Psychology Press
Taylor & Francis Group

Self-esteem and the Dual Processing of Interpersonal Contingencies

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Social cognitive research has shown that individuals with low self-esteem exhibit contingency expectations involving interpersonal acceptance and rejection (e.g., If I fail, then I will be rejected). We examined whether the processing differences between low and high self-esteem individuals would be evident in their most spontaneous reactions, or only in relatively deliberate responses. A lexical decision task measured people's reaction times to positive or negative interpersonal words, following success or failure primes. The stimulus onset asynchrony was manipulated to allow spontaneous or deliberate processing. Individuals with low self-esteem exhibited contingencies at the spontaneous level. These contingencies were not evident in individuals with high self-esteem. The findings support interpersonal models of self-esteem, and confirm that controlled, deliberate thought is not required for the activation of relational expectations.

Self-evaluative thoughts and feelings often seem to spring to mind spontaneously. Certainly, most of us are familiar with the thoughts of unworthiness and the sinking feeling in the pit of the stomach that we experience upon learning of a failure, thinking of a mistake, or having a shortcoming revealed. Given just a moment or two to reflect, however, we may be able to put things in perspective and return to a more balanced frame of mind. Indeed, people with very positive self-esteem might seldom experience even the initial pangs of insecurity.

What is the source of these feelings? Recent research has supported longstanding views (e.g., Cooley, 1902; Sullivan, 1953) emphasizing the key role played by social experiences and expectancies in the construction of self-esteem. Low self-esteem has been linked to insecure attachment and an impoverished sense of belonging, whereas high self-esteem arises from the feeling of acceptance by significant others in our lives (Baldwin, 1992; Leary, Tambor, Terdal, & Downs, 1995). One influential theory, proposed by Leary and colleagues, casts the self-esteem system as an internal *sociometer*, monitoring the degree of social inclusion (acceptance) or exclusion (rejection) in any given situation, with perceived social exclusion leading to feelings of low self-esteem (Leary & Baumeister, 2000; Leary & Downs, 1995; Leary et al., 1995).

This suggests that self-esteem feelings do not directly stem from successes and failures, as some models might have it, but from expectations about the interpersonal outcomes of success and failure—that is, how we expect others will respond to our triumphs and shortcomings. Over time, successes and failures influence our self-esteem precisely because they become linked to expectations of acceptance and rejection.

Individuals differ, however, in the degree to which they perceive their acceptance by others as being contingent on their successes (Baldwin & Sinclair, 1996). For example, through repeated experiences of critical evaluation by others, a person might have a highly accessible interpersonal script, "If I fail, then I will be rejected." Subsequent thoughts of, or experiences with, failure would then lead to thoughts of rejection, resulting in negative affect. Strong contingency expectations of this nature are theorized, not surprisingly, to lead to insecurity and low self-esteem, as self-worth and social acceptance are always provisional.

The issue we wished to address involves the degree to which the failure – rejection association displayed by individuals with low self-esteem represents an immediate, gut-level response versus primarily a more reflective view of social dynamics. Leary and colleagues have hypothesized that the process of judging interpersonal acceptance and rejection functions automatically and continuously without requiring attentional resources (Leary & Downs, 1995). Indeed, one set of studies (Baldwin & Sinclair, 1996) that offered initial support for this view featured a lexical decision task as an indicator of people's associations to success and failure. In this task, now a standard tool of social cognition researchers, participants are presented with a prime word, such as *failure*, and then are asked to identify as quickly as possible whether a target (e.g., *included, disliked*, or *bamen*) that follows is a word or a nonword. The basis of this task is that subjects are typically quicker to identify target words that are semantically or associatively related to the prime word (Meyer & Schvaneveldt, 1971). In two studies Baldwin & Sinclair (1996) found that individuals with low self-esteem showed a distinctive pattern of contingency expectations, responding faster to rejection-related words that were presented one second after failure primes, and faster to acceptance related words after being presented with success primes. Individuals with high self-esteem did not show any evidence of this pattern. This finding is consistent with the hypothesis that only individuals with low self-esteem are schematic for contingency-expectations, and this underlies their negative emotional reactions to failure.

Our goal was to examine this phenomenon more closely. Recent work in several domains has focused on dual-process models (see Chaiken & Trope, 1999), which typically contrast relatively spontaneous processing with relatively deliberate processing. For example, in response to persuasive messages, people can respond in a heuristic manner to peripheral cues such as the persuader's attractiveness, or they can think more systematically and analytically about the central aspects of the message (Chaiken, 1980; Petty & Cacioppo, 1986). Similarly, in their response to out-group members people can respond relatively automatically on the basis of activated stereotypes, but they can also control their reactions with intentional thought (Devine & Monteith, 1999).

Information processing is generally assumed to be characterized by a combination of automatic and controlled processes, with a range of factors determining the relative influence of the two modes (e.g., Bargh, 1994; Devine & Monteith, 1999; Jacoby, Kelley, & McElree, 1999). In particular, because deliberate, strategic thought requires greater time and cognitive resources, responses that have to be made quickly are generally deemed to be determined by spontaneous, automatic

processes. With minor modifications, the lexical decision task can be utilized to examine spontaneous and deliberate processing of prime–target associations (e.g., Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Kawakami, Dion, & Dovidio, 1998). This is done by simply varying the stimulus onset asynchrony (SOA), or the delay between the presentation of the prime word and the presentation of the target word. Cognitive research suggests that as the SOA is shortened, this reduces the opportunity for processing of the prime word to take place before the participant must make the word/nonword choice on the target letter string. Associations made between the prime and target at shorter SOAs can thus be seen as reflecting relatively spontaneous reactions, while those at longer SOAs may be more influenced by deliberate processing (Neely, 1991).

In the current research we examined low and high self-esteem individuals' information processing of *if–then* contingencies of rejection and acceptance, varying the SOAs in a lexical decision task. Across two studies we progressively shortened the SOAs on some trials, to determine whether the contingency expectancies associated with low self-esteem would be evident even under conditions that allowed for only very spontaneous, automatic reactions. We thought that they would, as we believe that these expectancies represent overlearned, scripted views of interpersonal patterns; still, we wished to test the boundary conditions of the phenomenon to examine the hypothesis that the sociometer functions relatively automatically. We also were interested in the information processing of high self-esteem individuals. The assumption underlying previous research (Baldwin & Sinclair, 1996) was that high self-esteem individuals do not have an accessible schema linking failure with rejection, and so should not display lexical decision effects linking failure with rejection—regardless of the SOA. An alternative possibility, which seemed plausible and important to test, was that high self-esteem individuals might indeed show failure-rejection associations if their most spontaneous responses were assessed. Numerous lines of research have indicated that individuals with high self-esteem, particularly when given enough time and cognitive resources, are able and likely to marshal self-esteem defenses of various kinds (see, e.g., Baumeister, 1993). Perhaps, then, these individuals would show if–then associations in their more spontaneous responses, but as more deliberate processing was allowed these associations would be overridden or inhibited. We therefore included trials with relatively long SOAs, to allow for more deliberate processing.

We made two major predictions. First, we expected to replicate the basic finding of Baldwin and Sinclair (1996) that the contingency pattern linking failure with rejection and success with acceptance would be mostly evident for individuals with low rather than high self-esteem. Second, we hypothesized that this effect would be moderated by the SOA of the trials. We did not anticipate any evidence of contingency expectations for high self-esteem individuals at the longer SOAs (following Baldwin & Sinclair, 1996), but we were intrigued by the possibility that there might be effects of this nature at the shorter SOAs.

Study One

Participants with low and high self-esteem performed a lexical decision task involving acceptance and rejection words. SOAs were varied across trials, to be either shorter or longer than the one-second SOA used in Baldwin and Sinclair's (1996) original research, thereby allowing us to compare relatively spontaneous to relatively deliberate responses.

Method

Participants. Fifty-five undergraduate students at McGill University volunteered and received $8.00 for their participation. Data from nine participants were discarded because they failed to complete two or more error-free trials per prime–target condition, they made an average of more than two errors per condition, or they had greater than 16 errors (25% of word trials) overall. Ages of the 46 participants (23 men, 23 women) ranged from 18 to 23 with a mean age of 19.5.

Stimuli. The prime stimuli consisted of 16 words related to success (e.g., *excel, capable*) and 16 words related to failure (e.g., *defeated, inept*). Target words consisted of 32 acceptance words (e.g., *liked, wanted*), 32 rejection words (e.g., *excluded, loathed*) and 64 nonwords generated through the slight modification of familiar English words (e.g., *listened = lisrened*). For each participant, each prime word was randomly paired with one acceptance and one rejection target, as well as two nonword targets. Half the trials were presented at each SOA. There were a total of 128 trials, randomly presented for each participant.

Procedure. Participants were run either individually or in small groups of 2 to 5 by the same female experimenter. The lexical decision task began with a set of nine practice trials. Participants were asked to press the "1" key on the number pad if a word was presented, and the "2" key if a nonword was presented. After the practice trials, participants were informed that the task would change slightly, and that a "distracter" word (actually the prime word) would appear before the presentation of each target letter string, allegedly to make the task more challenging. Participants were instructed to continue indicating if the target was a word or a nonword. On each trial, the prime stimulus (e.g., "failure") appeared on the screen for either 250 ms or 1500 ms. After the presentation of the prime stimulus, there was a blank screen for 300 ms (for total SOAs of 550 and 1800 ms) and then the target stimulus (e.g., "rejection") was presented until the participant responded, or for up to two seconds. They were told to respond as carefully and as quickly as possible. No feedback was given as to whether they had responded correctly or not, as this might have inadvertently served as a success or failure stimulus. There were 128 trials in total; the task took between 10 and 15 minutes to complete.

After completion of the lexical decision task, the experimenter provided participants with a questionnaire packet that included the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This scale is generally considered to be a highly reliable measure of trait self-esteem, relatively uninfluenced by situational variables (Tafarodi & Swann, 1995). After finishing the questionnaires, participants were debriefed by the experimenter and thanked for their participation.

Results and Discussion

Preliminary Analyses

Participants were designated as either high or low self-esteem following a median split procedure on their scores on the Rosenberg Self-Esteem Scale.[1] Men and women did not significantly differ in mean self-esteem scores. Error trials were discarded, and a mean reaction time was calculated for each of the prime–target sets

(success – acceptance, success – rejection, failure – rejection, and failure – acceptance), at each SOA, by averaging across relevant trials.

Main Analyses

The main analysis was a 2(self-esteem) × 2(gender) × 2(SOA) × 2(prime word) × 2(target word) analysis of variance with SOA, prime, and target as within-subject factors and self-esteem and gender as between-subjects factors. The effects of interest[2] were interactions involving the contingency pattern, expressed as a prime by target interaction in which acceptance targets are identified relatively more quickly following success prime primes and rejection targets are identified more quickly following failure prime primes.[3] The first prediction, that low self-esteem individuals would show a more pronounced contingency pattern than high self-esteem individuals, was supported by a marginally significant three-way interaction between self-esteem, prime and target, $F(1, 42) = 3.44$, $p = .07$. As predicted on the basis of Baldwin and Sinclair's (1996) findings, only low self-esteem individuals showed the contingency pattern, responding faster to rejection words when they were preceded by a failure prime ($M = 759.42$, $SD = 102.98$) than a success prime ($M = 792.19$, $SD = 118.16$), and faster to acceptance words when they were preceded by a success prime ($M = 695.85$, $SD = 97.99$) than a failure prime ($M = 708.81$, $SD = 105.17$), $F(1, 22) = 6.22$, $p = .021$. There was no contingency pattern evident for individuals with high self-esteem, $F < 1$.

Most importantly, the second major prediction, that reaction times would differ under spontaneous and deliberate processing conditions, was supported. The four-way interaction between self-esteem, SOA, prime, and target was significant, $F(1, 42) = 5.67$, $p = .022$. Under spontaneous processing conditions, only individuals with low self-esteem showed significant interpersonal contingencies, $F(1, 22) = 16.63$, $p < .001$, responding faster to rejection words when they were preceded by a failure prime ($M = 736.97$, $SD = 109.91$) than by a success prime ($M = 798.11$, $SD = 130.59$), and faster to acceptance words when they were preceded by a success prime ($M = 671.96$, $SD = 99.02$) than by a failure prime ($M = 717.10$, $SD = 139.72$) (see Figure 1a). High self-esteem individuals did not show contingencies at the short SOA, $F < 1$, *ns* (see Figure 1c). At the long SOA, neither individuals with low nor high self-esteem showed interpersonal contingencies, $F < 1$, *ns* (see Figures 1b and 1d).

Gender was not a moderator of the first predicted pattern, but it did moderate the second prediction as shown by a significant five-way interaction between gender, self-esteem, SOA, prime, and target, $F(1, 42) = 4.24$, $p = .046$. Importantly, both men and women with low self-esteem showed the interpersonal contingency effect at the short SOA only; however, the pattern was slightly more pronounced in men $F(1, 13) = 11.87$, $p = .004$, than in women, $F(1, 8) = 4.51$, $p = .066$. Neither men nor women with low self-esteem showed significant interpersonal contingencies when given the chance to engage in deliberate processing, $Fs < 2.50$, *ns*. Finally, neither men nor women with high self-esteem showed contingencies at either SOA.

These results are consistent with those of Baldwin and Sinclair (1996), in that low, but not high, self-esteem individuals showed if – then contingencies of interpersonal acceptance. Furthermore, the presence of the pattern in the short SOA condition demonstrated that *if – then* contingencies function relatively spontaneously, without the necessity of extensive deliberation. This implies that, for individuals with low self-esteem, successes and failures are readily linked to
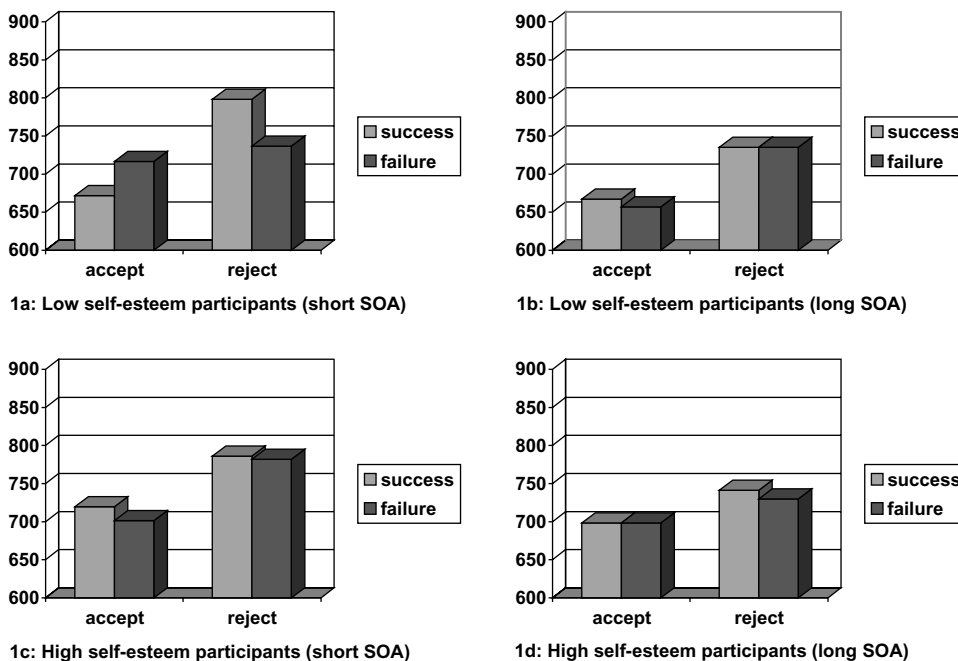
1a: Low self-esteem participants (short SOA)

1b: Low self-esteem participants (long SOA)

1c: High self-esteem participants (short SOA)

1d: High self-esteem participants (long SOA)

FIGURE 1   Study One: Reaction times in milliseconds as a function of self-esteem, SOA, prime word, and target word.

feelings of interpersonal acceptance and rejection. This supports the hypothesis that feelings of low self-esteem arise, at least in part, from spontaneous associations representing success – acceptance and failure – rejection, in the form of *if – then* contingencies (e.g., "If I fail, then I will be rejected"). These contingencies did not appear in individuals with high self-esteem whether they were engaging in spontaneous or controlled processing. These results, and the indication of a gender difference, will be further discussed shortly.

Study Two

Study Two was a replication of Study One with some slight modifications in the stimulus list and SOAs. The SOAs were modified such that the long SOA was lengthened, to allow more time for deliberate processing to occur, and the short SOA was shortened, to further test the limits of the phenomenon.

Method

Participants. Sixty-two undergraduate students participated in the experiment: fifteen participated in fulfillment of an optional component of their introductory social psychology course, and forty-seven students were recruited from various undergraduate classes and received $10.00 for their participation. The computer data from four participants were lost due to technical error, and the data from six participants were excluded from the analyses because they failed to complete two or more error-free trials per prime – target condition, or to make an average of less than

two errors per condition. Ages of the final 52 participants (26 men, 26 women) ranged from 17 to 26 with a mean age of 20 years.

Stimuli. The stimulus list was modified slightly from Study One. The 48 prime stimuli consisted of 16 words related to success, 16 words related to failure, and 16 rows of Xs to serve as baseline trials.[4] These prime stimuli were paired with 24 acceptance, 24 rejection, and 48 nonword targets, such that each prime was paired once with a word and once with a nonword. On half the trials the prime word was presented for 250 ms; on the remaining trials the prime word was presented for 2 s. In each case the prime word was followed by a 50 ms blank screen. Note that this 50 ms presentation of the blank screen is briefer than in Study One. When added to the 250 ms prime presentation, this produces a total SOA of 300 ms on the short trials, thus bringing the SOA firmly into the range typically associated with "automatic" processing (see Bargh & Chartrand, 2000). There were 96 trials in total.

Procedure. The procedure was the same as that in Study One.

Results and Discussion

Preliminary Analyses

Participants were designated as either high or low self-esteem following a median split procedure on their scores on the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Men and women did not significantly differ in mean self-esteem scores.

Main Analyses

Data were analyzed as in Study One. The major predictions were, first, that the contingency pattern would be more pronounced for individuals with low self-esteem than individuals with high self-esteem and, second, that the effects would differ as a function of SOA. Neither of these interaction effects reached significance in this study, $Fs > 2.50$.

There was evidence, however, that both predicted effects were moderated by gender. There was a significant gender by self-esteem by prime by target interaction, $F(1, 47) = 16.06, p < .001$, and a marginally significant gender by self-esteem by SOA by prime by target interaction, $F(1, 47) = 3.43, p = .070$. Examination of the two major predictions in men yielded no significant effects, $Fs < 2.50$. Among women, however, the contingency finding from Baldwin and Sinclair (1996) was strongly supported, as revealed by a significant three-way interaction between self-esteem, prime, and target, $F(1, 24) = 20.67, p < .001$. Low self-esteem women showed a strong contingency pattern, responding faster to rejection words when they were preceded by a failure prime ($M = 761.78, SD = 114.52$), than a success prime ($M = 823.45, SD = 116.79$), and faster to acceptance words when they were preceded by a success prime ($M = 683.14, SD = 84.87$), than a failure prime ($M = 762.91, SD = 155.37$), $F(1, 11) = 16.51, p = .002$. High self-esteem women actually showed a marginally significant reversal of this pattern, responding more slowly to rejection words when they were preceded by a failure prime ($M = 821.75, SD = 157.03$), than a success prime ($M = 774.58, SD = 140.06$), and more slowly to acceptance words when they were preceded by a success prime ($M = 732.70, SD = 135.99$), than a failure prime ($M = 722.18, SD = 109.72$), $F(1, 13) = 4.40, p = .056$.

The second prediction was that reaction-time patterns would be moderated by SOA, and among women the SOA by self-esteem by prime by target was marginally significant, $F(1, 24) = 2.94$, $p = .099$. Further analyses revealed that women with low self-esteem displayed the contingency pattern in both the short SOA, $F(1, 11) = 7.41$, $p = .020$, and long SOA, $F(1, 11) = 4.21$, $p = .065$, conditions (see Figures 2a and 2b). Based on the findings of Study One we did not expect women with high self-esteem to show the contingency pattern, and indeed at the short SOA they did not, $F < 1$ (see Figure 2c). At the long SOA, there was a significantly reversed prime by target contingency pattern (see Figure 2d), $F(1, 13) = 11.78$, $p = .004$.

The results of this second study confirmed that the if – then contingencies of interpersonal acceptance associated with low self-esteem influence social information processing even under automatic processing conditions. High self-esteem women, on the other hand, did not show these *if – then* contingencies at either the automatic or controlled processing conditions, even showing an opposite pattern under controlled processing conditions. At the long SOA, when there was sufficient time to allow for controlled, deliberate processing, women with high self-esteem recognized rejection words more slowly when preceded by failure than by success primes, and acceptance words more slowly when preceded by success than by failure primes. This pattern suggests that high self-esteem women might have been actively inhibiting any contingencies between failure – rejection and success – acceptance. Perhaps an orientation that filters out the perception of certain types of experience might be a key factor enabling them to avoid learning the kinds of contingencies of acceptance that trouble individuals with low self-esteem. We return to this possibility shortly.
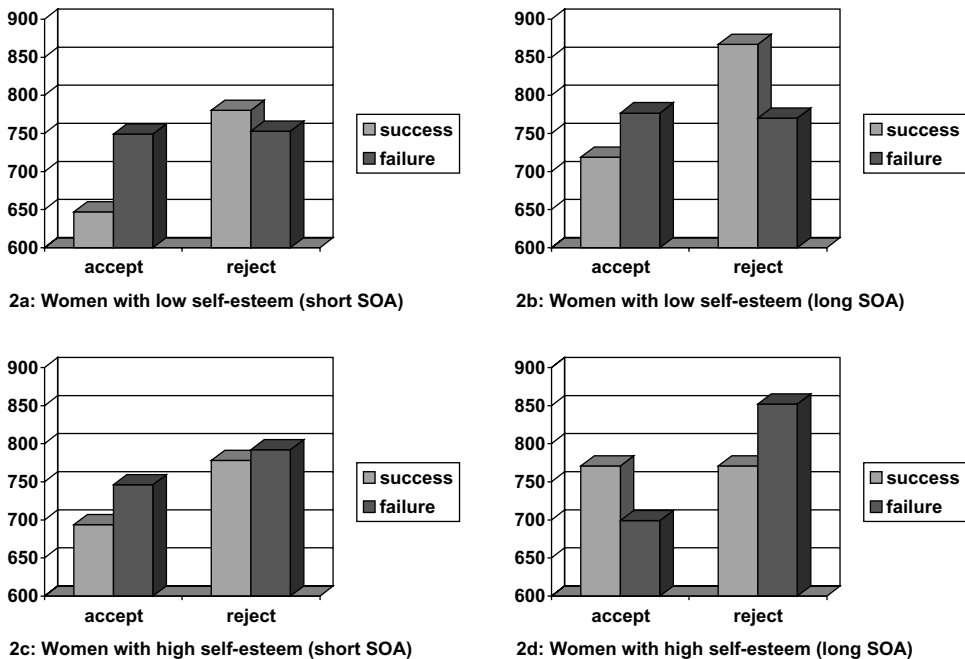

2a: Women with low self-esteem (short SOA)

2b: Women with low self-esteem (long SOA)

2c: Women with high self-esteem (short SOA)

2d: Women with high self-esteem (long SOA)

FIGURE 2 Study Two: Women's reaction times in milliseconds as a function of self-esteem, SOA, prime word, and target word.

Unexpectedly, in this sample men with low self-esteem did not appear to associate success or failure with interpersonal outcomes of acceptance or rejection. Although some research has shown gender differences in specific self-esteem dynamics (e.g., Josephs, Markus, & Tafarodi, 1992), the earlier lexical decision work on *if – then* contingencies did not reveal any gender effects (Baldwin & Sinclair, 1996). Given this inconsistency with the earlier work we are reluctant to infer too much from the gender difference on the basis of the current study alone. There is other evidence in the literature that women are more sensitive to the interpersonal aspects of self-evaluation than men (e.g., Baldwin & Keelan, 1999; Josephs et al., 1992), and this would be one interpretation of the finding that the contingency patterns were evident only for women. However, in our first study the patterns were, if anything, slightly more reliable for male participants. Thus our working hypothesis remains that contingencies of social evaluation are central to self-esteem dynamics, for both men and women. It remains a possibility, however, that gender, or some unidentified third variable associated with gender, moderate the specific domains or contingencies of social evaluation (cf. Crocker & Wolfe, 2001), and we see this as a promising topic for future research.

General Discussion

Our results contribute to the growing body of evidence that self-esteem is wrapped up with perceptions of the quality and dynamics of one's social relations. High self-esteem involves feeling securely accepted and included by others, regardless of successes and failures; low self-esteem involves an expectation that acceptance is highly conditional and therefore tenuous.

Consistent with earlier work by Baldwin & Sinclair (1996), we found that, among individuals with low self-esteem, thoughts of failure and success activated contingent interpersonal expectations. Furthermore, these expectations appeared in the context of spontaneous, automatic responses. For these individuals, social acceptance must seem always tenuous: Even if one could hope to maintain a level of belonging by exhibiting socially desirable characteristics and successes, the first indication of a failure would automatically trigger thoughts of being suddenly outcast. We interpret this expectancy as a spreading activation phenomenon, whereby the activation of a node representing failure spreads automatically via associative links to a node representing social rejection (see Baldwin, 1992; Baldwin & Sinclair, 1996). The increased accessibility of this rejection node renders it cognitively fluent, making it seem more likely than other, less fluent, outcome possibilities. This expectancy interacts with motives for social belonging and acceptance to produce affective responses that are experienced as self-esteem feelings (Baldwin & Baccus, 2003).

High self-esteem individuals reacted quite differently. We wondered if they might show a similar contingency pattern in their spontaneous reactions, that they would then control when given adequate time to intentionally process the information. They did not. Individuals with high self-esteem showed no evidence whatsoever of the failure – rejection contingency pattern, even in their most spontaneous responses. At the same time, in the second study there was an intriguing finding that under controlled processing conditions high self-esteem women actually showed a reverse-contingency pattern, wherein acceptance thoughts were identified more quickly after failure than after success prime words (see Figure 2d). This suggestion of an inhibitory response suggests that individuals with high self-esteem may maintain

their positive social expectancies by deliberately reminding themselves that they will be accepted even if they fail. Presumably these individuals have seen evidence that they tend to be generally accepted by others, through a history of unconditional attachment to non-critical significant others (e.g., Koestner, Zuroff, & Powers, 1991), and keeping this knowledge in mind might serve to inhibit negative contingencies even on an automatic level. While this pattern must be interpreted cautiously, particularly as it was not evident in the first study, we note that it is consistent with other research (Baldwin & Kay, 2004) suggesting that securely ① attached individuals may respond to failure stimuli by inhibiting rejection expectancies.

The present findings might be interpreted more broadly, as representing self-esteem differences in affective priming and affect regulation, rather than in the activation of interpersonal knowledge per se. For example, other research (e.g., Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Wentura, 2000) has shown that priming one negatively-valenced stimulus facilitates responses to any second negative stimulus. This alternative interpretation of the self-esteem effect was ruled out in previous research (Baldwin & Sinclair, 1996) in which it was shown that failure and success primes did not have the same effect on the processing of targets that were affectively valenced but not interpersonal, such as freedom and decay. We did not include these control trials in the current study because by adding the SOA factor, and thereby doubling the number of trials, we were already taxing our participants' patience with the repetitive task. It remains a possibility for future research, therefore, to examine whether people might respond differently to interpersonal versus noninterpersonal information under spontaneous and controlled processing conditions.

In conclusion, our results fit well with other findings that many self-processes, long thought to be reliant on deliberate, explicit processing, might function at an automatic or implicit level (e.g., Farnham, Greenwald, & Banaji, 1999; Koole, Dijksterhuis, & van Knippenberg, 2001; Pelham, Mirenberg, & Jones, 2002). In particular, the current findings support the view that the negative self-evaluative feelings associated with low self-esteem arise from the spontaneous activation of interpersonal expectations of contingent acceptance and rejection. If the self-esteem system is indeed based on a sociometer that, through evolutionary pressures, has developed to monitor social exclusion and inclusion (see Leary et al., 1995), it seems functional that this system would carry out its task automatically and in an ongoing manner. To the extent that a person has learned that acceptance is highly conditional on successful performances, he or she would be expected to exhibit the automatic contingency expectations shown here by low self-esteem individuals. These associations might not influence deliberate judgments: When individuals with low self-esteem are questioned about the irrationality of their thoughts (e.g., their sense that failure will result in rejection by others), they may be able to acknowledge that the thoughts are illogical and perhaps even dysfunctional. However, the current findings show that the activation of these expectations occurs within the first fraction of a second of thinking about the failure, and outside of their cognitive control, contributing to their pervasive and persistent feelings of low self-esteem. In many cases, the contingency pattern might have been learned in childhood but is no longer a necessarily accurate view of relational dynamics. Still, the expectation itself can lead to a self-fulfilling prophecy that leads to rejection and social distancing (Murray, Holmes, & Griffin, 2000). The findings for individuals with high self-esteem hold out hope, however, that persistently activating thoughts related to noncontin-

gent acceptance—although starting at a deliberate, controlled level—might eventually modify even automatic activation patterns. Having a sociometer calibrated to be less performance-contingent might have benefits, as the individual is released from the social anxieties and self-evaluative preoccupations that so often undermine performances and interpersonal interactions (Leary, Schreindorfer, & Haput, 1995).

Notes

1. Because the predicted effects involved fairly complex patterns of mean reaction times (e.g., RTs to rejection rather than acceptance targets for high versus low self-esteem individuals for short versus long SOAs) an ANOVA approach was taken, designating participants as low or high in self-esteem via median split rather than conducting regression analyses using the Rosenberg Self-Esteem Scale as a continuous measure. The ANOVA approach also had the advantage of maintaining consistency with the analyses conducted in the original Baldwin & Sinclair (1996) study.
2. In both studies, the ANOVA revealed a number of effects not directly relevant to the central hypotheses. For example, participants overall responded to the target words faster in the short SOA condition than in the long SOA condition, and identified acceptance words faster than rejection words. Because all of these findings are qualified by the higher-order interactions described in the text, they will not be discussed further.
3. Our predictions involved the contingency interaction pattern. Previous research (Baldwin & Sinclair, 1996) has shown that this pattern sometimes appears to primarily involve effects on rejection targets (with RTs being facilitated by failure primes or inhibited by success primes), and sometimes effects on acceptance targets (with RTs being facilitated by success primes or inhibited by failure primes). Although we recognize that variations across studies or across analyses on the details of these patterns may reflect meaningful distinctions, we also believe that all four of the elements contributing to the interaction effect represent the sense that acceptance is conditional or contingent, and so we made no specific predictions about pairwise comparisons of means. Moreover, the significant contingency interaction effects reported in the text, if decomposed to the pairwise level, often yielded nonsignificant and inconclusive results. The absence or inconsistency of pairwise effects does not undermine the validity of the interaction pattern, of course, so we have chosen to focus on the predicted contingency pattern in the text. We include means and standard deviation information for some of the key analyses, for those interested in conducting their own pairwise tests.
4. The stimulus list was modified in attempt to create a neutral context to use as a baseline again which participants' reactions to failure and success primes could be compared. In particular, the prime words on some trials were replaced by letter strings of varying lengths of Xs. As in some other lexical decision studies (e.g., Baldwin & Sinclair, 1996; see also Neely, 1991, for discussion), however, these trials did not prove useful: participants on the whole responded more slowly to target words after being presented with the string of Xs, but these trials did not elucidate the findings related to self-esteem and so will not be discussed further.

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