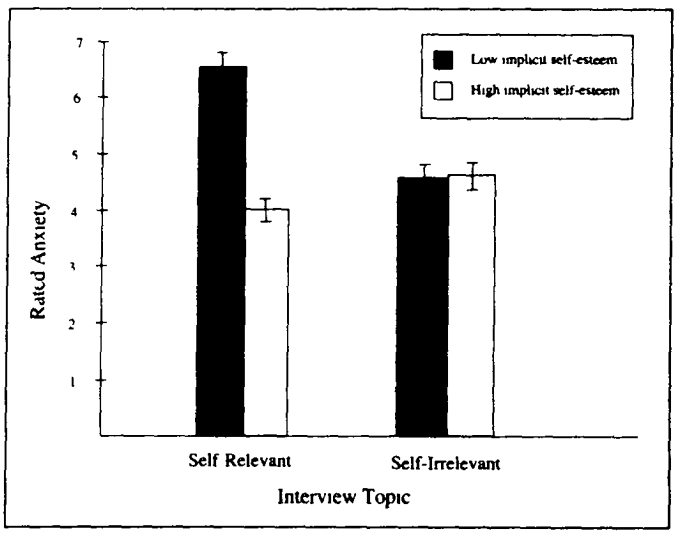

Fig. 2. Apparent nonverbal anxiety as a function of interview topic and implicit self-esteem

0 38), and a nonsignificant Interview Type × Explicit Self-Esteem interaction, $F < 1$

Participant Ratings of Anxiety

Individuals were unaware of implicit influences on their apparent anxiety as indicated by a nonsignificant correlation between self-reported and apparent anxiety, $r = 12$, $p > 20$ Instead, participants appeared to rely on their conscious self-concepts to guide their perceptions of their own behavior Specifically, participants with low explicit self-esteem reported feeling more anxiety ($M = 3\ 43$, $SD = 1\ 36$) than did participants with high explicit self-esteem ($M = 2\ 76$, $SD = 1\ 05$), $F(1, 47) = 3\ 56$, $p < 065$ ($d = 0\ 55$) However, a 2 (interview topic) × 2 (high vs low implicit self-esteem) × 2 (high vs low explicit self-esteem) ANOVA revealed no significant main effects or interactions involving implicit self-esteem, all Fs < 1 Interestingly, interview topic did not affect self-reported anxiety, $F < 1$, $p > 60$

Self-Handicapping

Because self-presentational strategies often involve deliberate, conscious thought, we expected participants' self-handicapping about their interview performance to be more affected by explicit than by implicit self-esteem Results supported our hypothesis that explicit self-esteem would predict self-handicapping, but suggested some effects of implicit self-esteem as well, as indicated by a 2 (interview topic) × 2 (high vs low implicit self-esteem) × 2 (high vs low explicit self-esteem) ANOVA on the mean of the z-score-transformed self-handicapping items Participants with low explicit self-esteem self-handicapped more than participants with high explicit self-esteem ($M = 0\ 23$, $SD = 0\ 42$, and $M = -0\ 29$, $SD = 0\ 54$, respectively), $F(1, 47) = 18\ 33$, $p < 001$ ($d = 1\ 25$) This result is consistent with Tice's (1991) finding that individuals with low explicit self-esteem self-handicap more in threatening situations than do individuals with high explicit self-esteem Unexpectedly, participants also self-handicapped more when they discussed their best friend ($M = 0\ 16$, $SD = 0\ 57$) than when they discussed themselves ($M = -0\ 17$, $SD = 0\ 47$), $F(1, 47) = 5\ 90$, $p < 02$ ($d = 0\ 71$)

Interestingly, self-handicapping was also greater for participants with low implicit self-esteem ($M = 0\ 12$, $SD = 0\ 55$) than for participants with high implicit self-esteem ($M = -0\ 12$, $SD = 0\ 51$), $F(1, 47) = 4\ 74$, $p < 04$ ($d = 0\ 64$) Hence, explicit and implicit self-esteem had parallel but independent effects on self-handicapping, although the effect of explicit self-esteem was approximately twice as large as the effect of implicit self-esteem No other significant effects were found, all Fs < 1

DISCUSSION

We found support for four primary predictions First, we found that participants low in implicit self-esteem appeared more anxious than participants high in implicit self-esteem during the self-relevant interviews, but not during the self-irrelevant interviews These results provide evidence for the discriminant validity of the implicit self-esteem construct Second, we found that anxious nonverbal behavior was unrelated to explicit self-esteem This result is consistent with implicit-stereotyping research demonstrating that nonverbal behavior reflects implicit more than explicit cognitions Third, we found that explicit, but not implicit, self-esteem predicted individuals' own ratings of their anxiety, paralleling Vorauer and Miller's (1997) finding that individuals were unaware of implicit influences on their nonverbal behavior Fourth, we found that explicit self-esteem predicted self-handicapping more strongly than did implicit self-esteem Further, both implicit and explicit self-esteem had statistically independent effects on participants' self-handicapping, providing yet another kind of evidence of the construct validity of the implicit self-esteem measure

These findings suggest that implicit and explicit self-esteem may most strongly predict different dimensions of behavior (i e , consciously controlled vs unconsciously controlled) Our research found that implicit self-esteem more strongly affected apparent (nonverbal) anxiety, whereas explicit self-esteem more strongly affected self-handicapping and participants' self-reported anxiety These findings thus parallel research on implicit stereotyping demonstrating that implicit attitudes predict automatic responses and behaviors, whereas explicit attitudes predict more deliberative responses (e g , Dovidio et al , 1997) Interestingly, however, our research does suggest that implicit self-esteem influences individuals' use of self-presentational strategies An important goal of future research should be to establish when implicit self-esteem affects self-esteem-protecting strategies such as self-handicapping

These findings also suggest the profitability of considering multiple dimensions of "implicitness" in research on implicit self-esteem Implicit self-esteem can refer to (a) unconscious components of the self-construct, (b) participants' unawareness that their self-esteem is being assessed, or (c) effects of self-reportable self-esteem that occur outside of conscious awareness Although we defined implicit self-esteem around the first characteristic, our experiment had all three characteristics Each characteristic is conceptually distinct and should be specifically identified in future research on implicit self-esteem For example, the third conceptualization of implicit self-esteem refers to an effect that is implicit rather than to self-concept contents that are implicit Either conscious or unconscious self-esteem could show implicit effects, for example, Greenwald and Banaji (1995) considered implicit effects of self-esteem in their extensive review without distinguishing between effects caused by conscious versus unconscious elements of the self-concept Conversely individuals might suspect that an unconscious element of their self-esteem influences their behavior while remaining unable to identify the content of the self-concept behind the effect Such a situation might occur when a person suspects that answers to a projective test will be affected by his or her unconscious self-concept yet remains unable to articulate the content revealed by the test

Finally, we note a disadvantage faced by individuals with low implicit self-esteem Regardless of their level of explicit self-esteem, individuals with low implicit self-esteem appeared nervous in the self-relevant interview Job interviews, court testimony, and social functions also involve self-relevant social interactions, but individuals' apparent anxiety in these interactions may influence inferences about job incompetence, guilt, or lack of social skills This experiment suggests that individuals with low implicit self-esteem may be at risk for negative outcomes simply because they display anxiety in threatening self-relevant situations Compounding this problem is the possibility that these individuals may not perceive that they are making a poor impression, and so may not effectively utilize self-presentation strategies such as self-handicapping to repair others' impressions

In sum, the demonstration of a meaningful link between implicit self-esteem and social behavior represents a crucial contribution to a growing literature on implicit social cognition The results of this study demonstrate the usefulness of implicit social cognition for revealing important aspects of cognitive representation and providing new methods for unobtrusive observation This experiment also suggests the promise of implicit social cognition for predicting important social behaviors It remains for future research to fully describe the relationship between conscious and unconscious thought in the production and regulation of social behaviors

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