

ADULT ATTACHMENT AND THE INHIBITION OF REJECTION

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Recent research has identified the inhibition of negative interpersonal information as a critical social cognitive mechanism associated with adult attachment orientations. Sixty undergraduate participants were conditioned to associate one computer tone with interpersonal rejection, and another with acceptance. The tones were played again while the participants performed a lexical decision task that assessed the activation of rejection information. To the extent that individuals were low on attachment anxiety, the conditioned tones led to slower reaction times to rejection target words, indicating the inhibition of rejection expectations. The implications of such inhibitory processing are discussed.

Social life is full of small rejections: A friend turns down an invitation for lunch, a romantic partner seems distracted and inattentive to one's needs, a stranger glares disapprovingly when one sneezes on the elevator. The thoughts and feelings people take away from such experiences of rejection might have a lot to do with their general sense of security about themselves and their social relationships. Some individuals might attend to and quickly learn contingencies of when rejection is likely to occur, leading them to be wary about extending lunch invitations or sneezing in public, for example. Others might respond by inhibiting or otherwise counteracting rejection-related thoughts and feelings, allowing them to carry on without being overly worried about future rejections.

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One theoretical perspective that offers some insight into such individual differences is attachment theory. Bowlby (1969, 1973) argued that a core element in personality is the way the individual responds to experiences of interpersonal connection and disconnection. This principle has been explored in various domains, both in the context of close, intimate relationships (e.g., Levy, Blatt, & Shaver, 1998; Mikulincer, 1998; Mikulincer & Arad, 1999) and in more casual social contexts (Pietromonaco & Barrett, 1997; Tidwell, Reis, & Shaver, 1996). While the bulk of this research has been based on self-report (e.g., Hazan & Shaver, 1987) and, occasionally, behavioral measures (e.g., Simpson, Rholes, & Nelligan, 1992), recent work directly examining the cognitive mechanisms underlying attachment orientations has been conducted using social cognitive paradigms. Various microprocesses of attachment cognition have been identified, using reaction time, memory, and priming paradigms (e.g., Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993; Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996; Mikulincer & Orbach, 1995).

Some very recent work (e.g., Fraley, Davis, & Shaver, 1998; Fraley, Garner, & Shaver, 2000; Fraley & Shaver, 2000) suggests that individuals' tendencies to focus on, versus defend against, thoughts and feelings of interpersonal rejection are key aspects of their attachment orientations, as we shall discuss momentarily. We sought to examine the implications of these tendencies for learning about social events and forming social expectancies. In this study, therefore, we examined inhibitory processes in learning about rejection contingencies as a function of attachment orientation. When experiencing social rejection, a person has the option of attending carefully to it and trying to learn the conditions under which it is likely to reoccur, or trying to ignore or otherwise inhibit the implications of that experience. We anticipated that people's working models of attachment, as indexed by attachment style measures, might predict the degree to which they engaged in the latter process, reacting in an inhibitory fashion to thoughts and feelings of rejection.

First, we noted what appears to be a distinct lack of such inhibitory reactions on the part of individuals who give high ratings on the *fearful* and *preoccupied* items from Bartholomew and Horowitz's (1991) four-category attachment approach. Rather than inhibiting thoughts of rejection, these individuals dwell on past instances and anticipate future ones. For example, individuals are considered *fearful* to the extent that they endorse items such as "I worry that I will be hurt if I allow myself to become too close to others." People scoring high on the fearful attachment orientation report rejection expectancies. They are likely to recount having witnessed rejection between their parents and to report rejecting mothers and lonely lives (Brennan & Shaver, 1998; Man & Hamid, 1998). In-

deed, Fearfuls are often labeled "self-defeating" (Shaver, Collins, & Clark, 1996), as they tend to be hypervigilant for threat-related material and do not control their negative emotional reactions particularly well (Mikulincer & Florian, 1998). Similarly apprehensive are individuals endorsing the *preoccupied* attachment orientation, which is indexed by items such as "I often find that others are reluctant to get as close as I would like." People high on preoccupation show a marked tendency to expect and focus on rejection. Preoccupied adults tend to belabor their negative childhood experiences, and several researchers have documented the tendency for preoccupied adults to focus and ruminate on rejection and other distress-related material (Mikulincer & Florian, 1998; Mikulincer & Nachshon, 1991).

Contrasted with these orientations are two that are characterized by much less anxiety about contingencies of rejection. People scoring high on attachment *security* endorse items such as "I am comfortable depending on others and having others depend on me." Very secure individuals tend to possess a generally positive outlook towards interpersonal relationships (Baldwin et al., 1993; Mikulincer, 1997, 1998). They characterize their relationships as particularly happy, friendly, and trusting (Collins & Read, 1990; Hazan & Shaver, 1987; Mikulincer, 1998) and report very little loneliness in their lives (Man & Hamid, 1998). Notably, when confronted with personal failures, secure individuals are more resistant to negative cognitive effects (Mikulincer & Florian, 1998), which might imply an inhibitory response. Also closely associated with inhibition is the *dismissing-avoidant* orientation, indexed by phrases such as "I am comfortable without close emotional relationships." Highly dismissive adults have been shown to act defensively and autonomously, not looking to others for emotional support (Ognibene & Collins, 1998). Dismissing-avoidants tend to insulate themselves from situations that are associated with rejection, ignoring or avoiding potentially threatening stimuli and situations, and Fraley et al. (2000) argue that highly dismissive individuals are characterized by a deactivation of the attachment system, leading to a devaluing of emotional attachments. Dismissive infants, for example, avoid eye contact with caregivers, and dismissive adults turn away from their partners more quickly when saying goodbye at an airport (Fraley & Shaver, 1997). Mikulincer and Orbach (1995) have shown that chronically dismissive adults find it difficult to retrieve negative memories from childhood.

It is currently well established that the four attachment orientations originally identified by Bartholomew and Horowitz (1991) actually represent poles of a two-dimensional space. Although there remains some controversy about how best to conceptualize the dimensions (see, e.g., Fraley & Shaver, 2000), the most common approach is to combine the se-

cure and dismissing attachment orientations together and contrast them with the preoccupied and fearful orientations, defining a dimension usually conceptualized as *anxiety* (e.g., Brennan, Clark, & Shaver, 1998) or sometimes *model of self* (e.g., Griffin & Bartholomew, 1994a). Orthogonal to this is a dimension running from the preoccupied and secure orientations at one end to the dismissing and fearful dimensions at the other, usually conceptualized as *avoidance* (e.g., Brennan et al., 1998) or sometimes *model of other* (e.g., Griffin & Bartholomew, 1994a). According to Fraley and Shaver (2000), the anxiety dimension represents sensitivity to rejection and the avoidance dimension represents comfort with depending on others.

CONDITIONING PROCEDURE

We examined people's particular modes of dealing with rejection thoughts using two previously established experimental tasks. The first task was a conditioning manipulation in which subjects were presented with specific contingencies of rejection and acceptance feedback. Participants completed a bogus computerized questionnaire (e.g., "What is your favorite flavor of ice cream?") allegedly "to see if people's opinions and attitudes line up with those that a survey of university students identified as the *ideal*, or *most likable* answers." They were instructed that, since people often want to know how well they are doing while answering the questions, they would periodically receive feedback about whether their answers were indeed the socially highly desirable ones. Feedback consisted of a row of approving or disapproving faces, displayed on the computer screen; this feedback was given every few questions in a fixed random order unrelated to their actual answers. The conditioning procedure involved the computer emitting distinctive tone sequences immediately before the faces were displayed. One tone sequence (the *CS-acceptance*) was always paired with approval feedback; the other sequence (the *CS-rejection*) was paired with disapproval feedback.

Previous research with this procedure (Baldwin & Main, 2001) has shown that people typically learn the contingencies of the social feedback, such that later presentation of the different tones induces different expectancies of rejection, depending on which outcome was conditioned to that tone. We wished to examine the influence of attachment working models on people's learning in this task.

LEXICAL DECISION TASK

Our dependent measure assessed spreading activation, based on the notion that cognitive representations are organized in networks of associ-

ated nodes (e.g., Smith, 1998). These nodes are connected via links: the stronger the link between two nodes, the stronger the connection between the two concepts. Priming research—in which one concept is primed to investigate its effect on a hypothesized related concept (Srull & Wyer, 1979)—has elucidated many of these types of associations. For example, in an investigation of racial stereotypes, Gaertner and McGlaughlin (1983) showed the concepts of *white* and *ambitious* to be strongly associated. In this case, the link between white and ambitious leads the activation of one concept to increase the likelihood that the other concept will be activated—a link labeled *excitatory*. Alternatively, an *inhibitory* link exists when activation of one concept instead decreases the activation of a connected node; a process that, although much less researched, also appears to apply to the representation of social knowledge (e.g., MacRae, Bodenhausen, & Milne, 1995; Sinclair & Kunda, 1999).

We measured people's processing of rejection information using a lexical decision task, originally devised to assess the cognitive relatedness of two concepts (Meyer & Schvaneveldt, 1971). In its standard form, two letter strings are successively presented on a computer screen. The participants are asked to identify, as quickly as possible, whether the second string is a word or nonword. In theory, target words that are closely related to the prime words preceding them should be identified faster. Indeed, people are quicker to identify the target word "nurse" if it is preceded by a related prime word such as "doctor," as opposed to an unrelated word such as "apple." Using this paradigm to study the cognitive associations underlying self-esteem, Baldwin and Sinclair (1996) showed that people low in self-esteem were quicker to identify target words related to *rejection* after being primed with words relating to *failure*. In a study of attachment orientations, Baldwin et al. (1993) showed that avoidantly attached individuals were quicker to identify the target word *hurt* after being primed with a phrase involving trusting a romantic partner—indicating an automatic associative link between *trust* and *hurt*. This latter finding, which has been extended in other work (e.g., Mikulincer, 1998), supports the notion that specific patterns of links among attachment-relevant representations, and specific patterns of information processing that arise from them, are central aspects of attachment working models.

Instead of a prime word on each trial, participants in the current study heard one of the computer-generated tones from the conditioning task. Some of the target words were related to rejection outcomes. Thus, some trials presented the CS-rejection tone (i.e., the conditioned stimulus that had been conditioned to rejection feedback), or the CS-acceptance tone, followed by a rejection target word. An excitatory link would be shown if, for example, people were faster to recognize rejection targets after

hearing the CS-rejection tone. We were primarily interested in whether some people would instead show inhibitory associations, whereby words related to rejection would actually be recognized more slowly, following certain tones. The literature reviewed earlier led us to make two predictions. First, we anticipated that a low level of attachment anxiety would be associated with an inhibitory reaction to rejection targets. Second, given that dismissing avoidance is theorized to involve the deactivation of the attachment system, we expected that attachment avoidance would also be implicated in inhibitory responses.

ATTACHMENT WORKING MODELS AND LEARNING ABOUT REJECTION CONTINGENCIES

In a study related to the current work, Baldwin and Meunier (1999) conditioned an innocuous tone to thoughts of an evaluative significant other by having participants visualize their significant other while the tone sounded repeatedly. Participants later performed a lexical decision task while this tone again played in the background. Results showed that a conditioned stimulus can temporarily trigger the kinds of thoughts normally associated with specific significant others—in this case, the tone activated the kind of failure-rejection contingency that is associated with self-criticism and low self-esteem (Baldwin & Sinclair, 1996). However, the cuing of rejection expectancies was apparent only for those high on the preoccupied attachment orientation: Chronically secure individuals instead showed the activation of positive evaluative expectancies. This finding might have reflected an inhibitory response on the part of secure individuals, but an element of the procedure undermined a clear interpretation of the findings in terms of inhibitory processes. In short, the participants were allowed to choose the significant other whom they would visualize; thus, it is quite possible that preoccupied individuals visualized an evaluative other who tended to be rejecting, while secure individuals visualized an evaluative other who tended to be praising and accepting. To rule this possibility out in the current study, we used a conditioning task that provided direct and fixed feedback, rather than allowing participants to select their own stimuli.

METHOD

PARTICIPANTS

The participants were 68 students recruited from various McGill University classes. As compensation, each participant received ten dollars for their participation. Data from eight participants were discarded ei-

ther for exceeding the maximum of 11 error trials or for suspicion toward the conditioning task. The final sample consisted of 60 (26 male and 34 female) participants.

PROCEDURE

The experimental session lasted approximately 45 minutes and consisted of three 15-minute sections. After reading and signing a consent form, the participants completed a battery of questionnaires that included the Bartholomew and Horowitz (1991) Relationship Questionnaire.¹ Using four seven-point scales, it assessed the degree to which the participants conformed to each of four attachment styles: secure, dismissing, preoccupied, and fearful.

Immediately following this, the conditioning phase began. For this stage, the participants moved to the computer and completed the bogus attitude questionnaire (Baldwin & Main, 2001). This computerized questionnaire presented the participants with 60 preference-based questions (e.g., "what is your favorite type of ice cream?"). Before beginning, each participant was told that the same 60 questions had been given to an earlier group of students who were told to indicate which answers they would like someone else to give, and that our goal was to assess the extent to which the current participant's responses coincided with the socially desirable responses that we had collected earlier. Also, each participant was told that throughout the task they would be given feedback after every third trial. This included a 1 s presentation of four faces (two male, two female), smiling approvingly, to indicate they were matching the socially desirable responses, or a different group of four faces, frowning disapprovingly, to indicate they were not. In fact, though, the feedback was given in a predetermined random order so that, regardless of their responses, each participant received ten rows of smiling faces and ten rows of frowning faces. As the conditioning procedure, 1.5 s in advance of each instance of feedback, one of two tone sequences was presented (i.e., either a high-pitched doorbell sequence or a low-pitched increasing sequence). For any given participant, one sequence was always paired with the smiling faces and the other sequence was always paired with the frowning faces. Thus, each participant received 20 sets of feedback: ten smiling faces preceded by one tone (the CS-acceptance tone) and ten frowning faces preceded by the other tone (the CS-rejec-

1. For half of the participants, the questionnaires were filled out at the end of the experimental session instead. This was done to ensure the lexical decision was not being influenced by the questionnaires. There were no significant differences between the groups.

tion tone). Also, the tone sequences were counterbalanced across participants; thus, the tone sequence that acted as the CS-acceptance tone for half of the participants acted as the other half's CS-rejection tone.

After the computerized questionnaire, the same computer was reprogrammed for the lexical-decision task. For this phase, a modified version of the task used by Baldwin and Sinclair (1996) was employed. Using the materials from that study, 96 target words represented five categories. This consisted of the critical 12 rejection words (e.g., abandoned, ridiculed), along with 12 acceptance words (e.g., cherished, respected), 12 positively valenced noninterpersonal words (e.g., tranquil, imagination), and 12 negatively valenced noninterpersonal words (e.g., decay, slavery) to serve as various statistical controls. In addition, 48 nonwords, which were created by changing one letter of a common word (e.g., "listened" became "lisrened") were also included (see Baldwin & Sinclair, 1996, for additional details of the procedure). At the beginning of each trial, one of the two conditioned tones, or else a novel, neutral tone, was presented. The tone, which was described as a "ready signal," was played and then followed by one of the target strings (with a 300 ms interval between the two stimuli). The participants were given 2 s on each trial to press one of two keys, as quickly as possible, to indicate whether the target string was a word or nonword. The context tone/target word pairings were presented in a quasi-random order, with the restriction that each type of target word was preceded by an equal distribution of the three tone types. So, of the 12 critical rejection targets four were preceded by the CS-acceptance tone, four were preceded by the CS-rejection tone, and four were preceded by the novel CS-neutral tone.

RESULTS

CONSTRUCTION OF THE ATTACHMENT DIMENSIONS

Following the procedure outlined by Griffin and Bartholomew (1994b), attachment dimension scores were constructed for each participant based on their ratings of the Bartholomew and Horowitz (1991) prototypes. The anxiety score was determined by summing the participant's preoccupied and fearful ratings and subtracting the dismissing and secure ratings. The avoidance score was determined by summing the dismissing and fearful ratings and subtracting the secure and preoccupied ratings. The correlation between the anxiety and avoidance scores was small and nonsignificant, $r = -.11$, indicating that they assessed independent constructs (as would be expected on the basis of the Brennan et al., 1998, factor analysis).

PRELIMINARY ANALYSES

In the lexical-decision data, 5.9% of the trials were discarded due to either incorrect responses or exceeding the 2 s time limit. Mean reaction times (RTs) were then calculated for each of the context/target pairings by averaging across the relevant trials. Descriptive statistics are presented in Table 1.

The first analysis compared RTs to the rejection targets, solely as a function of which tone preceded them, to see whether people overall would tend to recognize rejection targets more quickly following the CS-rejection than following the CS-acceptance or neutral tones. There were no effects in this analysis, $F < 1$.

The next analysis examined baseline reactions to rejection targets as a function of the two attachment dimensions. A multiple regression was performed using the mean rejection RT in the neutral-tone condition as the dependent variable, with the anxiety and avoidance attachment dimensions (in Step 1) and their interaction (in Step 2) as predictors. All predictors were centered prior to analysis. Although the overall regression was not significant ($F = 1.16$, *ns*), there was a marginally significant effect of attachment anxiety, indicating that more anxious individuals were quicker to identify rejection target words after a neutral cue, $t(56) = -1.75$, $p = .08$. This effect was not significant when partialling out RTs to acceptance words to control for individual differences in overall response time, however, $t(55) = -1.05$, *ns* (similarly, there were no significant effects of attachment orientations in any analyses of RTs to acceptance targets, $ts < 1.60$, *ns*). Nevertheless, to ensure that results for CS-Acceptance and CS-Rejection trials did not simply reflect differences in baseline response times, analyses of these cued trials were performed controlling for neutral-cue rejection RTs.²

ANALYSES OF CS TRIALS

The major analyses consisted of two multiple regressions, with residualized RTs to rejection targets as the criterion variables and attachment dimensions as predictors. One analysis focused on RTs on trials

2. A more conservative test of the effect of the CS cues would be to conduct analyses in which, for example, RTs for the CS-Rejection trials were compared directly to RTs for neutral-cue trials (rather than controlling for the neutral trials in regression analyses). Doing so yielded results that were generally consistent with the findings we report, albeit weaker (with *ps* ranging from .04 to .20). We interpret this difference as a result of the slight, although only marginally significant, tendency toward an inhibitory reaction even in the neutral-prime trials.

TABLE 1. Means and Standard Deviations of Rejection RTs in Milliseconds as a Function of Self-reported Attachment Orientation

Prime type	Secure	Dismissing	Preoccupied	Fearful
Neutral	751.29	776.68	719.44	735.71
SD	136.93	138.09	139.03	165.26
CS-Acceptance	808.74	803.29	722.22	661.26
SD	190.45	140.46	90.64	139.76
CS-Rejection	755.94	850.39	733.64	693.31
SD	163.39	191.12	156.77	151.68

with the CS-Acceptance prime (Table 2); the second focused on trials with the CS-Rejection prime (Table 3).

CS-Acceptance Trials For CS-Acceptance trials, only the main effect for attachment anxiety was significant (see Table 2 and Figure 1). As seen in Figure 1, low levels of anxiety were associated with longer reaction times to rejection targets. This result supports the hypothesis that nonanxious individuals are able to inhibit the activation of rejection, making them slower in their recognition of rejection words. There was no effect of avoidance, or of the interaction between avoidance and anxiety, on CS-Acceptance trials. The inhibition of rejection information after a cue signaling positive feedback, therefore, is a phenomenon primarily associated with low levels of attachment anxiety.

CS-Rejection Trials For CS-Rejection trials, there was again an effect for attachment anxiety such that low levels of anxiety were associated with longer reaction times to rejection targets, following a cue that had been paired with rejection feedback (see Table 3 and Figure 1). There was no effect of attachment avoidance on these trials. There was a marginally significant interaction between avoidance and anxiety, however (see Table 3). Following the procedures outlined by Aiken and West (1991), we plotted the effect of anxiety separately for individuals scoring high in avoidance (i.e., one standard deviation above the mean) and low in avoidance (i.e., one standard deviation below the mean). As displayed in Figure 2, the inhibitory response exhibited by low anxious individuals was particularly pronounced, and was only significant, for those also scoring high in avoidance, $B = -.55, t(56) = -3.27, p = .002$; low avoidance $B = -.18, t = -.83, ns$.

TABLE 2. Multiple regression of rejection reaction times following the CS-Acceptance

	B	Std. Error	Beta	t	Sig.	F-Change	R ² -Change	Sig.
Step 1						2.99	.071	.058
Anxiety	-12.03	5.75	-.235	-2.09	.041			
Avoidance	-6.83	4.59	-.163	-1.49	.143			
Step 2						.26	.003	.609
Anxiety × Avoidance	-.82	1.59	-.061	-.51	.609			

Note. Analysis is controlling for RTs to rejection targets after the neutral prime.

DISCUSSION

When people are exposed to contingencies of social rejection, they might learn these contingencies or they might ignore or inhibit them. As predicted on the basis of recent work on the inhibition of interpersonal information, individuals' responses to rejection-related stimuli varied as a function of their attachment orientations.

In particular, low levels of attachment anxiety predicted slower lexical decision reaction times to signaled rejection target words. Whether on trials signaled by a tone that originally was paired with acceptance, or one that was paired with rejection, nonanxious people were slower to identify rejection words, even controlling for RTs on neutral-cue trials. These findings reveal one mechanism whereby nonanxious individuals may maintain their sense of equanimity. Rather than creating associations to represent the probability of rejection, as their anxious counterparts do, nonanxious individuals process information so as to inhibit expectations of rejection.

The findings for the anxiety dimension fit well with other research in the area. Anxiety is theorized to reflect the extent to which the attachment system becomes activated by stressors, and highly anxious individuals are especially vigilant for threats of rejection. Anxiety about attachment represents an appraisal that attachment figures are not reliably available or responsive and, as reviewed earlier, anxious individuals tend to expect and focus on rejection. Conversely, both the secure and dismissing-avoidant patterns, which make up the nonanxious end of the dimension, are related to having a relatively high threshold for detecting evidence of rejection.

We did not find that inhibitory reactions varied directly as a function of attachment avoidance, as some previous research has suggested. To some extent this may reflect the fact that earlier research and theorizing often did not adequately discriminate between the dismissing and fear-

TABLE 3. Multiple regression of rejection reaction times following the CS-Rejection

	B	Std. Error	Beta	t	Sig.	F-Change	R ² -Change	Sig.
Step 1						4.33	.094	.018
Anxiety	-16.27	5.56	-.317	-2.93	.005			
Avoidance	-.09	4.44	-.002	-.02	.984			
Step 2						2.91	.031	.094
Anxiety × Avoidance	-2.56	1.50	-.190	-1.71	.094			

Note. Analysis is controlling for RTs to rejection targets after the neutral prime.

ful forms of avoidance. Specifically, while both forms of avoidance are associated with what has been termed behavioral avoidance (e.g., Cassidy & Kobak, 1988)—steering clear of intimacy and other contexts that might threaten the attachment system—it is primarily (although not exclusively; see, e.g., Fraley & Shaver, 2000) the dismissing pattern that has been associated with cognitive avoidance—that is, the successful deactivation of the attachment system through the kinds of inhibitory processes studied here. Fraley & Shaver (1997), for example, found that it was dismissing-avoidance in particular that was associated with successfully avoiding or suppressing attachment-related thoughts; they also suggested that although fearfully avoidant adults may wish to inhibit attachment-related distress, they may lack the regulatory mechanisms to do so successfully.

We found support for this distinction among avoidant orientations in evidence that the anxiety and avoidance dimensions interacted to predict inhibitory responses to negative signals. As shown in Figure 2, it was the presence of both low anxiety and high avoidance—that is, the combination associated with the dismissing orientation—that was principally associated with the inhibition of rejection expectations when signaled by the CS-Rejection. This indicates that when signaled that rejection was likely to occur, these individuals actively inhibited the processing of such outcomes. This finding fits well with previous research showing that dismissing avoidance is related to the downplaying of negative interpersonal experiences and memories. It also extends that research by indicating that dismissing individuals do not simply ignore rejection-related information: If this was the case, reaction times to rejection words in the CS-rejection condition should have been similar to those in the baseline condition. Rather, the elevated times for these individuals indicate a truly inhibitory response.

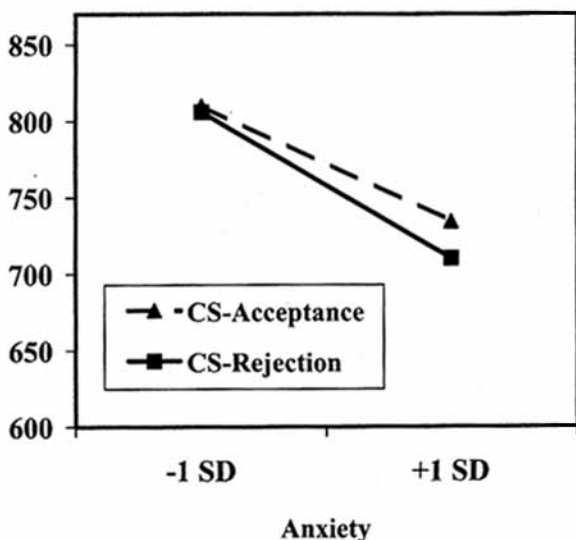


FIGURE 1. Predicted reaction times (in ms) to rejection targets as a function of attachment anxiety (+/- one SD) and CS-Rejection and CS-Acceptance primes.

While it is important to be cautious in interpreting this marginally significant finding until it can be replicated, we are struck by the possibility that inhibition may have represented different types of response depending on whether it came after the CS-Acceptance or CS-Rejection. That is, a low level of attachment anxiety can represent either a secure or a dismissing orientation, and the underlying reason for low anxiety is theorized to be different for the two orientations. We speculate that attachment security might lead people to inhibit rejection expectations because individuals high on this dimension take a generally positive outlook on relationships, attending to evidence indicating that people can be trusted and developing a model of the social world in which rejection is an unlikely occurrence. Dismissing avoidance, on the other hand, might lead to the inhibition of rejection expectations principally due to a tendency to downplay negative relationship experiences by in some way deactivating the attachment system. That is, we propose that whereas secure people may be nonanxious primarily because they have learned to *trust*, dismissing people may be nonanxious primarily because they have learned to *defend*.

Additional research is required to examine the direct and interactive influences of anxiety and avoidance on inhibitory processing. One limitation of the current work involves our measurement of these attach-

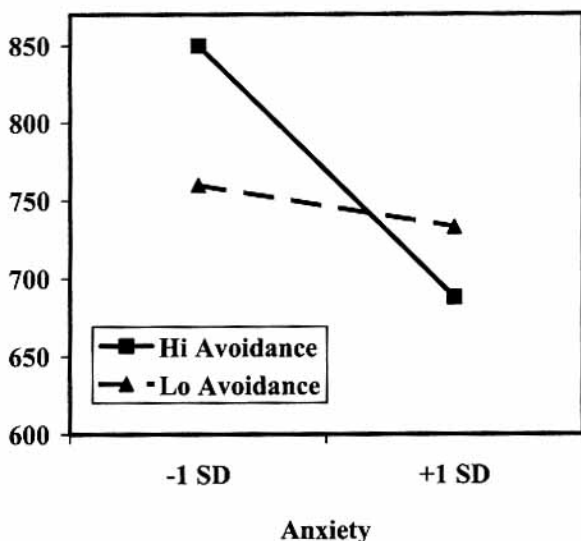


FIGURE 2. Predicted reaction times (in ms) to rejection targets on CS-Rejection trials as a function of attachment anxiety (+/- one SD) and avoidance (+/- one SD).

ment dimensions. The measure we used (Bartholomew & Horowitz, 1991) has in the recent literature been supplanted by more elaborate and psychometrically sound multi-item measures of attachment styles (e.g., Brennan et al., 1998; Griffin & Bartholomew, 1994a). Moreover, other researchers (e.g., Pierce & Lydon, 2001) are examining the impact of relationship-specific attachment patterns as well as global orientations. Although the simple measure we used produced reliable evidence of inhibition, we anticipate that future research with more sophisticated assessment tools might yield even more informative findings.

CLINICAL IMPLICATIONS

People's models of their interpersonal world, and the cognitive, emotional, and motivational responses that arise from these models, can lead to a host of problems including relationship conflict (Bookwala & Zdaniuk, 1998), dissatisfaction (Pistole, 1989; Keelan, Dion, & Dion, 1994) and breakdown (Levitt, Silver, & Franco, 1996). In influential reviews of cognitive therapies, Brewin (1989, 1996) proposed that psychotherapy could benefit tremendously from a clearer understanding of the cognitive processes underlying several clinical manifestations. He repeatedly emphasized the role that automatic processing mechanisms

such as learned schemas and memories can have in maladaptive behavior patterns. Moreover, he called for an understanding of the situational cues that lead to the activation of these schemas, saying that a key role of the therapist is to understand and infer the *links* between situations and the behaviors, perceptions, or feelings they elicit.

Recent formulations of adult attachment theory (e.g., Mikulincer & Shaver, in press) include detailed discussions of specific types of associative networks that might underlie different attachment orientations and make attachment working models relatively self-maintaining. For example, excitatory circuits that link negative attachment memories and expectancies together, and link them to environmental stimuli, would tend to maintain threatening information at a high level of accessibility. This heightened accessibility should produce attentional biases toward negative stimuli in the environment, and once a negative appraisal is activated the strong associative links would facilitate spreading activation to other distressing memories and expectations. Conversely, inhibitory circuits can be established through deactivating strategies or by learning safety signals that indicate that negative events are unlikely to occur. Such learning lowers the accessibility of threat-related cognitions, and limits the spread of activation among negative representations.

Some research focusing on insecure attachment and also low self-esteem has identified some of the specific cognitive links that characterize these distressing orientations. For example, lexical decision studies by Baldwin and Sinclair (1996) showed that individuals with low self-esteem tend to have chronically accessible relational schemas representing the sense that rejection and acceptance are highly conditional on failures and successes respectively—thus, for these individuals their sense of self-worth and social acceptability are always on the line. In the case of a negative activation pattern such as this it seems that learning to inhibit or override it should have a positive impact, and, consistent with this idea, both the secure and dismissing-avoidant orientations are associated with high self-esteem. In the case of attachment security, it seems reasonable that a relationship history of relatively unconditional acceptance might underlie a sense that rejection will not occur even in response to a personal failing (Baldwin & Sinclair, 1996). In addition to this, the current inhibition findings may help to explain how dismissing avoidants also manage to maintain a high level of self-esteem (Brennan & Bosson, 1998), even given their personal history of being rejected by their significant others (e.g., Hazan & Shaver, 1987). Dismissing avoidants, by inhibiting the learning of rejection contingencies, might be able to protect themselves from precisely the kinds of cognitive structures that undermine feelings of self-worth.

Of course, a clinician might be reluctant to encourage clients to engage in massive suppression of negative social information. For example,

while defensive inhibition may allow a person to exert some control over his or her emotional reactions and social expectations, it may not always be fully effective and may be accompanied by specific physiological indicators of conflict such as heightened skin conductance (Dozier & Kobak, 1992). Fortunately, our findings for the CS-Acceptance suggest that a positive outlook might also be maintained in other ways. By learning cues that signal an absence of rejection, individuals may be able to inhibit the activation of rejection expectancies. Speculating for a moment, this suggests that people with feelings of insecurity about self and relationships might be encouraged to respond to rejection feedback by recruiting thoughts and memories of people who do tend to accept them reliably and unconditionally. Recent work (e.g., Baldwin et al., 1996; Mikulincer & Arad, 1999) has shown that bringing to mind such positive schemas can indeed have a salutary effect on self-esteem and attachment processes. In one study by Baldwin and Main (2001), for example, when socially-anxious participants engaged in a stressful conversation with a confederate, they felt significantly less anxious if a CS-acceptance tone was playing in the background. It might be possible, therefore, for a person with attachment orientations that are proving problematic to learn new cognitive responses to replace the maladaptive ones. Granted, the real world of social interaction is far more complex than that of computer tasks in a fairly restricted laboratory setting. Future research is therefore needed to examine whether situational or internally generated cues, rather than tones, could facilitate generalization and persistence of positive responses outside the lab or therapeutic context.

Finally, as research continues to mount delineating the cognitive and affective processes underlying attachment orientations, we are optimistic about the possibility of applying these findings to the challenge of modifying cognitive patterns that produce and maintain attachment insecurity. Previous work (e.g., Baldwin & Main, 2001) has shown that small changes in cognitive activation, brought on by conditioning procedures, can produce measurable differences in people's interpersonal behavior. Further work is needed to test whether these procedures can influence behavior in contexts involving close or romantic relationships; the current research suggests that this might be possible.

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