

Does Self-Threat Promote Social Connection? The Role of Self-Esteem and Contingencies of Self-Worth

Lora E. Park

University at Buffalo, The State University of New York

Jon K. Maner

Florida State University

Six studies examined the social motivations of people with high self-esteem (HSE) and low self-esteem (LSE) following a threat to a domain of contingent self-worth. Whether people desired social contact following self-threat depended on an interaction between an individual's trait self-esteem and contingencies of self-worth. HSE participants who strongly based self-worth on appearance sought to connect with close others following a threat to their physical attractiveness. LSE participants who staked self-worth on appearance wanted to avoid social contact and, instead, preferred a less interpersonally risky way of coping with self-threat (wanting to enhance their physical attractiveness). Implications for theories of self-esteem, motivation, and interpersonal processes are discussed.

Keywords: contingencies of self-worth, appearance, motivation, interpersonal, threat

Aversive experiences are an inevitable feature of human existence. Everyone, at some point, experiences some form of physical, emotional, or psychological pain. Threats to the physical self, from breaking a leg to catching a cold, are likely to elicit distress and mobilize the immune system and other internal resources to defend against the threat. Similarly, threats to the psychological self, such as performing poorly on a test, being rejected by others, or feeling unattractive, may also evoke distress and motivate efforts to cope with the threat. Just as reactions to physical threats involve the operation of myriad systems within the body, the way people respond to psychological threats may depend on a variety of psychological factors within the self.

How do people respond when some aspect of the self is threatened? Because humans are fundamentally social, one response to threat may be to turn to other people for support and affirmation. Interacting with others, however, may also involve risk: Seeking connection with others could result in rejection or failure to acquire the social support and affirmation one seeks. Thus, although some people might respond to threat by wanting to draw closer to others, other people might respond by wanting to withdraw from others. We propose that people's motivation to seek versus avoid social contact following self-threat may depend on an interaction between two key aspects of the person: (a) contingencies of self-worth—the extent to which one bases self-worth in the threatened domain—and (b) one's trait level of self-esteem.

People with high self-esteem (HSE) are generally self-confident and believe that others will be responsive to their needs (Baumeister, 1998; Leary & Baumeister, 2000; Murray, Holmes, & Collins, 2006). HSE people may therefore be inclined to seek social contact following a threat to a domain of contingent self-worth (i.e., a domain in which one strongly bases his or her self-esteem). In contrast, people with low self-esteem (LSE) generally lack self-confidence and tend to worry about rejection (e.g., Baldwin & Sinclair, 1996; Leary & Baumeister, 2000). Thus, LSE people may want to avoid rather than seek social contact and, instead, pursue alternative means of reaffirming the self. Importantly, these hypotheses imply that the interaction between trait self-esteem and degree of self-worth contingency, rather than either of these on their own, will determine people's responses to self-threat. We tested these hypotheses in six experiments by examining responses to threat in the domain of physical appearance—a domain that is closely linked to feelings of both self-esteem and social belonging (Diener, Wolsic, & Fujita, 1995; Dion, Berscheid, & Walster, 1972; Thornton & Moore, 1993).

Contingencies of Self-Worth and Responses to Threat

William James (1890) observed that people tend to base their self-worth in certain domains, but not in others. For James, it was his success as a psychologist, but not his skills as a linguist, that influenced his self-esteem. Indeed, individuals differ in the domains on which they stake their self-worth (Crocker & Wolfe, 2001). Whereas some individuals derive self-worth from gaining others' approval, outperforming others, or being physically attractive, others may base self-worth more on being academically competent, virtuous, or having love and support from one's family (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). This model of contingent self-worth is consistent with theorizing by other schol-

Lora E. Park, Department of Psychology, University at Buffalo, The State University of New York; Jon K. Maner, Department of Psychology, Florida State University.

Correspondence concerning this article should be addressed to Lora E. Park, Department of Psychology, University at Buffalo, The State University of New York, 344 Park Hall, Buffalo, NY 14260. E-mail: lorapark@buffalo.edu

ars who have emphasized the benefits of assessing specific aspects of the self, rather than focusing solely on global, trait self-esteem (Campbell, 1990; Deci & Ryan, 2000; Kernis & Waschull, 1995; Pelham, 1995; Swann, Chang-Schneider, & McClarty, 2007; Tafarodi & Swann, 2001).

People strive to maximize the emotional highs and avoid the emotional lows that accompany successes and failures in domains on which their self-worth is based (Crocker & Wolfe, 2001). Events that reflect negatively on an aspect of the self are viewed as threatening to the extent that one's self-worth is invested in the domain. For example, threats to academic competence evoke negative affect and reduce state self-esteem more strongly among those who base self-worth on academic success than among those who do not (Crocker, Karpinski, Quinn, & Chase, 2003; Crocker, Sommers, & Luhtanen, 2002; Park & Crocker, 2008). Consequently, threats to specific aspects of the self may elicit coping responses, but only to the extent that one's self-worth is staked on the threatened domain (Crocker & Park, 2004; Crocker & Wolfe, 2001). We therefore predicted that self-threat would evoke coping-based social motivations (e.g., the desire to seek out or to avoid other people) most strongly among individuals who based their self-worth on the threatened domain.

In the current research, we tested this hypothesis within the domain of physical appearance—a domain that depends largely on the views of others and is therefore highly susceptible to feedback (Crocker, Luhtanen, et al., 2003; Gutierrez, Kenrick, & Partch, 1999). Perceptions of physical attractiveness are closely tied to feelings of both self-esteem and social acceptance; individuals regarded as physically attractive tend to have higher self-esteem, are perceived to be more socially skilled and likeable, and are desired as friends and romantic partners more than are those regarded as physically unattractive (Dion, Berscheid, & Walster, 1972; Harter, 1993; Maner, Gailliot, Rouby, & Miller, 2007; Snyder, Tanke, & Berscheid, 1977). Because our hypotheses pertained to the social consequences of self-threat (i.e., whether people are motivated to seek or avoid social contact), the domain of physical attractiveness provided an ideal context for examining social motivations in response to threat.

The Desire for Social Contact Following Self-Threat

When people feel threatened or anxious, they commonly turn to others for affiliation, affirmation, and support (Baumeister & Leary, 1995; Bowlby, 1969; Kulik & Mahler, 1989; Maner, DeWall, Baumeister, & Schaller, 2007; Schachter, 1959; Taylor et al., 2000; Zimbardo & Formica, 1963). Close others (e.g., kin, close friends) are especially likely to provide help and support in times of need (Clark & Reis, 1988). Consequently, when a contingent aspect of the self is threatened, people may respond with increased desire for social contact, especially with close others, who are likely to provide support and reassurance. This hypothesis is consistent with sociometer theory (Leary, Tambor, Terdal, & Downs, 1995), which suggests that the self-esteem system is designed to monitor one's level of social inclusion by alerting individuals to social cues that connote disapproval, rejection, or exclusion (Leary & Baumeister, 2000). Within this framework, threats to self-esteem are conceptualized as threats that make salient the possibility of social rejection. Thus, people may respond to threats in domains of contingent self-worth with in-

creased desire for social contact because such contact could buttress against threats not only to the self but to one's sense of social acceptance as well.

On the other hand, interacting with other people can involve significant risk. If a social interaction were to go badly, it could reinforce negative self-views. Thus, when an important aspect of the self is threatened, some people may respond by viewing social contact as a potential source of rejection and further negative evaluation, rather than as a source of positive support. Some people may therefore respond to self-threat with a desire to avoid social contact because such contact could exacerbate self-doubt and promote feelings of rejection.

The Role of Trait Self-Esteem

The desire to approach versus avoid social contact following self-threat may be influenced by an individual's trait self-esteem. Specifically, whereas HSE people were expected to desire social contact following a threat to a contingent domain (e.g., appearance), people with LSE were expected to want to avoid social contact following threat to a contingent domain.

HSE people possess sufficient motivation, skills, and resources to enhance their self-esteem following threat (Brockner, Derr, & Laing, 1987; Brown, Dutton, & Cook, 2001; Dodgson & Wood, 1998; Heimpel, Wood, Marshall, & Brown, 2002). Their high self-confidence and self-certainty enable them to take social risks following threat (Baumeister, Tice, & Hutton, 1989). Moreover, HSE people generally feel liked and accepted by others and are less inclined than LSE people to worry about rejection (Leary & Baumeister, 2000). HSE people tend to have a secure attachment style—they believe they are lovable and worthy of care and attention and feel that others will be available and responsive to their needs (Griffin & Bartholomew, 1994). Because they feel socially secure, they do not hesitate to turn toward close others and affirm their close relationships following threat (e.g., Murray, Holmes, MacDonald, & Ellsworth, 1998). Based on these findings, we expected that when HSE people experienced a threat to a domain of contingent self-worth, they would respond with a strong desire to connect with other people, especially with close others.

Compared with HSE people, LSE people possess relatively less favorable self-views and lack self-concept clarity and certainty (Blaine & Crocker, 1993; Campbell, 1990). Daily events have a greater impact on LSE people's self-concept and mood, resulting in greater emotional instability and malleability in self-views (Campbell, Chew, & Scratchley, 1991). Indeed, LSE people overgeneralize failure to other aspects of themselves, leading to increased feelings of shame and humiliation (Brown & Dutton, 1995; Kernis, Brockner, & Frankel, 1989). From a motivational perspective, LSE people become demotivated and withdraw effort following failure because they feel defeated and lack self-efficacy (Brockner et al., 1987; Heimpel et al., 2002). From a limited resource perspective, LSE people believe they possess fewer positive qualities than do HSE people; consequently, they are unlikely to respond to threat by seeking affirmation (Spencer, Josephs, & Steele, 1993; Swann, Griffin, Predmore, & Gaines, 1987).

Interpersonally, LSE people doubt their level of social acceptance, are hypersensitive to signs of relational devaluation, and worry about being rejected (Baldwin & Sinclair, 1996; Downey & Feldman, 1996; Leary & Baumeister, 2000). Because they feel

interpersonally insecure, they are less inclined than HSE individuals to risk interdependence or to turn toward others in times of need (Murray et al., 2006). Instead, their self-doubts promote a cautious and restrained stance in their interactions with others (Baumeister et al., 1989; Campbell & Lavelle, 1993; Heatherton & Vohs, 2000). Given the potential risks inherent in social interaction, coupled with LSE people's low self-certainty, we expected that LSE people would respond to self-threat by wanting to avoid social contact, rather than by trying to seek it.

If LSE people do not respond to self-threat with a desire for social contact, how might they attempt to offset such threats? We hypothesized that threat might motivate these individuals to improve on the specific area(s) in which their feelings of self-worth are based. For example, because LSE individuals who stake self-worth on appearance may not perceive themselves as being particularly attractive, they consequently may be motivated to improve their attractiveness. LSE appearance-contingent¹ people may therefore respond to appearance threats with increased desire to enhance their appearance and to appear more attractive to others. This pattern would be consistent with research suggesting that people who lack a clear and consistent self-concept often adhere to societal standards in order to strengthen their senses of self and identity (Schupak-Neuberg & Nemeroff, 1993; Wheeler, Winter, & Polivy, 2003). Given that LSE people generally possess uncertain, insecure self-views, LSE appearance-contingent people were expected to respond to an appearance threat with greater interest in enhancing their physical attractiveness—the very attribute on which their self-esteem is based.

Overview of Studies

The overarching aim of this research was to identify motivational consequences of experiencing a threat to a domain of contingent self-worth (e.g., appearance) and to examine whether initial social motives differed for people with HSE versus LSE. The dependent measures we used therefore captured relatively direct, early-in-the-stream portrayals of people's motivations immediately following self-threat. We hypothesized that HSE appearance-contingent participants would express greater desire for social contact with close others following self-threat, whereas LSE appearance-contingent participants would seek to avoid social contact. Instead, LSE appearance-contingent participants were expected to respond to appearance threats with increased desire to improve their attractiveness.

Importantly, we expected that the combination of trait self-esteem and appearance contingency of self-worth, over and above either of these variables on their own, would shape responses to self-threat. Thus, in each study we expected to find three-way interactions between experimental manipulations of appearance threat, trait self-esteem, and appearance contingency of self-worth (CSW). In addition, we included analyses and design features throughout the studies to demonstrate the specificity and internal validity of the hypothesized effects. For example, we sought to rule out the possibility that confounding variables, such as social anxiety, neuroticism, vanity, appearance-based rejection sensitivity, gender, race, or age might account for the observed effects. We also compared conditions with appearance threats with various control conditions (e.g., neutral, competence threat, positive ap-

pearance feedback) to test the discriminant validity of experiencing threats to the appearance domain in particular.

Study 1

Study 1 tested the hypothesis that HSE appearance-contingent people would respond to an appearance threat by wanting to affiliate with close others, whereas LSE appearance-contingent people would want to avoid other people following an appearance threat.

Method

Participants and Procedure

One-hundred undergraduate students (66 women, 34 men) completed the study for course credit. All participants in these studies were recruited from the Introductory Psychology Subject Pool at the University at Buffalo. Participants were seated at private cubicles where they completed questionnaires assessing trait self-esteem, contingencies of self-worth, and demographic items (gender, race, age). Participants were randomly assigned to one of two experimental conditions. In the appearance threat condition, participants were instructed as follows:

We all have parts of our body or physical appearance that we are dissatisfied with or feel insecure about. Please take a moment to think about the aspects of your body or physical appearance you do not like about yourself and list them in the spaces below.

In the control condition, participants were given the following instructions:

If you look around, there are many objects in the room you are in. Please take a moment to think about all the objects you see in the room and list them in the spaces below.

Afterward, participants indicated their desire to engage in various activities with close others. Participants were then debriefed and dismissed.

Measures

Self-esteem. The Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965) was used to measure trait self-esteem. Participants reported their agreement with statements such as "On the whole, I am satisfied with myself" (1 = *strongly disagree* to 7 = *strongly agree*). The RSE scale has high internal consistency (in this sample, $\alpha = .90$) and test-retest reliability, and it has been shown to be a reliable and valid measure of self-esteem (Blascovich & Tomaka, 1991).

Appearance CSW. The 35-item Contingencies of Self-Worth Scale (Crocker, Luhtanen, et al., 2003) assesses seven domains on which college students are likely to base their self-worth. The overall CSW scale and each of the subscales have high internal consistency and test-retest reliability, and they are distinct from

¹ Trait self-esteem and appearance CSW were assessed and analyzed as continuous variables in these studies. For the sake of brevity, we refer to those with relative HSE (or LSE) who highly base their self-worth on appearance as *HSE* (or *LSE*) *appearance-contingent participants*.

other personality measures (Crocker, Luhtanen, et al., 2003). In the present research, we were interested in the five-item Appearance CSW subscale. Sample items included (1 = *strongly disagree* to 7 = *strongly agree*) “When I think I look attractive, I feel good about myself” and “When I think I look unattractive, my self-esteem suffers” ($\alpha = .63$).

Desire to affiliate with close others. Five items assessed participants’ desire to be with close others at the moment. Participants were asked “Right now, how much would you like to . . .”: “Talk on the phone with a friend,” “Spend time with a close friend,” “Hang out with friends,” “Write an email to a close other,” and “Make plans with a friend or significant other” (1 = *not at all* to 7 = *very much*). Items were averaged to create an overall measure of desire to affiliate with close others ($\alpha = .70$).

Results and Discussion

A multiple regression analysis examined effects on desire to affiliate with close others. Experimental condition, centered scores for trait self-esteem and appearance CSW and their two-way and three-way interactions were entered simultaneously into a regression equation. To probe significant interactions, we tested the simple effect of appearance CSW in the threat and control conditions among participants with HSE versus those with LSE (i.e., 1 *SD* above and 1 *SD* below the self-esteem *M*). We then plotted expected values on the dependent measure at 1 *SD* above and 1 *SD* below the *M* of self-esteem and appearance CSW (Aiken & West, 1991). In all studies, gender and race were included as covariates because women tend to base self-worth more on appearance than do men, and White students tend to base self-worth more on appearance than do Black students (Crocker, Luhtanen, et al., 2003). Age was included as a covariate because younger students tend to focus more on appearance than do older students (Sheldon, 2005).²

Regression analyses revealed a significant main effect of condition ($\beta = -.21, p < .05$) and the predicted three-way interaction between self-esteem, appearance CSW, and condition ($\beta = .26, p < .05$; see Figure 1). As expected, among HSE participants in the appearance threat condition, higher appearance CSW was associated with wanting to affiliate with close others ($\beta = .58, p < .05$). No effect of CSW was observed for LSE participants who received an appearance threat ($\beta = -.06, p = .84$). In the control condition, there was no relationship between appearance CSW and desire for affiliation among either HSE participants ($\beta = -.31, p = .16$) or LSE participants ($\beta = .04, p = .84$). There were no significant gender differences or moderating effects of gender.

In sum, this study provides preliminary support for the hypothesis that a threat to a domain of contingent self-worth leads to divergent social motivations for people with HSE versus those with LSE. For HSE participants, basing self-worth on appearance led to greater interest in affiliating with close others following an appearance threat. No such pattern was observed for LSE participants, nor did they seek to avoid other people, as we had anticipated. One reason for the lack of findings for LSE participants may have been due to the relatively weak manipulation.

Study 2

In Study 2, we used a more powerful threat manipulation: Participants wrote an essay about a dissatisfying aspect of their

appearance, rather than simply listing negative aspects of their appearance, as participants did in Study 1. Study 2 also sought to clarify the psychological mechanisms underlying responses to appearance threats. Our conceptual framework implies that the responses of HSE and LSE participants reflect a threat to self-esteem and, ultimately, to social belonging. We reasoned that if either of these desires were satisfied, responses that might otherwise be observed among HSE and LSE participants should be reduced. We therefore used priming manipulations to temporarily satiate the desire for either self-esteem or social belonging, via self-affirmation or close relationship priming, respectively. We expected that, in a neutral prime (control) condition, appearance-contingent, HSE participants would want to affiliate with close others, whereas LSE participants would want to avoid others. However, following a self-affirmation or close relationship prime, these responses were expected to be reduced because the desire for self-esteem and belonging would be temporarily satisfied.

Method

Participants and Procedure

A total of 123 students (86 women, 37 men) participated for course credit. As in Study 1, participants were seated at individual cubicles and completed the RSE scale ($\alpha = .90$), the appearance CSW scale ($\alpha = .66$), and demographic items. Next, all participants wrote an essay about a dissatisfying aspect of their appearance, with the following instructions:

We all have parts of our body or physical appearance that we are dissatisfied with or feel insecure about. Please take a moment to think about one aspect of your physical appearance/body/face that you do not like about yourself and write a brief essay about it in the space provided below.

After writing the essay, participants were provided with instructions that varied by experimental condition (neutral, self-affirmation, or close relationship prime). In the neutral prime condition, participants were asked to list an object in the room. In the self-affirmation prime condition, participants were asked to list their greatest personal strength. In the close relationship prime condition, participants wrote down the initials of someone in their life who loved them unconditionally and to whom they could turn in times of need. Following this priming procedure, participants responded to five items assessing their desire to affiliate with close others (see Study 1; $\alpha = .75$), after which they were debriefed and dismissed.

Results and Discussion

Multiple regression analyses examined effects on desire to affiliate with close others following an appearance threat. Experimental condition (dummy coded so as to compare each of the two priming conditions with the control condition), self-esteem, appearance CSW, and their two-way and three-way centered interactions served as predictors, with demographic variables included as covariates.

² Because of space constraints, we do not report results for these covariates in the regression models; these results may be obtained from Lora E. Park.

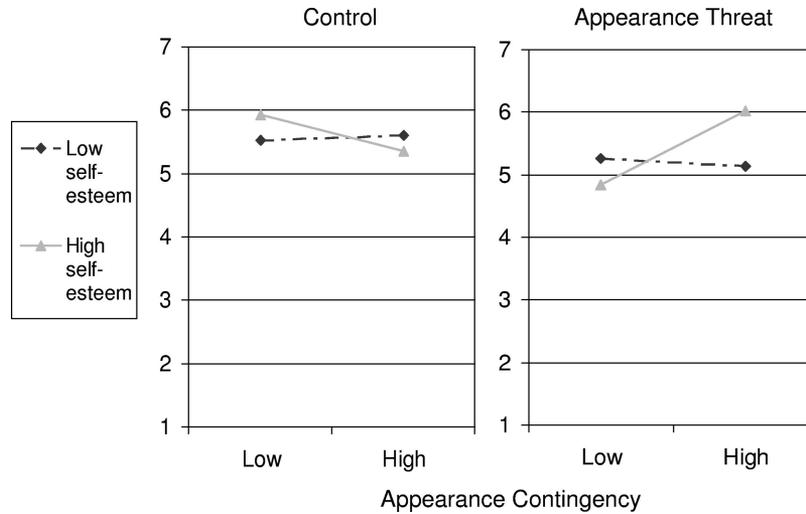


Figure 1. Study 1: Desire to affiliate with close others as a function of self-esteem, appearance contingency of self-worth (CSW), and experimental condition. Means are plotted at 1 SD above and 1 SD below the mean of self-esteem and appearance CSW in each condition.

In addition to a main effect of the self-affirmation prime ($\beta = -.23, p < .05$) and a Self-Esteem \times Appearance CSW interaction ($\beta = .41, p < .01$), we observed the predicted three-way interaction among self-esteem, appearance CSW, and the self-affirmation prime ($\beta = -.25, p < .05$), and among self-esteem, appearance CSW, and the relationship prime ($\beta = -.19, p < .08$). The Self-Esteem \times Appearance CSW interaction was significant in the neutral prime condition ($\beta = .48, p < .01$), but not in the self-affirmation condition ($\beta = -.06, p = .76$) or relationship prime condition ($\beta = -.03, p = .38$; see Figure 2).

As expected, among HSE participants, having high appearance CSW was associated with greater desire to affiliate with close others following the neutral prime ($\beta = .32, p < .09$), which replicates the findings of Study 1. This effect was reduced to non-significance, however, following the self-affirmation prime ($\beta = -.12, p = .59$) and the close relationship prime ($\beta = -.16,$

$p = .56$). In contrast, among LSE participants, having high appearance CSW was associated with less desire to affiliate with close others in the neutral prime condition ($\beta = -.63, p < .01$). Again, this effect was eliminated following the self-affirmation prime ($\beta = .01, p = .98$) and the close relationship prime ($\beta = -.09, p = .64$). Women overall were more likely than men to want to affiliate with close others ($\beta = .30, p < .01$), but gender did not moderate any effects.

In sum, after writing about a dissatisfying aspect of their appearance, HSE appearance-contingent participants showed greater desire to affiliate with close others, whereas LSE appearance-contingent participants wanted to avoid close others. These responses were eliminated, however, following self-affirmation and close relationship priming, suggesting that needs for self-esteem and belongingness were temporarily satisfied. These results are consistent with the hypothesis that the responses of appearance-

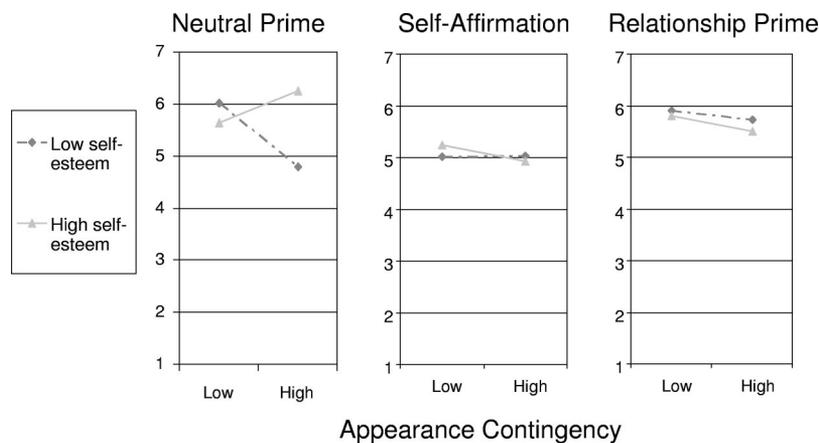


Figure 2. Study 2: Desire to affiliate with close others as a function of self-esteem, appearance contingency of self-worth (CSW), and priming condition. Means are plotted at 1 SD above and 1 SD below the mean of self-esteem and appearance CSW in each condition.

contingent HSE and LSE participants reflect responses to perceived threat—not just to self-esteem, but to belongingness, as well.

Study 3

A limitation of the first two studies pertains to the way in which appearance threat was induced. Having people think about an unattractive feature lacks experimental control, given that the types of thoughts generated may have varied as a function of participants' self-esteem or appearance CSW. Thus, in Study 3 we used a more direct and controlled manipulation of appearance threat: Participants received feedback, ostensibly from another participant. We also included a more rigorous control condition (a threat to intelligence and intellectual competence) to rule out the possibility that any negative feedback, as opposed to feedback related specifically to appearance, would produce equivalent effects. Consistent with the previous findings, we expected that HSE appearance-contingent participants would desire affiliation with close others following negative appearance feedback, but not negative competence feedback. In contrast, we expected that LSE appearance-contingent participants would want to avoid affiliation with close others following negative appearance feedback, but not following competence feedback.

Method

Participants and Procedure

Sixty-eight participants completed the study for course credit. In each session, two unacquainted, opposite-sex students participated. One participant expressed suspicion about the feedback, so the final sample consisted of 67 participants (33 women, 34 men). Participants were initially seated in separate rooms and completed questionnaires assessing individual difference variables. Next, participants were brought together and told that researchers were interested in examining how people form impressions of others. Participants were led to believe that they would be participating in "getting to know you" exercises and then completing questionnaires about their impressions of the other person and of the interaction.

The experimenter then left the room so participants could converse freely with each other for 10 min. Afterwards, the experimenter brought participants back to their separate rooms, where they completed an impression rating form to evaluate the other's attractiveness, the quality of the interaction, and their desire to interact again. Participants were led to believe that the other student was completing the same impression rating form about them.

Next, the experimenter collected the forms and administered the randomly assigned manipulation to each participant individually. In the appearance threat condition, participants received feedback indicating a generally negative impression of their appearance. Specifically, on a scale from 1 to 7, with higher numbers indicating more positive evaluations and 4 indicating a neutral response, participants received a 4 for *physically attractive*, a 3 for *very good-looking*, a 4 for *physically appealing*, a 4 for *beautiful*, a 2 for *physically fit*, and a 3 for *desirable*.

Participants in the competence threat condition received feedback that was equally negative, but the evaluative dimensions pertained to intelligence and intellectual competence rather than appearance (e.g., *very intelligent*, *very smart*, *brilliant*, *very competent*, *very intellec-*

tual, and *very educated*). Participants in both conditions also received feedback indicating that their partner did not think the interaction had gone very well (i.e., 3 out of 7) and were not particularly looking forward to interacting with them again (i.e., 4 out of 7). After receiving feedback, participants completed dependent measures reflecting their desire to affiliate with close others. As in the previous studies, participants reported (1 = *not at all* to 7 = *very much*) their desire to affiliate with close others at the moment (five items, $\alpha = .84$). They were then probed for suspicion, debriefed, and dismissed.

Baseline Measures

As part of an initial mass testing session, all participants completed the RSE scale ($\alpha = .88$) and appearance CSW scale ($\alpha = .76$). In addition, given that the control condition was designed to threaten participants' sense of intelligence and intellectual competence, we had participants complete Crocker, Luhtanen, et al.'s (2003) 5-item academic CSW scale (e.g., "I feel bad about myself whenever my academic performance is lacking"; $\alpha = .87$). They also completed the 10-item Appearance-Based Rejection Sensitivity scale (Park, 2007). For this scale, participants read a series of hypothetical scenarios and responded to items such as "How concerned or anxious would you be that your date did not call you because of the way you looked?" and "I would expect that my date would not call me because of the way I looked" ($\alpha = .92$). Academic CSW and appearance-based rejection sensitivity were included as covariates in all analyses, along with demographic variables.

Results and Discussion

Multiple regression analyses examined effects of trait self-esteem, appearance CSW, and experimental condition on desire to be with close others. Results revealed only the predicted three-way interaction between self-esteem, appearance CSW, and condition ($\beta = .53, p < .01$; see Figure 3). Among HSE participants in the appearance threat condition, having high appearance CSW was related to greater desire to be with close others ($\beta = .76, p < .05$). In the competence threat condition, this pattern reversed ($\beta = -.69, p < .05$). Among LSE participants in the appearance threat condition, having high appearance CSW was associated with less desire to engage in activities with close others ($\beta = -.96, p < .01$); no such effect was observed in the competence threat condition ($\beta = .59, p = .17$). No gender differences were found, nor did gender moderate the effects.

As in the earlier studies, HSE and LSE participants in the present study displayed divergent social motivations following negative appearance feedback, with HSE people wanting to affiliate with close others, and LSE people wanting to avoid it. Notably, this pattern was not observed following a threat to competence, thus ruling out the possibility that appearance-contingent HSE and LSE individuals would respond the same way to any type of threat. We did, however, find an effect of appearance CSW among HSE participants in the negative competence feedback condition (i.e., high appearance CSW was associated with less desire for social contact). This finding is consistent with previous evidence showing that HSE people tend to become more indepen-

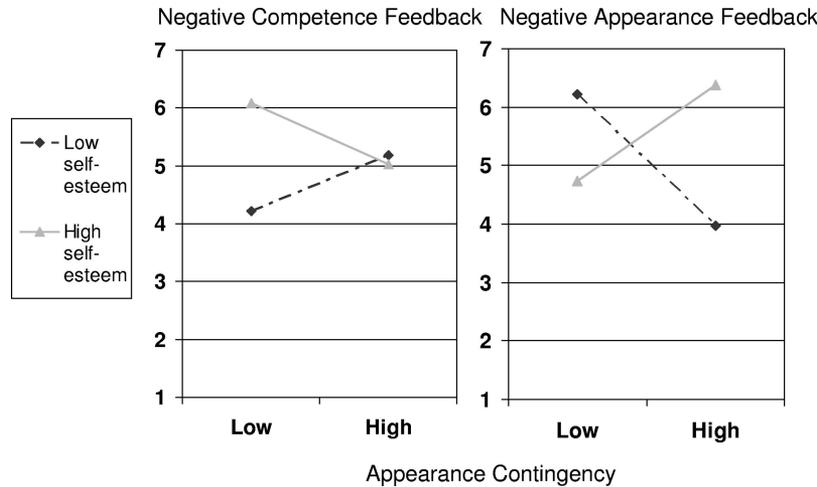


Figure 3. Study 3: Desire to affiliate with close others as a function of self-esteem, appearance contingency of self-worth (CSW), and experimental condition. Means are plotted at 1 *SD* above and 1 *SD* below the mean of self-esteem and appearance CSW in each condition.

dent and less interpersonally focused following a threat to competence (Park & Crocker, 2005; Vohs and Heatherton, 2001).³

Study 4

Studies 1–3 provided evidence that HSE appearance-contingent participants wanted to affiliate with close others following an appearance threat. In Study 4, we examined whether the desire to be with close others would extend to a desire to be with others more generally. We anticipated that the desire for affiliation might be specific to close others, because others in general are presumably less likely than close others to serve as direct sources of affirmation and support. We therefore expected HSE appearance-contingent participants to respond to an appearance threat with increased desire for contact with close others, but not necessarily with other people more generally. In contrast, we expected that LSE appearance-contingent people would want to avoid contact with both close others and others in general, because both could be perceived as potential sources of rejection and negative evaluation.

In addition to testing these hypotheses, we included additional control variables (social anxiety, neuroticism) to provide further evidence for the specificity of the findings. Given that LSE is related to social anxiety (Leary, 1990) and neuroticism (Judge, Erez, Bono, & Thoresen, 2002), it seemed important to rule out these potential confounds.

Method

A total of 65 participants (47 women, 18 men) completed the study for course credit. Participants were seated at separate cubicles and completed questionnaires assessing trait self-esteem, contingencies of self-worth, and other personality and demographic variables. Next, they were randomly assigned to one of two experimental conditions. In the appearance threat condition, participants were instructed as follows:

In this task, we would like you to think about a time when you felt negative about your appearance – a time when you felt unattractive,

self-conscious, or uncomfortable because of your appearance. In the space provided below, try to relieve the experience as best as you can by describing the situation you were in and what you were thinking and feeling at the time.

In the control condition, participants were given the following instructions:

In this task, we would like you to think about your walk or drive to campus today. In the space provided below, try to relieve the experience as best as you can by describing the situation you were in and what you were thinking and feeling at the time.

Afterwards, participants indicated their feelings at the moment and their desire to engage in social interaction with close others and with others in general. Finally, participants were debriefed and dismissed.

Baseline Measures

In addition to the RSE ($\alpha = .88$) and appearance CSW scales ($\alpha = .76$), participants completed Leary's (1983) 15-item Interaction Anxiousness scale, which assessed participants' level of social anxiety (e.g., "I often feel nervous when talking to an attractive member of the opposite-sex"; $\alpha = .88$). This scale has been widely used and has good convergent and discriminant validity and test-retest reliability (Leary & Kowalski, 1993). Participants also rated themselves on Big Five Personality Inventory items assessing Neuroticism ($\alpha = .69$; John, Donahue, & Kentle, 1992) on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). These

³ Ancillary analyses explored the possibility that negative intelligence feedback may have led academically contingent HSE or LSE participants to seek or avoid social contact, respectively. Results, however, showed that the interaction of self-esteem, academic competence CSW, and condition was not a significant predictor of desire to be with close others ($\beta = -.21$, $p = .11$) or desire to be with others more generally ($\beta = -.16$, $p = .25$).

measures of social anxiety and neuroticism were included as covariates in all analyses, along with demographic controls.

Manipulation Check

After writing their essay, participants responded to the following items: “How positive was the recalled event?” (1 = *not at all positive* to 7 = *very positive*), “How negative was the recalled event” (reversed; 1 = *not at all negative* to 7 = *very negative*), “How did the event make you feel about yourself?” (1 = *very bad about myself* to 7 = *very good about myself*), and “When thinking about the recalled event, what was your mood?” (1 = *very negative mood* to 7 = *very positive mood*). A composite measure was created by averaging across all items ($\alpha = .92$). Higher scores indicate more positive feelings about the event and oneself.

Dependent Measures

As in the previous studies, participants were asked how much they wanted to engage in various activities with close others (1 = *not at all* to 7 = *very much*; five items, $\alpha = .75$). In addition, to assess desire for affiliation in general, participants were asked how much they wanted to engage in the following activities: “Meet new people,” “Go on a date,” “Go to a party,” “Play a team sport,” “Be with others” (five items, $\alpha = .82$).

Results

Manipulation Check

There was a significant main effect of condition ($\beta = -.54, p < .001$), such that participants in the appearance threat condition felt worse than did those in the neutral condition. This effect was qualified by an Appearance CSW \times Condition interaction ($\beta = -.23, p < .05$) and a Self-Esteem \times Condition interaction ($\beta = -.35, p < .01$). Among high appearance CSW participants, appearance threat (vs. control) led to more negative feelings ($\beta = -.70,$

$p < .001$). A similar pattern was found for low appearance CSW participants, although the magnitude of the effect was relatively weaker ($\beta = -.41, p < .05$). Among HSE participants, appearance threat (vs. control) led to more negative feelings ($\beta = -.85, p < .001$). A similar pattern was found for LSE participants, although the magnitude of the effect was relatively weaker ($\beta = -.26, p < .09$). For HSE participants, thinking about a time when they felt unattractive may have violated their positive self-views, perhaps more so than for LSE people, for whom thinking about negative aspects of themselves may be more typical.

Desire to Affiliate With Close Others

In addition to a number of lower-order effects, we observed the expected interaction between self-esteem, appearance CSW, and condition ($\beta = .33, p < .01$; see Figure 4). Among HSE participants in the appearance threat condition, having high appearance CSW was associated with greater desire to be with close others ($\beta = .72, p < .05$). This pattern was non-significant in the control condition ($\beta = .52, p = .07$). Among LSE participants in the appearance threat condition, having high appearance CSW was associated with less desire to be with close others ($\beta = -.91, p < .05$), whereas the reverse was found in the no threat condition ($\beta = .99, p < .01$). There were no significant gender differences, nor did gender moderate any effects.

Desire to Be With Others in General

In addition to several lower-order effects, we observed the expected Self-Esteem \times Appearance CSW \times Condition interaction ($\beta = .27, p < .05$; see Figure 5). Among HSE participants in the appearance threat condition, having high appearance CSW was not significantly associated with desire to be with others in general ($\beta = .40, p = .23$). However, among LSE participants in the appearance threat condition, having high appearance CSW was associated with less desire to engage in activities with others in

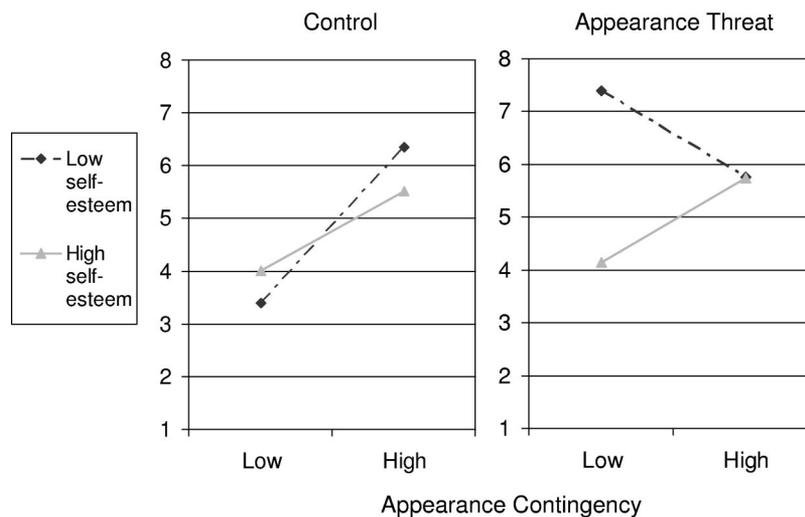


Figure 4. Study 4: Desire to affiliate with close others as a function of self-esteem, appearance contingency of self-worth (CSW), and experimental condition. Means are plotted at 1 SD above and 1 SD below the mean of self-esteem and appearance CSW in each condition.

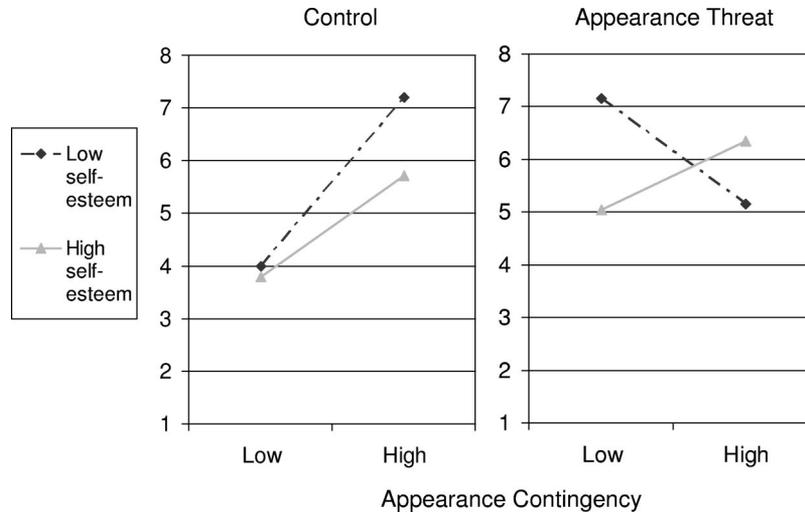


Figure 5. Study 4: Desire to be with others in general as a function of self-esteem, appearance contingency of self-worth (CSW), and experimental condition. Means are plotted at 1 *SD* above and 1 *SD* below the mean of self-esteem and appearance CSW in each condition.

general ($\beta = -.77, p = .05$). Among participants in the control condition, basing self-worth on appearance was associated with greater desire to be with others in general for both HSE participants ($\beta = .61, p < .05$) and LSE participants ($\beta = 1.02, p < .001$). Women overall showed less desire to affiliate with others in general ($\beta = -.50, p < .001$), but gender did not moderate any of the effects.

Discussion

Although HSE appearance-contingent participants once again desired contact with close others following an appearance threat, this desire did not apply as strongly to social contact with other people more generally. This is consistent with the notion that, because others in general are less familiar than close others, they are presumably less likely to be perceived as sources of reassurance and support. In contrast to HSE participants, LSE appearance-contingent participants responded to appearance threat with a desire to avoid others—both close others and other people more generally.

We also observed that, in the control condition, appearance CSW was associated with greater desire to be with other people. This is consistent with prior research showing that, in general, appearance CSW is associated with greater time spent socializing (Crocker, Luhtanen, et al., 2003).

Study 5

Although our earlier studies provide insight into affiliative social motivations that might help HSE appearance-contingent individuals deal with appearance threats, these studies do not shed light on the strategies that LSE individuals may use to offset self-threats. Rather than seek direct social contact, people with LSE may be more inclined to improve their perceived personal deficiencies, especially the specific qualities on which their feelings of self-worth are based. Specifically, LSE appearance-

contingent individuals were expected to show increased desire to engage in appearance-boosting activities—activities that do not require direct or immediate contact with other people but might otherwise help them to improve their attractiveness. In contrast, people with HSE are generally satisfied with their appearance and so were not expected to show strong interest in enhancing their appearance following threat.

Method

Participants and Procedure

Seventy-six participants (42 women, 31 men, 3 unspecified) participated in exchange for course credit. Participants were seated at separate cubicles and completed the RSE ($\alpha = .90$) and appearance CSW scales ($\alpha = .79$). They were then randomly assigned to write an essay about a negative aspect of their appearance (see Study 2) or an essay about the appearance of an object in the room (control condition). After writing this essay, participants indicated their desire (1 = *not at all* to 7 = *very much*) to engage in various appearance-related activities: “Right now, how much would you like to . . .”: “Work out to look more attractive to others,” “Go on a diet,” “Shop for clothes that make you look good,” “Read fashion/health magazines,” and “Receive a compliment about your appearance” (five items, $\alpha = .73$). They were then debriefed and dismissed.

Results

We observed a main effect of appearance CSW ($\beta = .33, p < .05$), as well as the predicted three-way interaction between self-esteem, appearance CSW, and condition ($\beta = -.35, p < .05$; see Figure 6). As expected, among LSE participants in the appearance threat condition, having high appearance CSW was associated with greater desire to engage in appearance activities ($\beta = .90, p < .05$). This pattern was not observed in the control condition ($\beta =$

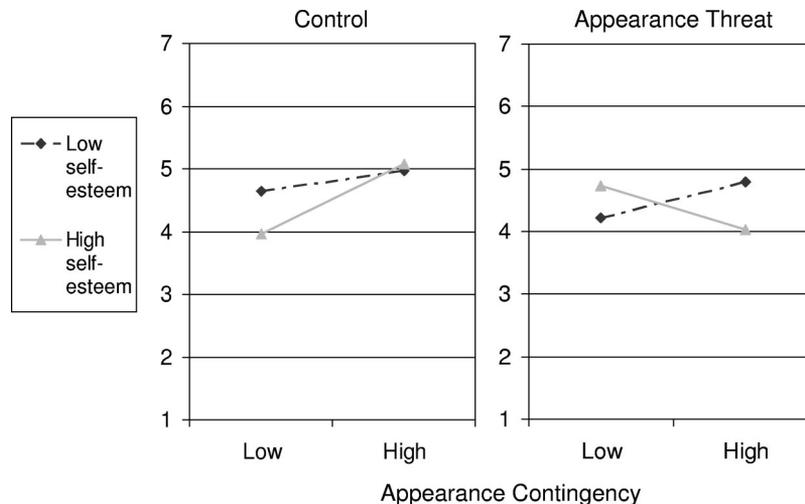


Figure 6. Study 5: Desire to engage in appearance activities as a function of self-esteem, appearance contingency of self-worth (CSW), and experimental condition. Means are plotted at 1 *SD* above and 1 *SD* below the mean of self-esteem and appearance CSW in each condition.

.14, $p = .72$). For HSE participants, basing self-worth on appearance predicted greater desire to engage in appearance activities in the control condition ($\beta = .63, p < .05$), but not in the appearance threat condition ($\beta = -.30, p = .48$). Although women overall were more likely than men to want to engage in appearance activities ($\beta = .26, p = .05$), gender did not moderate any of the effects.

Discussion

Following a threat to their attractiveness, LSE appearance-contingent participants wanted to engage in appearance-boosting activities. Seeking to improve one's attractiveness reflects a relatively "safe" way of enhancing self-esteem, because it does not require direct or extensive contact with other people. The desires to go on a diet or read fashion magazines, for example, can be done alone and do not necessarily involve interpersonal risk. Receiving a compliment about one's appearance, although interpersonal in nature, may also be perceived as safe because it is an unambiguously positive social experience and does not require extensive contact with others. Because appearing physically attractive is closely linked to interpersonal liking and social acceptance (Diener et al., 1995; Dion et al., 1972; Thornton & Moore, 1993), the responses of LSE participants may reflect a desire to increase not only self-esteem, but social belonging as well. Moreover, the response of LSE individuals can be contrasted with the more directly interpersonal one displayed by HSE individuals (Studies 1–4).

An unexpected finding was that HSE appearance-contingent participants wanted to engage in appearance activities in the absence of threat (i.e., in the control condition). People with HSE generally perceive themselves to be attractive and likeable (Baumeister, 1998). Thus, for HSE appearance-contingent individuals, engaging in appearance activities may serve to maintain their already favorable self-perceptions of attractiveness and likeability. It is clear, however, that experiencing a threat to their sense of

attractiveness did not increase HSE participants' desire to enhance their appearance, as it did among LSE participants.

Study 6

In Study 6, we examined participants' desire to engage in appearance-boosting activities by using a more controlled form of threat—an interpersonal feedback paradigm, similar to that used in Study 3. We expected that LSE appearance-contingent participants, but not HSE participants, would show greater motivation to engage in appearance activities following negative appearance feedback.

Method

Participants and Procedure

Forty-eight participants (24 women, 24 men) participated in exchange for course credit. For each session, 1 female and 1 male student participated. Participants were initially seated in separate rooms and told that the purpose of the study was to examine factors that influence social interaction. After completing baseline measures, participants were brought together where they conversed freely for 10 min. Afterwards, they were brought to separate rooms where they completed an impression rating form (as described in Study 3) evaluating the other student's physical attractiveness. Participants were then randomly assigned to receive either positive appearance feedback (scores of 6 or 7 on a series of 7-point attractiveness evaluation scales) or negative appearance feedback (scores ranging from 2 to 4 on the same scales). After receiving feedback, participants completed manipulation checks and then reported their desire to engage in appearance activities. They were then debriefed and dismissed.

Baseline Measures

Participants completed the RSE scale ($\alpha = .89$) and appearance CSW scale ($\alpha = .78$). Participants also completed the vanity

subscale of the Narcissism Personality Inventory (Raskin & Terry, 1988). Participants were given three pairs of statements and instructed to choose the statement they agreed with most (e.g., “I don’t particularly like to show off my body” or “I like to show off my body”). Each narcissistic response was scored as one point, and a composite score was calculated by summing across items ($\alpha = .65$). We controlled for vanity because it was correlated with desire to engage in appearance activities ($r = .40, p < .01$).

Manipulation Checks

To check the effectiveness of the manipulation, participants completed a state version of the RSE scale. Specifically, participants indicated their agreement (1 = *strongly disagree* to 7 = *strongly agree*) with statements such as “Right now, I feel satisfied with myself” (10 items, $\alpha = .95$). Participants also indicated (1 = *not at all* to 7 = *very much*) how rejected they felt at the moment (e.g., “Right now, I feel rejected,” 10 items, $\alpha = .92$), as well as their level of positive affect (e.g., happy, pleased, proud; 8 items) and negative affect (e.g., angry, frustrated, tense; 22 items). The negative affect items were reverse-scored and combined with the positive affect items to create an overall measure of positive affect ($\alpha = .96$).

Desire to Engage in Appearance Activities

Participants indicated their interest at the moment in engaging in the following activities: “Shop for clothes that make you look good,” “Read fashion/health magazines,” “Receive a compliment about your appearance,” and “Compare your attractiveness with others” on a scale from 1 = *not at all* to 7 = *very much* (four items, $\alpha = .65$).

Results

Multiple regression analyses were conducted to examine effects of self-esteem, appearance CSW, and experimental condition, controlling for demographic variables and vanity.

Manipulation Checks

State self-esteem. Results revealed significant main effects of trait self-esteem ($\beta = .75, p < .001$), condition ($\beta = -.25, p < .05$), and an Appearance CSW \times Condition interaction ($\beta = -.25, p < .05$). Among high appearance CSW participants, receiving negative (vs. positive) appearance feedback was related to lower state self-esteem ($\beta = -.52, p < .01$). This was not the case for low appearance CSW participants ($\beta = .02, p = .88$). No other effects were found.

Feelings of rejection. In addition to a significant main effect of trait self-esteem ($\beta = -.63, p < .001$), there was the expected main effect of condition ($\beta = .38, p < .01$), such that participants in the negative appearance feedback condition experienced greater feelings of rejection than did those in the positive feedback condition. No other effects were found.

Positive affect. We observed main effects of trait self-esteem ($\beta = .52, p < .01$) and condition ($\beta = -.34, p < .05$), such that participants experienced less positive affect in the negative appearance feedback condition than in the positive feedback condition. No other effects were found.

In sum, participants who received negative appearance feedback (compared with positive feedback) experienced lower state self-esteem, greater feelings of rejection, and less positive affect. As expected, decrements in state self-esteem were more pronounced for participants with high appearance CSW versus those with low appearance CSW.

Desire to Engage in Appearance Activities

Results revealed several lower-order main effects, which were subsumed by the predicted three-way interaction between self-esteem, appearance CSW, and condition ($\beta = -.38, p < .05$; see Figure 7). As predicted, among LSE participants in the negative appearance feedback condition, having high appearance CSW was associated with greater desire to engage in appearance-boosting activities ($\beta = 1.40, p < .01$). There were no significant effects of appearance CSW in the positive feedback condition or among HSE participants (all $ps > .12$). Overall, women wanted to engage in appearance activities more than did men ($\beta = .27, p < .06$), but gender did not moderate any of the effects.

Discussion

Study 6 replicated and extended the findings of Study 5. Despite the very different procedures designed to manipulate appearance threat, the key finding was the same: When their sense of physical attractiveness was threatened, LSE participants who strongly based self-worth on appearance showed greater interest in engaging in appearance-boosting activities. This desire may reflect a way of enhancing the self while avoiding direct contact with other people. As in Study 5, HSE participants did not respond to appearance threat with increased desire to enhance their appearance.

General Discussion

How do people respond when their self-esteem is threatened? Do they seek to affiliate with others or do they seek to avoid social contact and pursue alternative ways of restoring their self-worth? Across six studies, we found consistent support for our hypothesis that responses to self-threat vary as a function of people’s trait self-esteem and contingencies of self-worth. Whereas HSE appearance-contingent people responded to appearance threats by desiring contact with close others, LSE appearance-contingent people wanted to avoid social contact. For HSE people, close others are likely to be perceived as positive sources of support and affirmation; thus, seeking contact with close others may be a way of attaining a compensatory boost to the self. LSE people, in contrast, are especially vigilant to the possibility of rejection and negative social evaluation, and they were less inclined to respond to self-threat by seeking social contact. Instead, they preferred to engage in activities that would serve to improve their appearance. Boosting one’s attractiveness may reflect a less interpersonally risky route to restoring self-esteem, because it does not require extensive interaction with others and thus minimizes the possibility of rejection or negative social evaluation. Together, these studies provide novel evidence that responses to self-threat depend on an interaction between one’s level of self-esteem and the extent to which one’s self-worth is invested in the threatened domain. Moreover, this research provides new evidence for the specific

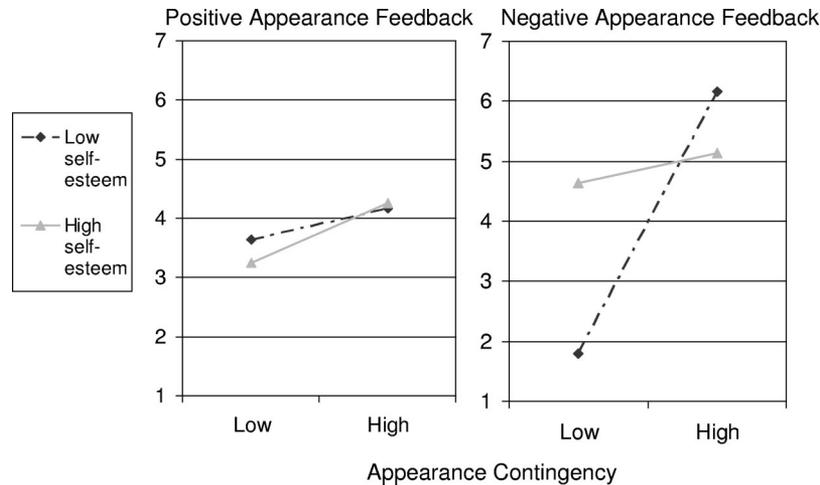


Figure 7. Study 6: Desire to engage in appearance activities as a function of self-esteem, appearance contingency of self-worth (CSW), and experimental condition. Means are plotted at 1 *SD* above and 1 *SD* below the mean of self-esteem and appearance CSW in each condition.

motivations that HSE and LSE individuals display in order to offset threats to contingent aspects of the self.

Implications for Interpersonal Functioning

The domains in which people stake their self-worth may be valued, in part, because they represent qualities believed to increase interpersonal acceptance. From the perspective of sociometer theory, self-esteem serves as a psychological gauge of the degree to which a person feels included or excluded by others (Leary & Baumeister, 2000; Leary et al., 1995). Thus, a threat to self-esteem may also pose a threat to one's sense of social belonging, thereby intensifying people's desire to satisfy not just self-esteem needs, but belongingness needs as well. This idea is consistent with the responses we observed among HSE individuals, which were directed at connecting with other people.

In addition to the fundamental need for social relationships, however, people also possess a fundamental need to perceive themselves and their social environments in ways that make them feel safe and protected from harm (Greenberg, Solomon, & Pyszczynski, 1997; Mikulincer, Florian, & Hirschberger, 2003; cf. Maner et al., 2005). The desire for social connection versus self-protection may therefore represent a basic motivational conflict that is heightened following threats to the self or to one's relationships (Maner, DeWall, et al., 2007; Murray et al., 2006). The findings from the present research suggest that when people experienced a threat to a domain of contingent self-worth, the manner in which they prioritized the desire for social connection versus self-protection depended, in part, on their overall level of self-esteem.

Drawing nearer to close others (e.g., family, friends) in times of need is characteristic of people with HSE. HSE people tend to turn toward their romantic partners on days after they feel rejected, for example, and this response promotes the well-being of the relationship (Murray, Bellavia, Rose, & Griffin, 2003). Thus, for HSE individuals, self-threats appear to trigger a regulatory system that prioritizes goals intended to repair self-esteem and social belonging, by engaging in relationship-promoting behaviors.

For people with LSE, however, threats to self-esteem are especially troublesome because they may pose a greater proportional loss to a more uncertain, insecure sense of self (Campbell, 1990; Campbell & Lavelle, 1993). Consequently, self-threats may activate in LSE individuals a self-protective regulatory system aimed primarily at avoiding further harm—one that quickly detects and signals the possibility of future threat or rejection and motivates a predominantly defensive stance to avoid further loss of self-esteem (Baldwin & Sinclair, 1996; Murray et al., 2006; Park, Crocker, & Kiefer, 2007). In response to threat, LSE people often become risk-averse and restrained (Baumeister et al., 1989; Blaine & Crocker, 1993) and are unlikely to risk interdependence (Murray et al., 1998, 2006). In concert with this previous evidence, the current studies suggest that for people with LSE, the motivation to protect themselves from potentially threatening social encounters may sometimes overwhelm the desire for connection with others.

Having LSE and avoiding other people following threat could potentially develop into a self-perpetuating cycle. Indeed, pessimism about interpersonal acceptance has been shown to promote social avoidance, which, over time, exacerbates feelings of loneliness (Nurmi, Toivonen, Salmela-Aro, & Eronen, 1998). Similarly, socially anxious individuals, who fear the sting of negative social evaluation, are inclined to withdraw from others when threatened (e.g., Maner, DeWall, et al., 2007). Chronic social avoidance, in turn, makes it difficult to maintain positive social relationships with others and further exacerbates feelings of anxiety (e.g., Barlow, 2002). In sum, a range of findings suggests that, when threatened, individuals with social insecurities react in ways that distance themselves from others, rather than draw others closer as sources of affirmation and reassurance.

Instead of seeking direct social contact, the present research revealed that LSE appearance-contingent people sought to engage in appearance-boosting activities following appearance threats. The desire to improve one's appearance may represent a relatively safe way of pursuing self-esteem and social acceptance; it does not

require direct or extensive interaction with others and thus involves less immediate risk of rejection or negative social evaluation. The responses of LSE individuals, however, could unwittingly perpetuate feelings of rejection. Although seeking to improve and validate one's appearance may temporarily repair feelings of self-esteem and offer an illusion of social acceptance, these efforts may be beneficial only to the extent that they are eventually coupled with actions that help LSE people connect with others and form meaningful social bonds (see Park, Crocker, & Vohs, 2006). Further research is needed to examine this possibility directly.

Limitations and Future Directions

Our overarching goal in this research was to identify the immediate motivational consequences of experiencing a threat to a domain of contingent self-worth as well as to examine how these motivational consequences differed for people with HSE versus those with LSE. Accordingly, the dependent measures we used captured a relatively direct, early-in-the-stream portrayal of people's motivations. There are many intervening factors, however, that could influence and interact with these motivations to ultimately affect downstream forms of behavior and social interaction. Future studies should examine the extent to which participants' initial motivations lead to strategic behaviors aimed at social acceptance and self-enhancement. For example, studies could include opportunities for seeking (or avoiding) actual social interaction in the lab or could examine responses to self-threat among individuals in existing relationships (e.g., within friendships, romantic relationships).

The studies reported here used relatively controlled and unambiguous forms of self-threat. The types of threats that people encounter in everyday life, however, may be more ambiguous—it is not always clear if or why one has been evaluated negatively. Future research might profitably examine whether self-esteem and contingencies of self-worth shape people's tendency to view ambiguous social events as posing particular kinds of threats. It would also be worthwhile to investigate whether LSE people are especially inclined to perceive events as threatening to contingent aspects of the self and whether such perceptions produce social avoidance among LSE individuals.

Another limitation pertains to the generalizability of the current findings. The present research focused on the domain of physical appearance because it served as a relatively strong test of our main hypotheses; appearance is regulated in a highly interpersonal manner, and so threats to appearance may have especially potent effects on people's desire for social contact. We cannot know for certain, though, whether the current findings generalize to other domains of contingency. From the perspective of sociometer theory, self-esteem may be inextricably linked with social acceptance, regardless of which aspects of the self are prioritized. Therefore, threats to any domain of contingency—whether appearance, academic success, or spirituality—may have important implications for people's sense of social acceptance and their desire for social interaction. Based on this line of reasoning, one might expect the current findings to generalize to other areas of contingent self-worth.

Some domains of contingency, however, may be more strongly tied to concerns about social belonging than are other domains.

Domains such as appearance and others' approval, for example, are highly embedded within interpersonal contexts because they rely heavily on others' feedback and validation (Crocker, Luhtanen, et al., 2003). In contrast, domains such as academic competence or virtue may be less dependent on others' opinions and may therefore be less interpersonally regulated. Basing self-worth on highly interpersonal domains, such as appearance or others' approval, may make the goal of seeking social connection especially salient following threats to those domains (e.g., Park & Crocker, 2008). When the threatened domain is less immediately interpersonal, however, it is possible that responses may not reflect as strong a desire to connect with other people.

In the present research, for example, academically contingent participants did not display the same social motivations following negative competence feedback as appearance-contingent participants did following negative appearance feedback (Study 3; see Footnote 3). This finding could suggest important differences between reactions to contingent threat in these two domains. Another interpretation, however, is that the competence feedback—which consisted of feedback pertaining specifically to the partner's perceptions of the participant's intelligence—may not have cut to the heart of what academically contingent participants were concerned about because the threat did not focus on academic performance, *per se*. It is possible that providing negative scores on a test of academic ability might evoke greater responses among academically contingent participants. Future studies would benefit from examining whether the specific domain on which people stake their self-worth has implications for the manner in which they cope with threat.

In sum, our immediate aim in this research was to provide a clear and compelling story of the initial motivations of appearance-contingent HSE and LSE people following threats to appearance. Although it will be important to examine how these motivations influence social behaviors within real relationships and to investigate additional domains of contingency, our hope is that this research will provide a springboard from which to study more fully the psychological and behavioral consequences of threats to domains of contingent self-worth.

Conclusion

Just as the experience of physical threat or pain may motivate people to heal their bodies, threats to the psychological self may motivate attempts to restore one's self-regard and sense of social belonging (MacDonald & Leary, 2005). People with HSE, who tend to feel positively regarded by others, responded to self-threat in a socially optimistic fashion, by seeking to affiliate directly with others as potential sources of reassurance and affirmation. In contrast, people with LSE, who tend to feel less positively regarded by others, responded in a socially cautious manner, by seeking to withdraw from others and to remedy personal attributes perceived to be deficient (i.e., by enhancing their attractiveness). This divergence reflects basic differences in the social outlook of people with HSE versus those with LSE. Examining trait self-esteem alone, however, does not fully account for the multifaceted nature of self-esteem processes following self-threat. Instead, this research demonstrates that studying trait self-esteem in concert with contingencies of self-worth provides a richer understanding of how people respond to psychological threats.

References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Baldwin, M. W., & Sinclair, L. (1996). Self-esteem and if-then contingencies of interpersonal acceptance. *Journal of Personality and Social Psychology, 71*, 1130–1141.
- Barlow, D. H. (2002). *Anxiety and its disorders: The nature and treatment of anxiety and panic* (2nd ed.). New York: Guilford Press.
- Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., Vol. 2, pp. 680–740). New York: McGraw-Hill.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 111*, 497–529.
- Baumeister, R. F., Tice, D. M., & Hutton, D. G. (1989). Self-presentational motivations and personality differences in self-esteem. *Journal of Personality, 57*, 547–579.
- Blaine, B., & Crocker, J. (1993). Self-esteem and self-serving biases in reactions to positive and negative events: An integrative review. In R. F. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp. 55–85). Hillsdale, NJ: Erlbaum.
- Blascovich, J., & Tomaka, J. (1991). Measures of self-esteem. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes, Volume I*. San Diego, CA: Academic Press.
- Bowlby, J. (1969). *Attachment: Vol. 1. Attachment and loss* (2nd ed.). New York: Basic Books.
- Brockner, J., Derr, W. R., & Laing, W. N. (1987). Self-esteem and reactions to negative feedback: Toward greater generalizability. *Journal of Research in Personality, 21*, 318–333.
- Brown, J. D., & Dutton, K. A. (1995). The thrill of victory, the complexity of defeat: Self-esteem and people's emotional reactions to success and failure. *Journal of Personality and Social Psychology, 68*, 712–722.
- Brown, J. D., Dutton, K. A., & Cook, K. E. (2001). From the top down: Self-esteem and self-evaluation. *Cognition and Emotion, 15*, 615–631.
- Campbell, J. D. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology, 59*, 538–549.
- Campbell, J. D., Chew, B., & Scratchley, L. S. (1991). Cognitive and emotional reactions to daily events: The effects of self-esteem and self-complexity. *Journal of Personality, 59*, 475–505.
- Campbell, J. D., & Lavelle, L. F. (1993). Who am I? The role of self-concept confusion in understanding the behavior of people with low self-esteem. In R. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp. 3–20). New York: Plenum Press.
- Clark, M. S., & Reis, H. T. (1988). Interpersonal processes in close relationships. *Annual Review of Psychology, 39*, 609–672.
- Crocker, J., Karpinski, A., Quinn, D. M., & Chase, S. (2003). When grades determine self-worth: Consequences of contingent self-worth for male and female engineering and psychology majors. *Journal of Personality and Social Psychology, 85*, 507–516.
- Crocker, J., Luhtanen, R. K., Cooper, M. L., & Bouvrette, S. (2003). Contingencies of self-worth in college students: Theory and measurement. *Journal of Personality and Social Psychology, 85*, 894–908.
- Crocker, J., & Park, L. E. (2004). The costly pursuit of self-esteem. *Psychological Bulletin, 130*, 392–414.
- Crocker, J., Sommers, S. R., & Luhtanen, R. K. (2002). Hopes dashed and dreams fulfilled: Contingencies of self-worth and admissions to graduate school. *Personality and Social Psychology Bulletin, 28*, 1275–1286.
- Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review, 108*, 593–623.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.
- Diener, E., Wolsic, B., & Fujita, F. (1995). Physical attractiveness and subjective-well-being. *Journal of Personality and Social Psychology, 69*, 120–129.
- Dion, K. K., Berscheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology, 24*, 285–290.
- Dodgson, P. G., & Wood, J. V. (1998). Self-esteem and the cognitive accessibility of strengths and weaknesses after failure. *Journal of Personality and Social Psychology, 75*, 178–197.
- Downey, G., & Feldman, S. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology, 70*, 1327–1343.
- Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 61–139). New York: Academic Press.
- Griffin, D. W., & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology, 67*, 430–445.
- Gutierrez, S. E., Kenrick, D. T., & Partch, J. J. (1999). Beauty, dominance, and the mating game: Contrast effects in self-assessment reflect gender differences in mate selection. *Personality and Social Psychology Bulletin, 25*, 1126–1134.
- Harter, S. (1993). Causes and consequences of low self-esteem in children and adolescents. In R. F. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp. 87–116). New York: Plenum Press.
- Heatherton, T. F., & Vohs, K. D. (2000). Interpersonal evaluations following threat to self. *Journal of Personality and Social Psychology, 78*, 725–736.
- Heimpel, S. A., Wood, J. V., Marshall, M., & Brown, J. (2002). Do people with low self-esteem really want to feel better?: Self-esteem differences in motivation to repair negative moods. *Journal of Personality and Social Psychology, 82*, 128–147.
- James, W. (1890). *The principles of psychology* (Vol. 1). Cambridge, MA: Harvard University Press.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1992). *The “Big Five” inventory—Versions 4a and 5a*. Unpublished manuscript, University of California, Berkeley.
- Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2002). Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct? *Journal of Personality and Social Psychology, 83*, 693–710.
- Kernis, M. H., Brockner, J., & Frankel, B. S. (1989). Self-esteem and reactions to failure: The mediating role of overgeneralization. *Journal of Personality and Social Psychology, 57*, 707–714.
- Kernis, M. H., & Waschull, S. B. (1995). The interactive roles of stability and level of self-esteem: Research and theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 27, pp. 93–141). San Diego, CA: Academic Press.
- Kulik, J. A., & Mahler, H. I. M. (1989). Social support and recovery from surgery. *Health Psychology, 8*, 221–238.
- Leary, M. R. (1983). Social anxiousness: The construct and its measurement. *Journal of Personality Assessment, 47*, 66–75.
- Leary, M. R. (1990). Responses to social exclusion: Social anxiety, jealousy, loneliness, depression, and low self-esteem. *Journal of Social and Clinical Psychology, 9*, 221–229.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 32, pp. 1–62). San Diego, CA: Academic Press.
- Leary, M. R., & Kowalski, R. M. (1993). The Interaction Anxiousness Scale: Construct and criterion-related validity. *Journal of Personality Assessment, 61*, 136–146.
- Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995).

- Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, 68, 518–530.
- MacDonald, G., & Leary, M. R. (2005). Why does social exclusion hurt? The relationship between social and physical pain. *Psychological Bulletin*, 131, 202–223.
- Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the “porcupine problem.” *Journal of Personality and Social Psychology*, 92, 42–55.
- Maner, J. K., Gailliot, M. T., Rouby, D. A., & Miller, S. L. (2007). Can't take my eyes off you: Attentional adhesion to mates and rivals. *Journal of Personality and Social Psychology*, 93, 389–401.
- Maner, J. K., Kenrick, D. T., Neuberg, S. L., Becker, D. V., Robertson, T., Hofer, B., Delton, A., et al. (2005). Functional projection: How fundamental social motives can bias interpersonal perception. *Journal of Personality and Social Psychology*, 88, 63–78.
- Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the science of love. *Personality and Social Psychology Review*, 7, 20–40.
- Murray, S. L., Bellavia, G., Rose, P., & Griffin, D. (2003). Once hurt, twice hurtful: How perceived regard regulates daily marital interaction. *Journal of Personality and Social Psychology*, 84, 126–147.
- Murray, S. L., Holmes, J. G., & Collins, N. L. (2006). Optimizing assurance: The risk regulation system in relationships. *Psychological Bulletin*, 132, 641–666.
- Murray, S. L., Holmes, J. G., MacDonald, G., & Ellsworth, P. C. (1998). Through the looking glass darkly? When self-doubt turns into relationship insecurities. *Journal of Personality and Social Psychology*, 75, 1459–1480.
- Nurmi, J., Toivonen, S., Salmela-Aro, K., & Eronen, S. (1998). Optimistic, approach-oriented, and avoidance strategies in social situations: Three studies on loneliness and peer relationships. *European Journal of Personality*, 10, 201–219.
- Park, L. E. (2007). Appearance-based rejection sensitivity: Implications for mental and physical health, affect, and motivation. *Personality and Social Psychology Bulletin*, 33, 490–504.
- Park, L. E., & Crocker, J. (2005). Interpersonal consequences of seeking self-esteem. *Personality and Social Psychology Bulletin*, 11, 1587–1598.
- Park, L. E., & Crocker, J. (2008). Contingencies of self-worth and responses to negative interpersonal feedback. *Self and Identity*, 7, 184–203.
- Park, L. E., Crocker, J., & Kiefer, A. K. (2007). Contingencies of self-worth, academic failure, and goal pursuit. *Personality and Social Psychology Bulletin*, 33, 1503–1517.
- Park, L. E., Crocker, J., & Vohs, K. D. (2006). Contingencies of self-worth and self-validation goals: Implications for close relationships. In K. D. Vohs & E. J. Finkel (Eds.), *Self and relationships: Connecting intrapersonal and interpersonal processes* (pp. 84–103). New York: Guilford Press.
- Pelham, B. W. (1995). Self-investment and self-esteem: Evidence for a Jamesian model of self-worth. *Journal of Personality and Social Psychology*, 69, 1141–1150.
- Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validation. *Journal of Personality and Social Psychology*, 54, 890–902.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Schachter, S. (1959). *The psychology of affiliation*. Stanford: Stanford University Press.
- Schupak-Neuberg, E., & Nemeroff, C. J. (1993). Disturbances in identity and self-regulation in bulimia nervosa: Implications for a metaphorical perspective of “body as self.” *International Journal of Eating Disorders*, 14, 33–41.
- Sheldon, K. M. (2005). Positive value change during college: Normative trends and individual differences. *Journal of Research in Personality*, 39, 209–223.
- Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. *Journal of Personality and Social Psychology*, 35, 656–666.
- Spencer, S. J., Josephs, R. A., & Steele, C. M. (1993). Low self-esteem: The uphill struggle for self-integrity. In R. F. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp. 21–36). New York: Plenum Press.
- Swann, W. B., Jr., Chang-Schneider, C., & McClarty, K. L. (2007). Do people's self-views matter? Self-concept and self-esteem in everyday life. *American Psychologist*, 62, 84–94.
- Swann, W. B., Jr., Griffin, J. J., Predmore, S. C., & Gaines, B. (1987). The cognitive-affective crossfire: When self-consistency confronts self-enhancement. *Journal of Personality and Social Psychology*, 52, 881–889.
- Tafarodi, R. W., & Swann, W. B., Jr. (2001). Two-dimensional self-esteem: Theory and measurement. *Personality and Individual Differences*, 31, 653–673.
- Taylor, S. E., Klein, L. C., Lewis, B. P., Gruenewald, T. L., Gurung, R. A. R., & Updegraff, J. A. (2000). Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review*, 107, 411–429.
- Thornton, B., & Moore, S. (1993). Physical attractiveness contrast effect: Implications for self-esteem and evaluations of the social self. *Personality and Social Psychology Bulletin*, 19, 374–380.
- Vohs, K. D., & Heatherton, T. F. (2001). Self-esteem and threats to self: Implications for self-construals and interpersonal perceptions. *Journal of Personality and Social Psychology*, 81, 1103–1118.
- Wheeler, H. A., Winter, M. G., & Polivy, J. (2003). The association of low parent-adolescent reciprocity, a sense of incompetence, and identity confusion with disordered eating. *Journal of Adolescent Research*, 18, 405–429.
- Zimbardo, P. G., & Formica, R. (1963). Emotional comparison and self-esteem as determinants of affiliation. *Journal of Personality*, 31, 141–162.

Received July 31, 2007

Revision received August 20, 2008

Accepted August 21, 2008 ■