

## THE CUED ACTIVATION OF ATTACHMENT RELATIONAL SCHEMAS

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People's interaction expectancies and views of self are shaped by accessible relational schemas, knowledge structures representing regularities in interpersonal experience. Recent research using classical conditioning paradigms has examined the possibility of creating associations between neutral cues and specific relational schemas so that presentation of the cue serves to activate the relational expectancies. In the current study, a lexical decision task was employed to assess the cued activation of acceptance and rejection expectations as a function of chronic attachment orientation. Participants visualized relationships in which they felt *noncontingently versus contingently* accepted by another person; while doing so they were given repeated computer presentations of distinctive tone sequences. Later, these conditioned tones were played again while participants performed lexical decisions on stimuli that represented *if-then* contingencies of interpersonal acceptance and rejection. Results indicated that the conditioning procedure had *different effects, depending on participants' chronic attachment orientations*. Specifically, when presented with a cue that had been conditioned to a contingent relationship, people high on the preoccupied orientation showed the activation of rejection contingencies, whereas people high on the secure orientation showed the activation of acceptance contingencies.

Most people have available to them a repertoire of "relational schemas," or cognitive structures representing a range of common interpersonal orientations: from expecting that another person will be consistently accepting, for example, to expecting that others will be evaluative or judgmental (see Baldwin, 1992, for a review). People's response to new

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information reflects in part the particular interpersonal model that becomes activated at the time, shaping their expectancies, motivation, and sense of self. If a man in a stressful encounter is somehow reminded of his warm and supportive friends, for example, he may feel more self-confident and anticipate generally positive responses from his current interaction partner. Conversely, a woman who loses a tennis match might feel particularly upset if something in the situation brings back memories of being criticized by her father. Previous research has demonstrated the impact of activated relational schemas on self-evaluation (e.g., Baldwin, 1997; Baldwin & Holmes, 1987), social anxiety (Baldwin & Main, 1998), expectancies of social support (Pierce & Lydon, 1998), and attachment orientations in close relationships (Baldwin et al., 1996).

The current study involved the cued activation of interpersonal knowledge structures related to security and insecurity in interpersonal relationships. Specifically, we examined relational schemas representing either noncontingent or contingent interpersonal acceptance. Numerous authors have discussed a range of emotional and interpersonal phenomena, including low self-esteem, social anxiety, and depression, which can derive from an expectation that other people are not unconditionally accepting, but rather accept one only contingently—only to the extent that one lives up to certain standards of successful performance (e.g., Deci & Ryan, 1995; Downey & Feldman, 1996; Hewitt & Flett, 1991; Higgins, 1987; Kuiper & Olinger, 1986; Rogers, 1959; Sullivan, 1953). For people who anticipate that "IF I succeed, THEN people will like me; but IF I fail, THEN people will reject me," feelings of self-worth and acceptance are insecure, and always "on the line" (Kernis & Waschull, 1995, p. 99).

If-then interpersonal expectancies shape social information processing in predictable ways: In the burgeoning adult attachment literature, for example, much research has supported the thesis that if a person repeatedly experiences certain negative interpersonal patterns, such as through a long history of being rejected by relationship partners, he or she comes to feel insecure in that context and to anticipate similar outcomes in the future (Baldwin et al., 1993; Baldwin et al., 1996; Bowlby, 1973; Collins & Read, 1994; Hazan & Shaver, 1987). Chronic insecurity in relationships takes its toll on self-esteem, as people who feel unsure that significant others like and accept them also report less self-liking and are less likely to seek interpersonal acceptance (e.g., Brennan & Morris, 1997). People with if-then expectancies linking success to interpersonal acceptance and failure to interpersonal rejection tend to have chronically low self-esteem (Baldwin & Sinclair, 1996). In the current research, therefore, we further explored the links between attachment security and the anticipation of acceptance and rejection.

The information processing effects of interpersonal knowledge structures are theorized to result from the automatic spread of activation be-

tween the elements of if-then outcome expectancies (Baldwin, 1992). That is, the representation of if-then expectancies can be conceptualized as an associative link between nodes representing the "if" context (e.g., "failure") and the "then" outcome (e.g., "rejection"). In this example, when the person contemplates failing, activation then spreads automatically to the rejection node, making thoughts and images of rejection more accessible. To examine this process rather directly, in some of our previous research (Baldwin et al., 1993; Baldwin & Sinclair, 1996) we have used an adaptation of the lexical decision task (Meyer & Schvanveldt, 1971), borrowing from cognitive psychology this standard paradigm used to assess links among related elements of an associative network. In the typical version of the task, the participant views a series of letter strings presented on a computer screen and tries to identify each as quickly as possible as either a word or a nonword. If, at the beginning of a trial, a context word is shown that is in some way related or associated to the target word that follows, this facilitates identification of the target. People are reliably quicker to identify the target word "nurse," for example, if they have just been shown the related context word "doctor," compared to an unrelated context word such as "bread."

We have modified the lexical decision task to examine the behaviors and interpersonal outcomes that different kinds of people automatically associate in if-then contingencies. For low but not high self-esteem individuals, for example, words representing acceptance were more quickly identified after a success than after a failure word; rejection words were identified more quickly in the context of failure than success (Baldwin & Sinclair, 1996). These spreading activation effects were not simply due to the valence of the target words, because noninterpersonal positively and negatively toned targets did not show a similar pattern of activation. The specific if-then associations, then, appeared to be at the core of the cognitive structure underlying attachment insecurity and self-evaluative difficulties (see also Baldwin et al., 1993).

## THE ACTIVATION OF RELATIONAL SCHEMAS

As in any other domain of social knowledge, relational schemas can become activated as a result of both chronic and temporary accessibility. Against a backdrop of their chronic relationship orientations, people also can experience shifts from one state of mind to another: A woman might feel very differently about her upcoming presentation at work, for example, depending on whether she has recently been thinking about friends who like her unconditionally or colleagues whose opinion of her is largely contingent on her achievements and competencies.

It is possible to activate experimentally a person's model of a certain kind of relationship. In a number of priming studies using guided visu-

alizations, subliminal primes, or simple presentations of names, participants have been reminded of a contingent, judgmental significant other. Later in the session, participants show self-evaluative effects congruent with the activated structure, for example reporting lowered self-esteem and negative mood after experimentally induced failure (e.g., Baldwin, 1994; Baldwin, Carrell, & Lopez, 1990; Baldwin & Holmes, 1987).

Following up on this work, we have used the lexical decision paradigm to examine more directly the if-then expectancies activated along with a primed relational schema. In one study (Baldwin & Sinclair, 1996; Study 3), participants visualized either a noncontingently accepting or else a contingent, evaluative significant other, and then performed the word-identification task. As predicted, those who had been primed with the contingent relationship were particularly likely to show the reaction-time pattern in which failure contexts were associated with rejection outcomes and success contexts were associated with acceptance outcomes. This demonstrated the utility of the lexical decision task for examining temporarily activated associative structures, as well as chronically accessible structures, as demonstrated in our earlier research.

## CUED ACTIVATION

The emphasis of the current research was on the phenomenon of cued activation. In day-to-day life, relational schemas are sometimes activated rather directly, as in the kinds of priming manipulations just described: by a chance encounter with an ex-lover, a phone message from one's mother, or a picture of a close friend, for example. Other less obvious triggers may be just as powerful, however, and may be even more common. It has often been observed, for example, that specific stimuli such as a song on the radio or the whiff of a familiar perfume can act as a cue for a specific network of memories and expectations. Relational schemas cued by such innocuous stimuli may sometimes lead to baffling experiences, such as distorted perceptions of ambiguous interpersonal or self-relevant experiences. While the results may often be inconsequential—or even salutary, in the case of “positive illusions” (e.g., Murray & Holmes, 1993)—the activation of relational schemas involving rejection can sometimes prove dysfunctional, and therapy often involves identifying their triggers (e.g., Horowitz, 1988).

In several recent studies (Baldwin, Granzberg, & Pippus, 1997; Baldwin & Main, 1998), we have examined triggering effects by using basic classical conditioning paradigms to associate neutral stimuli to specific relational schemas, so that later these formerly neutral cues can serve as conditional stimuli (CS) to activate these structures. In one study (Baldwin, Granzberg & Pippus, Study 1, 1997), we had participants visualize one of their significant others: either a person who was very accepting of them or someone

who was critical of them. For the 2 or 3 minutes while they were visualizing this person, the computer terminal they were working at emitted a distinctive pattern of tones. Ten minutes later, after a filler task, participants were asked to solve some very difficult anagrams while under time pressure. During this task, the computer repeatedly emitted either the tone sequence participants had heard during the visualization phase, or else different tones (all tones were counterbalanced). Analyses showed a significant interaction between the visualization manipulation (accepting vs. critical other) and the nature of the tones (similar or different from the earlier phase). For example, participants reported more distracting thoughts and lowered self-evaluations when the tone sequence played during the task was the cue for the critical, evaluative relationship.

In some of the previous studies, the effects of the triggering manipulation were moderated by relevant individual difference variables. In the studies just described (Baldwin et al., 1997), for example, people with a low level of autonomous self-esteem were particularly bothered by the cue for the critical relationship. Research with this paradigm therefore reveals the impact of both chronic and temporary accessibility.

## THE CURRENT STUDY

We sought to take the next logical step in this research program, bypassing evaluative self-reports to examine more directly the patterns of activation arising from presentation of the conditioned stimuli. For this we turned again to the lexical decision task. We predicted that via the conditioning procedure a neutral stimulus could come to activate a contingent relational schema, which would in turn produce spreading activation from success contexts to acceptance targets, and failure contexts to rejection targets.

We anticipated that, as in the previous research, the conditioning effect would be moderated by individual differences in how people typically think about their relationships and themselves. That is, people who have a particularly well-elaborated relational schema representing all the myriad reasons why someone might reject them, should be especially prone to forming new associations between this structure and a new cue. For an index of working models of acceptance and rejection we used the Bartholomew and Horowitz (1991) Relationship Questionnaire, a well-established tool for assessing people's self-reported chronic attachment security. In this measure, respondents characterize their typical style of relating to significant others by rating the descriptiveness of four prototypical relationship orientations. The four prototypes include two that explicitly mention thoughts about being valued or accepted by others: the “secure orientation,” involving comfort with closeness and trust in others, includes the statement “I don't worry about being alone

or having others not accept me"; the "preoccupied orientation," involving the desire for relationships along with an uncertainty about the probable reactions of others, includes the statement "I sometimes worry that others don't value me as much as I value them." The remaining two orientations are less obviously about being accepted or evaluated, but nonetheless are relevant to interpersonal security: the "dismissing orientation" involves discomfort with dependency, leading to aloof detachment from relationships; the "fearful orientation" involves worries about being exploited or hurt by others.

We premeasured participants' chronic attachment orientations and later had them undergo a conditioning phase in which different neutral tones were paired with noncontingent versus contingent acceptance experiences. We then tested the activation of relational schemas by conducting a lexical decision task while the now conditioned tones (either the CS-noncontingent or the CS-contingent, in a between-subjects design) were played in the background. Previous research with the Bartholomew and Horowitz measure (and the similar three-category instrument introduced by Hazan & Shaver, 1987) suggests that it assesses the kinds of individual differences that would be expected to moderate the cued activation effects we were interested in (see, e.g., Hazan & Shaver, 1994, for a review), since the procedure involving the activation of working models might be experienced quite differently by people of different chronic attachment orientations.

The tendency to feel insecure in relationships, for example, correlates with memories of parents as inconsistent or rejecting (Hazan & Shaver, 1987), and the tendency to expect rejection, hurt, and abandonment by others (e.g., Baldwin et al., 1993). The preoccupied orientation in particular correlates with a tendency to focus on rejection when interacting with others (Mikulincer & Nachson, 1991). Thus, we predicted that people higher on the preoccupied orientation would show strong conditioning of contingencies of rejection. The secure orientation, on the other hand, correlates with trust in others and the ability to draw comfort and social support from accepting significant others (e.g., Simpson, Rholes & Nelligan, 1992). Security in relationships has also been shown to correlate with an orientation toward seeking positive feedback from relationship partners (Brennan & Morris, 1997). Thus, we anticipated that security would correlate with either the conditioning of contingencies about acceptance, or perhaps of expectancies that acceptance is always available, noncontingently. As for the fearful and dismissing orientations, we could make no clear predictions. Both are assumed to reflect insecurity in relationships, and so could be hypothesized to facilitate the conditioning of rejection contingencies. At the same time, both are associated with avoidance of or lack of involvement in relationships and so might reduce the impact of thinking about significant others. More important, neither description involves any

explicit mention of rejection or acceptance expectancies, but rather focuses more on issues of trust and dependency. By using the Bartholomew and Horowitz (1991) four-category measure which differentiates these two types of avoidant orientations (as opposed to the original Hazan & Shaver, 1987, a measure that assesses only one) we could examine the possibility that the fearful orientation, which involves worries about being hurt, might correlate with the activation of rejection contingencies—even if the dismissing orientation, which involves issues of self-sufficiency and independence but no mention of interpersonal expectancies, might not.

## METHOD

### PARTICIPANTS

The participants were 42 introductory psychology students at the University of Winnipeg who, approximately 4 months earlier in the school year, had completed the Bartholomew and Horowitz (1991) Relationship Questionnaire as part of a battery of personality measures administered during a mass-testing session.<sup>1</sup> All received course credit for their participation. Data from two participants were discarded as they did not reach the criterion of making fewer than 10 errors for the 32 success- and failure-context trials during the lexical decision task. This left 40 participants (29 women, 11 men).

### MATERIALS

During the experimental session, participants filled out an Interpersonal Information Questionnaire (based on Baldwin et al., 1996, Study 3) in which they generated names of people who fit certain descriptions (e.g., someone who is always happy, someone who is always sad, etc.). For the "noncontingently accepting" person, participants were asked to nomi-

1. Previous research has shown that ratings of attachment orientation are somewhat unstable, irrespective of the time lag between measurements, and this has been interpreted as reflecting the impact of temporarily activated relational schemas (Baldwin & Fehr, 1995). In the current study we elected to premeasure attachment orientations because measuring them during the experimental session might have introduced one of two confounds: First, if the orientations were measured before the conditioning or lexical decision tasks the act of filling out the scale might have activated all manner of attachment relationships, undermining the effectiveness of the conditioning manipulation. Second, if the attachment measure came after the other tasks it obviously could have been influenced by the conditioning manipulation. In any case, our goal in the study was precisely to manipulate the temporary accessibility of attachment working models, hypothesized to be the source of instability in the measure. Thus, the participant's state of mind on arriving at the experimental session was less of a concern than it might be in other studies where temporary accessibility is allowed to vary spontaneously.

nate "a person who tends to be very accepting and nonevaluative of you, simply accepting you for who you are"; for the "contingently accepting" person they nominated "a person who tends to be very evaluative of you and seems to accept you only to the extent that you live up to certain standards of performance."

For the lexical decision phase of the study, the materials used by Baldwin and Sinclair (1996) were employed. A total of 96 words, selected with the aid of a thesaurus, represented the following categories: 48 context stimuli, comprising 16 success words (e.g., win, competent), 16 failure words (e.g., lose, incompetent), and 16 neutral words (e.g., begin, estimate); 48 target stimuli, comprising 12 acceptance words (e.g., cherished, respected), 12 rejection words (e.g., abandoned, ridiculed), 12 positively valenced noninterpersonal words (e.g., amuse, tranquil), and 12 negatively valenced noninterpersonal words (e.g., decay, vulgar). Forty-eight nonwords were also generated by taking common words and changing one letter (e.g., "listened" became "lisrened").

## PROCEDURE

The experimental sessions involved groups of 10 to 12 participants, conducted in a computer laboratory containing 25 personal computers set at similar monitor intensities. Upon entering the lab participants were asked to fill out a consent form and then complete the Interpersonal Information Questionnaire in which they each generated the names of one noncontingently accepting and one contingently accepting person. They were instructed to wait until all participants had completed this phase and the experimenter told them to start their computers. In this manner, the conditioning phase would occur at roughly the same time for all participants.

Following the instructions presented via computer, participants began by visualizing one of the people they had identified on the Interpersonal Information Questionnaire. Approximately half the participants in each session were randomly assigned to visualize the noncontingently accepting person; the other half were assigned to visualize the contingent person (target persons were labeled by their number on the questionnaire at this point, rather than by any sort of interpersonal description, to minimize possible demand characteristics). While participants were visualizing this person, the computers produced a distinctive 1 s tone-sequence every 5 s for 90 s. Counterbalanced across sessions, this tone was either a high-pitched doorbell-like sound or else a sequence of lower tones increasing in pitch. All participants in each session were presented with the same tone sequence, as the computers were close enough to each other that it would have been impossible to shield participants from the sounds from neighboring computers. Note, however, that within sessions partic-

ipants were randomly assigned to whether the tone was being conditioned to a noncontingently or contingently accepting other. After the visualization, participants were directed to fill out a short questionnaire about the vividness and clarity of their visualization, in order to support the cover story that the study was about "cognitive styles." They then worked for 5 minutes on a filler task, consisting of a booklet of word search puzzles. Then, the computer signaled them to begin visualizing another stimulus person for 90 s (either the contingently or noncontingently accepting other, depending on which they had already visualized), while the computers played the second tone sequence. This was followed again by the vividness questions and filler task.

The next phase of the experiment began with a description of the lexical decision task and a short set of practice trials. A context word—either a success, failure, or neutral word—was shown for 700 ms, allegedly as a distractor to make the task more difficult. Participants' task was then to press a key to indicate as quickly as possible whether the letter string that followed (after a 300 ms interstimulus interval) was a word or non-word; this letter string was either an acceptance or a rejection word, a nonword, or a positive or negative noninterpersonal word. All types of context words and target strings were combined, resulting in a total of 96 trials. The critical trials were those context-target combinations representing failure-rejection, failure-acceptance, success-rejection and success-acceptance contingencies (4 trials of each type; see Baldwin & Sinclair, 1996, for a more detailed description of the task).

The presentation of the CS occurred just before each trial of the lexical decision task. The particular tone sequence that was played was consistent across all trials and all subjects within any given session—that is, in a particular session all subjects might be presented repeatedly with the high, doorbell-like sequence. Again, though, this tone was the CS-noncontingent tone for some participants and the CS-contingent tone for others, and the particular tone sequence used in this phase was counterbalanced across sessions. The lexical decision task lasted approximately 15 minutes. All participants were debriefed as to the nature and purpose of the experiment and thanked for their participation.

## RESULTS

Participants responded incorrectly or after the 2-s time limit<sup>2</sup> on 9% of the word trials; these error trials were discarded. A mean reaction time

2. Setting the time limit for responding at 2 s results automatically in the discarding of trials where RTs are excessively long due to distraction or unfamiliarity with the target words. As a result, analyses can be performed on raw RT scores, without the necessity of transforming scores to minimize the impact of such outliers.

(RT) was then computed for each of the context-target pairings, averaging across the constituent trials. Because the major hypotheses of the study involved multiple continuous predictors, a regression approach to analyzing the data was adopted. Preliminary analyses showed no significant effects involving positively and negatively valenced noninterpersonal target words (cf. Baldwin & Sinclair, 1996), nor were there any effects when gender was entered as a predictor (whether analyzed alone or in interaction with CS condition). Analyses of interpersonal targets in the neutral context yielded no significant effects, and including RTs in the neutral context in subsequent analyses did not change the findings in the failure and success contexts. The four attachment dimensions were correlated in theoretically consistent ways (Bartholomew & Horowitz, 1991; See Table 1), and although some correlations were significant, the four dimensions were sufficiently independent that it was appropriate to proceed with analyses treating them as four distinct predictors. Importantly, the secure and preoccupied prototype ratings were not significantly correlated,  $r = -.07$ .

The predictions of the study concerned priming effects whereby RTs to identify rejection and acceptance targets would differ, depending on whether they were paired with failure contexts versus success contexts. Thus, two difference scores were computed to represent contingency: For acceptance targets, success-acceptance RTs were subtracted from failure-acceptance RTs; for rejection targets, failure-rejection RTs were subtracted from success-rejection RTs.<sup>3</sup>

3. An alternative method for conducting these analyses would be to analyze raw scores rather than difference scores, for example by analyzing RTs for rejection targets in the failure condition while controlling for RTs in the success condition as a kind of baseline. Because the sample was relatively small, efforts were made to conserve degrees of freedom; thus, each analysis was of a single difference score rather than assigning one degree of freedom to a baseline predictor. Also, discussion in terms of difference scores allows a better comparison to previous research based on an analysis of variance approach (e.g., Baldwin & Sinclair, 1996), while maintaining the benefits of a regression approach. Relatedly, in the major analyses the four terms representing interactions between the CS condition and the attachment orientations were examined separately, to conserve degrees of freedom and also because entering them in a block would only reveal the unique contribution of each predictor after controlling for the others (and although the predictors seemed theoretically distinct there was some indication of multicollinearity). In any event, the results actually were virtually identical whichever approach was used (i.e., difference scores vs. raw scores; separate analyses vs. simultaneous analyses), both for rejection and acceptance targets. The results were also consistent if RTs from the neutral context or from noninterpersonal targets were controlled for.

TABLE 1. Correlations Among Attachment Orientations

Measure	1	2	3	4
1. Secure	—	.00	-.07	-.34
2. Dismissing		—	-.49	.00
3. Preoccupied			—	.12
4. Fearful				—

Note.  $n = 40$ .

### ACCEPTANCE TARGETS

We first analyzed the RT difference score for acceptance targets. There were no overall effects for the four attachment premeasures (each centered by subtracting its mean) or for CS condition (contrast coded as 1 and -1), whether these were entered into a regression analysis independently or simultaneously. Thus, neither chronic attachment orientations nor the conditioning manipulation had an impact across the board. The hypothesized effects involved interactions between predictors, however. We therefore computed product terms to represent the interactions between CS condition and the premeasures, and examined each of these in turn (after controlling for the corresponding main effects). There was a significant increment in explained variance upon entering the term representing the interaction between CS condition and the secure attachment orientation,  $F(3, 36) = 6.96, p < .05$  (see Table 2). This interaction is displayed in Figure 1; Note that difference scores with positive values indicate the contingency effect that acceptance targets were identified more quickly in the success than in the failure context. In the CS-contingent condition, higher ratings on the secure attachment orientation correlated with the tendency to recognize acceptance targets more quickly in success rather than failure contexts,  $r(17) = .44, p = .06$ , whereas in the CS-noncontingent condition the correlation was reversed,  $r(19) = -.35, p > .10$ .

### REJECTION TARGETS

A parallel analysis was then conducted on RTs to rejection targets. As with the acceptance targets, there were no main effects for attachment premeasures or the CS condition. There was, however, a significant effect for the term representing the interaction between CS condition and the preoccupied attachment orientation,  $F(3, 37) = 5.91, p < .05$  (see Table 2). This interaction is displayed in Figure 2; Note that in this analysis, difference scores with positive values indicate the contingency effect that rejection targets were identified more quickly in the failure than the suc-

TABLE 2. Results of Regression Analyses for Acceptance and Rejection Difference Scores

Variables Entered	B	$\Delta F$	$\Delta R^2$
Criterion: Acceptance Difference Score			
Step One		.66	.02
CS Condition	.14		
Secure Orientation	.07		
Step Two		6.96*	.16
CS $\times$ Secure Orientation	.40		
Criterion: Rejection Difference Score			
Step One		.07	.00
CS Condition	.06		
Preoccupied Orientation	.00		
Step Two		5.91*	.14
CS $\times$ Preoccupied Orientation	.38		

Note. \* $p < .05$ .

cess context. As hypothesized, in the CS-contingent condition, higher ratings on the preoccupied attachment orientation correlated with a more pronounced priming effect,  $r(17) = .41$ ,  $p = .08$ , whereas in the CS-noncontingent condition, the correlation was reversed,  $r(20) = -.33$ ,  $p > .10$ . Unexpectedly, the interaction effect was attributable in part to negative difference scores shown by low-preoccupied individuals in the CS-contingent condition, indicating that these individuals recognized rejection targets less quickly in the failure than in the success context. This finding was unanticipated and will be discussed shortly.

## DISCUSSION

As in previous research, the sound of a computer-generated tone sequence, previously paired with thoughts of certain kinds of relationships, had an impact on how people processed interpersonal information. The lexical decision task revealed the cued activation of if-then contingencies as a function of participants' attachment orientations. This interaction between chronic orientations and specific aspects of contingency extends previous research on the activation of contingent relational schemas (e.g., Baldwin & Holmes, 1987; Baldwin & Sinclair, 1996), in which the tacit assumption has been that contingent acceptance and contingent rejection probably are closely related, since a significant other who is more accepting in the context of success is almost by definition more rejecting in the context of failure. Indeed, in the current data the correlation between the difference scores for acceptance and rejection targets was .31, indicating a tendency for people who showed one type of contingency to also show the other. The most pronounced

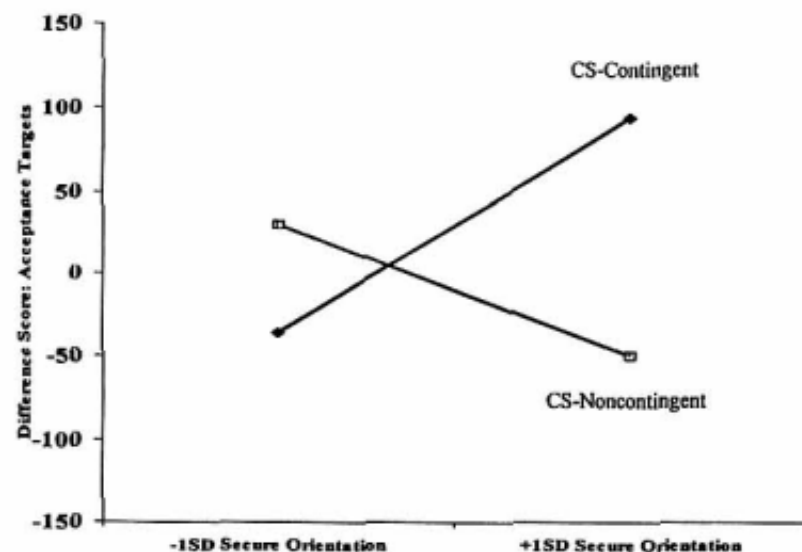


FIGURE 1. Reaction Time Difference Scores for Acceptance Targets as a Function of CS Condition and Secure Attachment Orientation

contingency effects were shown on different items for different types of people, however: For those higher in the preoccupied orientation, the CS-contingent led them to anticipate an if-then link between failure and rejection. For those higher in the secure orientation, the CS-contingent led them to anticipate a link between success and acceptance. In both cases the CS-contingent activated an expectancy of contingent, evaluative feedback; however, whereas having a preoccupied orientation led people to focus on the threat of increased rejection, having a secure orientation led people to focus on the possibility of earning increased acceptance. This interpretation fits well with other findings that highly preoccupied individuals tend to worry about rejection during interactions with others (Mikulincer & Nachson, 1991), whereas secure individuals tend to have high self-esteem (Collins & Read, 1990; Feeney & Noller, 1990) which has been linked with a focus on seeking positive rather than avoiding negative feedback from others (Baumeister, Tice, & Hutton, 1989; Brennan & Morris, 1997).

The significant interaction effects were due at least in part to trends in the CS-noncontingent condition which, while nonsignificant when examined by within-cell correlational analyses, nonetheless appeared opposite of the effects in the CS-contingent condition. We would not wish to place too much emphasis on these trends until they can be replicated, but

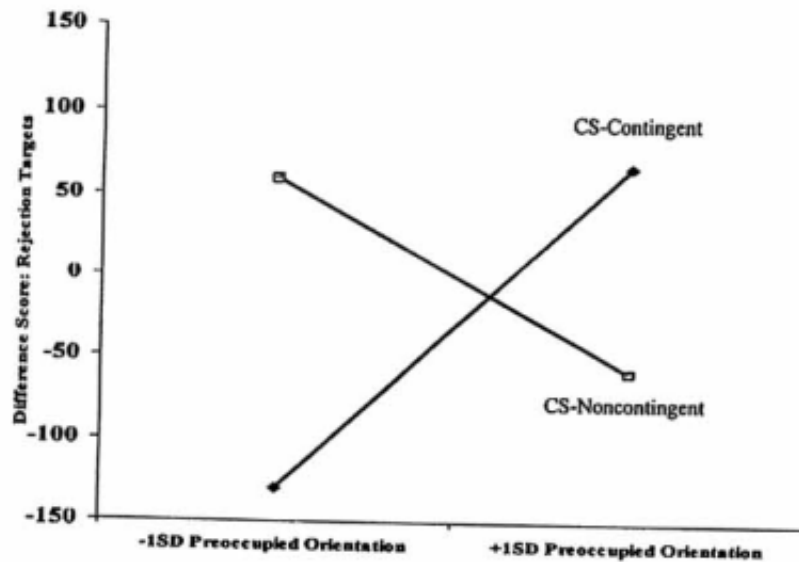


FIGURE 2. Reaction Time Difference Scores for Rejection Targets as a Function of CS Condition and Preoccupied Attachment Orientation

they may shed some light on different individuals' responses to thoughts of accepting significant others. People who were highly secure in their relationships, when primed with a noncontingently accepting other, became less negative in their expectations and, as indicated by difference scores with negative values, actually recognized acceptance targets somewhat more quickly in the context of failure compared with success. This suggests that they focused on the supportive aspects of this kind of relationship, in which the significant other is anticipated to be accepting "no matter what"; that is, even in the case of failure. A parallel analysis can be made of the trend for rejection targets, whereby high levels of the preoccupied orientation corresponded with slower reaction times in the failure than in the success context: In one other study (Baldwin & Main, 1998) a CS-noncontingent was particularly effective at reducing the rejection anxiety of people who were chronically anxious. It seems that for this type of individual, a noncontingent other is experienced as someone who will not be rejecting "no matter what"—thus, the basic premise is the same as that for secure individuals, but the focus is on a lack of rejection rather than the presence of a high level of acceptance.

More intriguing were the findings associated with having a low level of the preoccupied orientation. For these individuals, the CS-noncontingent seemed to activate contingent expectations on the re-

jection targets, and the CS-contingent produced strikingly opposite effects. In the CS-contingent condition, low levels of preoccupation corresponded with identifying rejection targets much more slowly in the failure than in the acceptance condition. We speculate that this may reflect a type of compensatory effect: People who rate themselves very low on this orientation disagree strongly with the statement that "I sometimes worry that others don't value me as much as I value them." It is plausible that when they were instructed to visualize a relationship in which the other person is highly evaluative, this led them to self-activate counterexamples of their many noncontingent relationships where failure and rejection are explicitly not linked together. Additional research is required to replicate and examine the processes leading to this finding, perhaps by including thought-listing measures to clarify how these individuals react to the contingent visualization.

The two avoidant orientations, fearful and dismissing, did not contribute to the prediction of conditioning effects in this study. We made no clear predictions for these variables, because they are not explicitly based on anticipations of interpersonal evaluation and acceptance, as are the secure and preoccupied dimensions. It is conceivable that the avoidant orientations might be more relevant to the conditioning of other types of expectations, however. Previous research (Baldwin et al., 1993) has linked avoidance to an expectancy of being hurt in close relationships, and the fearful prototype in particular explicitly includes the statement "I worry that I will be hurt if I allow myself to become too close to others." Thus, a conditioning study involving expectations about trust and hurt might produce very different results than in the current research. Indeed, such research would build directly on a previous study (Baldwin et al., 1996, Study 3) in which an avoidant orientation toward new relationships was successfully primed by having people visualize a current or past relationship in which they also felt avoidant. Extrapolating from the current findings, we would hypothesize that highly avoidant—especially fearful—individuals could be strongly conditioned to anticipate trust-hurt contingencies in close relationships.

#### CUED ACTIVATION

The primary goal of this research program is to delineate the mechanisms whereby relational knowledge structures become activated and then influence the processing of novel information. Most of the time, activation probably occurs in response to stimuli directly relevant to the structure: Recent work by a number of researchers (e.g., Andersen, Glassman, Chen, & Cole, 1995; Lewicki, 1985; White & Shapiro, 1987), for example, has shown that a few salient characteristics of a new ac-



quaintance can sometimes activate a representation of a significant other who shares those features, leading one to anticipate a range of additional characteristics from the new person based on generalization from the significant other. Activation might also result from affective and motivational cues: Bowlby (1973) held that core-attachment working models are likely to be activated by stress or anxiety (see Simpson et al., 1992, for relevant evidence). And, as reviewed earlier, numerous studies have shown that subtle exposures to a specific significant other's name or face can activate a network of knowledge associated with that relationship (e.g., Baldwin, 1994; Baldwin et al., 1990; Baldwin & Holmes, 1987).

In the current research we chose to examine activation by cues that, a priori, were irrelevant to the relational knowledge. Some of the more puzzling instances of intense relationship conflict, distorted perceptions, or, for that matter, love at first sight, might occur precisely because certain relational schemas are activated without any clear rhyme or reason. Apparently innocuous stimuli, such as the smell of roasting turkey or the sound of a certain peculiar beep on a computer, might trigger a cascade of cognitive and emotional reactions that then color one's experience and behavior in an ongoing interaction. The cued activation procedure, along with the lexical decision measure, provides a set of research tools for studying how such triggers are established and modified.

While promising in its preliminary evidence for conditioning effects, the study deserves to be replicated and extended to assess its generalizability across stimulus and sample characteristics. For example, although there were no significant effects for gender in the current experiment, there were too few male participants to afford a truly adequate examination of this question. Future research might test whether gender differences in, for example, rejection sensitivity (Downey & Feldman, 1996) might moderate the conditioning of evaluative expectancies. Also, it would be useful in future studies to include no-CS or neutral-CS control conditions to examine the relative impact of activating contingent versus noncontingent models (see Baldwin, 1994, for a discussion of this issue in other activation paradigms). Finally, the inclusion of contexts relevant to dependency, closeness, and trust (Baldwin et al., 1993), in addition to success and failure, would also clarify the relations between attachment orientations and interpersonal expectancies of acceptance and rejection.

We intend to continue exploring the potential of cued relational schemas in other areas, with a focus on issues of stability and change in interaction expectancies. To change a style of relating to another is difficult, since routines of thought and action are mutually sustaining and old, chronically used patterns are most easily activated. The findings of the current study speak to this issue of stability, since the associations

people formed to the neutral cue were largely shaped by their typical attachment orientation. This phenomenon would be expected to produce generalization from one relationship or context to another: That is, if a certain schema is activated in a number of different contexts, it may become associated with a wide range of cues, making it more likely to be activated in a wider range of contexts, and so on. Of course the same principle underlies the possibility for change in typical activation patterns: To the extent that people form associations involving relational schemas that are not usually activated, these structures might gradually increase in their chronic accessibility (see, e.g., Bouton, 1991). In a recent study of social anxiety (Baldwin & Main, 1998), for example, female participants responded very differently during a stressful interaction with a male confederate, depending on which tone was playing on a computer across the room. If the tone was a CS representing noncontingent acceptance, women felt more relaxed and confident, and were perceived as such by the confederate. One might expect, especially given the possibility for self-fulfilling prophecy effects in other people's responses (e.g., Snyder, 1984; Wachtel, 1977), that once a routine is broken new interpersonal patterns could then develop, and new associations might be formed, thereby increasing the likelihood of activating the noncontingent structure in future interactions. Processes of this sort have been hypothesized to factor in the workings of interpersonal and cognitive-behavioral therapies (e.g., Safran & Segal, 1990). Basic research using conditioning paradigms could examine directly such processes of change in relational schema activation.

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