

The Pushes and Pulls of Close Relationships:
Attachment Insecurities and Relational Ambivalence

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Abstract

Attachment theorists have emphasized that attachment-anxious individuals are ambivalent in their relational tendencies, wishing to be close to their relationship partners but also fearing rejection. Here we report six studies examining the contribution of attachment anxiety and experimentally induced relational contexts (both positive and negative) on explicit and implicit manifestations of (a) attitudinal ambivalence toward a romantic partner and (b) motivational ambivalence with respect to the goals of relational closeness and distance. Attachment-anxious individuals exhibited strong attitudinal ambivalence toward a romantic partner, assessed by both explicit and implicit measures. They also exhibited strong motivational ambivalence regarding closeness (both explicit and implicit), and this motivational conflict was intensified in relational contexts that encouraged either approach or avoidance tendencies. Participants who scored relatively high on avoidant attachment proved to be implicitly ambivalent about distance issues, but mainly in negative relational contexts. Several alternative interpretations of the results were considered and ruled out.

One of the core premises of adult attachment theory (Bowlby, 1973; Mikulincer & Shaver, 2007) is that attachment insecurities, conceptualized in terms of anxiety and avoidance, are important for understanding the desires and concerns that organize people's interpersonal decisions and actions. In the six studies reported here, we focused especially on the dimension of attachment anxiety and tested the theoretical proposition that this form of insecurity involves considerable ambivalence between approach and avoidance tendencies when one is regulating closeness and also involves ambivalent attitudes (positive and negative) toward relationship partners (Mikulincer & Shaver, 2003, 2007; Shaver & Hazan, 1993). Although Ainsworth, Blehar, Waters, and Wall (1978) viewed ambivalence as a feature of anxious attachment in infancy, researchers who study attachment dynamics in adolescents and adults have not studied this issue in any detail. There is, however, some evidence that attachment anxiety is sometimes associated with positive views of others and at other times with negative views. There is also evidence that attachment anxiety is associated with strong desires for closeness, but also with intense and pervasive fears of rejection and abandonment (see Mikulincer & Shaver, 2007, for a review). There is, however, no direct evidence that these conflicting cognitions, wishes, and fears are activated simultaneously in the minds of attachment-anxious adults. Acquiring such evidence was the main purpose of the studies reported here.

Attachment Theory and Adult Attachment Insecurities

One of the basic assumptions of Bowlby's (1973, 1980, 1982) attachment theory is that interactions with significant others (*attachment figures*) are represented in internal working models of self and others. These models include expectations, strategies, and procedures that affect a person's goals, thoughts, feelings, and behaviors in interpersonal situations throughout life (e.g., Fraley & Shaver, 2000; Shaver & Mikulincer, 2002). To summarize the theory briefly, humans, and especially infants, rely on "stronger and wiser" attachment figures for protection and assistance with affect regulation. They are therefore motivated to seek proximity and comfort from such figures in times of need. Repeated interactions with available and responsive attachment figures create both a persisting sense of attachment security and positive working

models of self (as being loved) and others (as being reliable, helpful, and loving). When relationship partners are frequently rejecting, unresponsive, or unavailable in times of need, however, attachment security is undermined and serious doubts about others' availability and support and about one's own value and lovability arise (e.g., Main, 1990).

Hundreds of studies have examined hypotheses derived from attachment theory. Most have included assessments of people's *attachment orientations or styles* – the systematic patterns of relational expectations, emotions, and behaviors that result from a particular attachment history (Fraley & Shaver, 2000). Research, beginning with Ainsworth et al. (1978) and continuing through studies on adult attachment (e.g., Brennan, Clark, & Shaver, 1998; Collins & Read, 1990; Feeney & Noller, 1990; Simpson, 1990), indicates that individual differences in attachment can be measured along two roughly orthogonal dimensions: attachment-related *anxiety* and *avoidance*. A person's position on the anxiety dimension indicates the degree to which he or she worries that a partner will not be available and responsive in times of need. A person's position on the avoidance dimension indicates the extent to which he or she distrusts relationship partners' good will and strives to maintain behavioral independence and emotional distance from partners. The two dimensions can be measured with reliable and valid scales (e.g., Brennan et al., 1998) and are associated in theoretically predictable ways with relationship quality and affect regulation (see Mikulincer & Shaver, 2003, 2007, for reviews).

Mikulincer and Shaver (2003, 2007) proposed that a person's location in the two-dimensional conceptual space defined by attachment anxiety and avoidance reflects both the person's sense of attachment security and the ways in which he or she deals with threats and distress. People who score low on these dimensions are generally secure and tend to employ constructive and effective affect-regulation strategies. Those who score high on either the attachment anxiety or the avoidant attachment dimension (or both) suffer from attachment insecurities and tend to rely on what Cassidy and Kobak (1988) called *secondary attachment strategies* – deactivating or hyperactivating their attachment system in an effort to cope with threats.

According to Mikulincer and Shaver (2003, 2007), people scoring high on avoidant attachment tend to rely on deactivating strategies – trying not to seek proximity, denying attachment needs, and avoiding closeness and interdependence in relationships. These strategies develop in relationships with attachment figures who disapprove of and punish closeness and expressions of need or vulnerability (Ainsworth et al., 1978). People scoring high on attachment anxiety tend to rely on hyperactivating strategies – energetic attempts to achieve proximity, support, and love combined with lack of confidence that these resources will be provided and anger when they are not (Cassidy & Kobak, 1988). These reactions occur in relationships in which an attachment figure is sometimes responsive but unreliably so, placing the needy person on a partial reinforcement schedule that rewards persistence in proximity-seeking attempts, because they sometimes succeed.

Attachment Orientations, Interpersonal Goals, and Person Perception

According to attachment theory, attachment-related mental representations have motivational aspects, which trigger the pursuit of closeness, support, and comfort from others and avoiding interpersonal rejection and distance (Mikulincer & Shaver, 2007). Indeed, Gillath et al. (2006) found that subconscious activation of attachment-related mental representations (by subliminally priming a person with a particular attachment figure's name) increased the pursuit of closeness-related goals (e.g., enhancing self-disclosure and intimacy and avoiding destructive interpersonal conflicts). Attachment theory also proposes that each of the two major secondary attachment strategies (hyperactivation and deactivation) involves particular wishes and fears concerning security, closeness, dependency, and autonomy (e.g., Cassidy & Kobak, 1988; Mikulincer & Shaver, 2007). Attachment-anxious people tend to select interpersonal goals compatible with their intense need for closeness and to strongly fear rejection and separation. In contrast, avoidant people tend to organize their interactions around desires for distance and self-reliance and to perceive interdependence and intimacy as threatening or aversive states.

Studies testing these ideas indicate that attachment insecurities bias the kinds of goals people pursue in close relationships. For example, Feeney (1999a) and Collins, Guichard, Ford,

and Feeney (2004) found that attachment anxiety was associated with overemphasizing the importance of a romantic partner's love and support, and avoidant attachment was associated with downplaying such closeness-related goals. There is extensive evidence that avoidant attachment is associated with intimacy aversion (e.g., Doi & Thelen, 1993), distancing relationship partners from the "core self" (Rowe & Carnelley, 2005), and expressing discomfort when another person moves into one's personal space (e.g., Kaitz, Bar-Haim, Lehrer, & Grossman, 2004). In addition, attachment anxiety is associated with rejection sensitivity (as measured, e.g., by Downey & Feldman, 1996), quick recognition of rejection-related words in a lexical decision task (e.g., Baldwin & Kay, 2003), and difficulty inhibiting rejection-related thoughts (e.g., Baldwin & Meunier, 1999).

According to attachment theory, people with different attachment patterns also differ in the way they perceive other people (Bowlby, 1973). Whereas security-enhancing interactions with available and responsive attachment figures promote a positive view of others, frustrating, emotionally painful interactions with unavailable or rejecting attachment figures weaken a person's sense of security and contribute to negative views of others (Shaver & Hazan, 1993). These negative views seem to be especially associated with avoidant attachment. Avoidance has been shown to correlate with negative views of human nature (e.g., Collins & Read, 1990), negative descriptions of relationship partners (e.g., Feeney & Noller, 1991), negative expectations about partners' behavior (e.g., Baldwin, Fehr, Keedian, Seidel, & Thompson, 1993), and negative attributions concerning partners' undesirable behavior (e.g., Collins, 1996).

Based on a review of studies examining associations between attachment anxiety and person perception, Mikulincer and Shaver (2007) concluded that anxious attachment is associated with complex views of others. Although people scoring high on attachment anxiety have a history of frustrating interactions with attachment figures, they nevertheless believe that if they intensify their proximity-seeking efforts, they may compel relationship partners to pay attention and provide adequate support (Cassidy & Berlin, 1994). As a result, they do not form a simple negative view of others, because such a view would imply that proximity seeking is

hopeless. Rather, even if they are angry, they take some of the blame for a partner's unreliable attention and care (Mikulincer & Shaver, 2003). These mental gyrations can lead to conflicting appraisals of others' great potential value and insufficient care.

Attachment Anxiety and Relational Ambivalence

Research suggests that attachment anxiety is associated with what we here call *relational ambivalence*, which is marked by conflicting relational goals and action tendencies and by ambivalent attitudes toward relationship partners. Attachment-anxious people are strongly influenced by their desires for security and closeness, which cause them to focus on the potential rewards of intimacy (e.g., Hazan & Shaver, 1987) and to hold positive attitudes toward relationships and relationship partners. They are also affected, however, by fears of rejection and abandonment and by memories of frustrating attachment relationships, which lead them to overemphasize the risks of intimate interactions (e.g., Boon & Griffin, 1996) and the potentially negative traits and intentions of their partner (e.g., Mikulincer & Horesh, 1999). To date, however, only a single cross-sectional, correlational study has provided direct evidence that people (in this case, adolescents) who score high on attachment anxiety are ambivalent (e.g., more likely to hold both positive and negative attitudes toward parents; Maio, Fincham, & Lycett, 2000). In addition, Davis, Shaver, and Vernon (2004) found that adults scoring high on attachment anxiety wanted both more sex *and* less sex under certain conditions – more when they thought about sex as a barometer of their partner's love and commitment, less when they thought about the unpleasantness of acceding to a partner's sexual demands in order to avoid disapproval or rejection. However, these findings from the Davis et al. (2004) study were preliminary and indirect, not based on previously validated measures of ambivalence.

Further indirect evidence for the hypothesized link between attachment anxiety and relational ambivalence was provided by Bartz and Lydon (2006), who assessed patterns of interaction with an attractive, opposite-sex confederate in a laboratory setting. In that study, attachment anxiety was associated with a stronger desire to initiate communal interactions with the new partner, but when the confederate explicitly expressed interest in the participant, more

anxious participants felt nervous and performed worse on a cognitive task. (Less anxious people accepted the confederate's comments with fewer worries and performed better on the task.)

These findings may be interpreted in terms of relational ambivalence. Although attachment-anxious individuals are interested in developing relationships with attractive people, when such people show signs of interest, it may arouse fears of being rejected or disliked. (See also Mikulincer & Sheffi, 2000, discussed later in this article.)

The Present Research

The purpose of the present studies was to examine the association between attachment anxiety and relational ambivalence more directly and in greater detail. So far, no study has determined whether antagonistic motivational forces and attitudes coexist in an attachment-anxious person's mind. Our goal was to measure the simultaneous activation of antagonistic motivational forces (approach and avoidance) and attitudes (positive and negative) when study participants thought about close relationships. We wished to measure both implicit and explicit ambivalence, because previous studies of attachment-related dynamics have suggested that people are often not fully aware of their own mental associations and motivational tendencies (Mikulincer & Shaver, 2007). Explicit indications of relational ambivalence might reflect attachment-anxious people's tendency to present themselves as needy and vulnerable (Mikulincer & Shaver, 2003). This would not necessarily indicate conflicting motives at a deeper, unconscious level (Bargh, 1990).

In Studies 1-3 we included both explicit and implicit measures of (a) motivational ambivalence (approach-avoidance conflict) toward the relational goals of closeness and distance and (b) attitudinal ambivalence toward a romantic partner. We hypothesized that attachment anxiety would be associated with both motivational and attitudinal indications of relational ambivalence, and that these links would appear at both explicit and implicit levels. We also examined whether the link between attachment anxiety and ambivalence could be explained by other constructs, such as global ambivalence toward non-relational issues; relationship quality; or personality constructs that have been associated with attachment insecurities or relational

ambivalence, such as need for cognition, fear of invalidity, neuroticism, extraversion, and self-esteem. We expected the association between attachment anxiety and relational ambivalence to be attributable primarily to simultaneous activation of antagonistic goals and attitudes aroused by specific relational contexts, not primarily to alternative psychological constructs.

In Study 4, we examined the possibility that attachment-anxious people's relational ambivalence would be intensified by relational contexts that activated just one kind of relational tendency (either approach or avoidance). If attachment anxiety is associated with simultaneous activation of antagonistic relational goals and attitudes toward a relationship partner, these goals and attitudes should be connected such that activation of one goal or attitude paradoxically causes activation of antagonistic goals and attitudes. As a result, attachment-anxious people should react to a partner's expression of interest and love or to the initiation of a loving and promising close relationship not only with approach tendencies and a positive view of the loving partner but also with fears of rejection and abandonment and doubts about the partner's intentions. Viewed from the other side of the expected association, they should react to a partner's signals of disinterest and rejection or to signs of relationship dissolution not only with avoidance tendencies and negative attitudes toward the partner but also with desperate wishes for affection and security and hopes that the partner would be responsive. In short, indications of relationship initiation or dissolution should intensify attachment-anxious people's relational ambivalence. For them, relational experiences of either kind should arouse uncertainties about a partner's intentions and result in ambivalent goals (approach and avoidance) and ambivalent views of the partner (positive and negative).

In Studies 5 and 6, we examined the simultaneous activation of approach and avoidance motives. That is, we experimentally activated one of the two kinds of motives (approaching relational closeness or distance in Study 5; avoiding relational closeness or distance in Study 6) and assessed the implicit activation of the opposing motives (avoiding relational closeness or distance in Study 5; approaching relational closeness or distance in Study 6). Whereas Study 4 examined the extent to which activation of one relational motive intensified attachment-anxious

people's relational ambivalence, Studies 5 and 6 examined the extent to which activating one side of a person's ambivalence paradoxically intensified the other side, especially in people who score high on attachment anxiety. We hypothesized that the greater a person's attachment anxiety, (a) the more his or her implicit motives for avoiding closeness/distance would be aroused by activation of approach tendencies and (b) the more his or her implicit motives for approaching closeness/distance would be aroused by activation of avoidance tendencies.

Although our primary goal was to understand the connections between attachment anxiety and aspects of relational ambivalence, we also measured avoidant attachment and examined its associations with key measures in the experiments. We did not expect avoidance to be related consistently to ambivalence, because avoidant people generally prefer interpersonal distance, attempt to reduce intimacy, and hold negative views of other people. Nevertheless, because attachment theory conceptualizes avoidance as a defensive reaction to natural desires for proximity and support, it is possible that implicit ambivalence exists below the surface of their usual self-presentation (e.g., Mikulincer, Dolev, & Shaver, 2004; Shaver & Mikulincer, 2005).

Study 1

Study 1 is a correlational study designed to examine the hypothesized association between attachment anxiety and relational ambivalence. For this purpose, participants completed the Experiences in Close Relationships scale (ECR; Brennan et al., 1998) and measures of explicit and implicit relational ambivalence. Explicit relational ambivalence was assessed with the Ambivalence in Intimate Relationships scale (AIR; Thompson & Holmes, 1996), which asks people to describe their positive and negative feelings toward several traits of a romantic partner. This scale taps attitudinal ambivalence toward a specific romantic partner – that is, the extent to which a person simultaneously holds positive and negative views of the partner.

Implicit relational ambivalence was assessed with a new version of the approach-avoidance task developed by Chen and Bargh (1999). In this task, participants were presented with a set of positive and negative words related to closeness and distance from relationship partners (e.g., closeness, intrusiveness, privacy, loneliness). On each trial, participants were

asked either to pull a lever back toward themselves (which we interpreted as an approach response) or push the lever forward and away from themselves (an avoidance response) when they encoded the meaning of a word, and latencies for initiating these responses were recorded.

Using non-relational words, Chen and Bargh (1999) recorded faster push responses for negative than for positive words and faster pull responses for positive than for negative words, indicating, in their opinion, that there were implicit, automatic tendencies to react with avoidance (push) to negatively valenced stimuli and with approach (pull) responses to positively valenced stimuli. Because ambivalence is defined as the coexistence of approach and avoidance tendencies toward the same stimulus, we assumed that rapid approach and avoidance responses to a positively or negatively valenced word, and a smaller difference between the two latencies, would indicate implicit ambivalence toward the issues designated by that word. That is, a person who responded quickly with both push and pull responses to a closeness- or distance-related word (whether positive or negative) would be experiencing relational ambivalence.

A second goal of Study 1 was to examine the uniqueness of the association between attachment anxiety and relational ambivalence while controlling for other theoretically relevant variables that might also explain the association. For example, attachment anxious people's negative models of self (e.g., Bartholomew & Horowitz, 1991) might cause them to doubt the correctness of their understanding of events and experiences (cf. Kruglanski's, 1989, construct of fear of invalidity) and to seek more information before making a decision (indicating what Cacioppo & Petty, 1982, called a need for cognition). Both fear of invalidity and need for cognition have been found to correlate with ambivalent descriptions of relationship partners (Thompson & Holmes, 1996), so they might be thought to explain the link between attachment anxiety and relational ambivalence. Alternatively, this link might be a mere reflection of an unsatisfactory close relationship, a possible effect of attachment anxiety (e.g., Feeney, 1999b) and a source of ambivalent views of one's relationship partner (Thompson & Holmes, 1996). Therefore, we asked participants to complete scales measuring fear of invalidity, need for cognition, and relationship satisfaction. In addition, we assessed participants' global attitudinal

ambivalence toward non-relational issues (at both explicit and implicit levels). We predicted that the hypothesized association between attachment anxiety and explicit and implicit signs of relational ambivalence would remain significant even after controlling for these other constructs.

Method

Participants. One hundred and ten Israeli undergraduates (81 women and 29 men, ranging in age from 18 to 32, $Mdn = 23$) volunteered to participate the study.¹ All of them were currently or previously involved in a romantic relationship that lasted more than 6 months, and 69% of them were involved in a relationship at the time of the study.² The length of these past or current romantic relationships ranged from 6 to 108 months ($Mdn = 18$).

Materials and procedure. The study involved testing one participant at a time. Each was told that he or she was participating in a social cognition study, completed a battery of self-report questionnaires, and performed a computerized task (the approach-avoidance task). To control for possible order effects, half of the participants completed the questionnaires before performing the approach-avoidance task, and half did so after performing the task.³ The self-report questionnaires were presented in a different random order for each participant.

Attachment insecurities were assessed with the 36-item ECR scale (Brennan et al., 1998). Participants rated the extent to which each item was descriptive of their feelings and behavior in close relationships on a 7-point scale, ranging from “not at all” (1) to “very much” (7). Eighteen items measured attachment anxiety (e.g. “I worry about being abandoned”) and 18 items measured avoidance (e.g., “I prefer not to show a partner how I feel deep down”). The reliability and validity of the Hebrew version of the ECR have been demonstrated (Mikulincer & Florian, 2000). In the current sample, Cronbach’s alphas were high for both the anxiety items (.92) and the avoidance items (.91). Scale scores were computed by averaging item ratings, and there was a significant correlation between the two scores, $r(109) = .34, p < .01$ (which we have informally found to be more likely when only people with relationship experience are included in a study).

As an assessment of explicit relational ambivalence, we used the Ambivalence in Intimate Relationships scale (AIR; Thompson & Holmes, 1996), which asks participants to

report their attitudes toward six of their romantic partner's traits (comfort with emotional closeness, relationship commitment, sexual passion, sociability, effectiveness in dealing with conflicts) and their global attitude toward the partner's personality. For each of these six attitude targets, participants received (a) a positive item, "Think about the favorable aspects of the targeted partner's trait and rate how positively you regard (or regarded) this trait within the relationship," and (b) a negative item, "Think about the unfavorable aspects of the same partner's trait and rate how negatively you regard (or regarded) this trait within the relationship." Ratings were made on a 7-point scale, ranging from "not at all" (1) to "very much" (7). The positive and negative questions were separated by other scales. Based on Thompson, Zanna, and Griffin's (1995) formula, we computed an ambivalence score for each of the six traits by subtracting the absolute difference between a participant's score on the positive item (P) for that trait and his or her score on the negative item (N) from the average score on the two items. That is,

$$(P + N)/2 - |P - N|$$

In Study 1, Cronbach's alpha for the 6 ambivalence scores was acceptable (.77), so a mean score for each participant was computed by averaging the six ambivalence scores.

Participants' reports of relationship quality were assessed with the five items used by Thompson and Holmes (1996) to assess different aspects of a relationship (e.g., frequency of arguments, love intensity). Participants rated the extent to which each item was descriptive of their romantic relationship. Ratings were made on a 9-point scale, ranging from "not at all" (1) to "very much" (9). In the current sample, Cronbach's alpha for the five items was acceptable (.76), and a mean score for each participant was computed by averaging the five item ratings.

More general attitudinal ambivalence was assessed with the General Ambivalence Questionnaire (Thompson et al., 1995), which asks about attitudes toward four issues: euthanasia, AIDS testing, organ donation, and women's military service. For each issue, participants were first asked to think about the favorable aspects of the issue and rate the positivity of their attitudes, feelings, and thoughts. They were then asked to think about the unfavorable aspects of the issue and rate the negativity of their attitudes, feelings, and thoughts.

Ratings were made on a 4-point scale, ranging from “not at all” (1) to “extremely” (4). The positive and negative questions were separated by other questionnaires. For each issue, we calculated ambivalence scores by inserting positivity and negativity ratings into the formula described above. Because there were three ratings for each issue (attitudes, feelings, thoughts) and four different issues, there were 12 ambivalence scores for each participant. The alpha for the 12 scores was high (.86), so we averaged them to create an attitudinal ambivalence score.

Participants also completed scales measuring fear of invalidity and need for cognition. Fear of Invalidity was assessed with Thompson and Zanna’s (1995) 14-item scale. Participants rated their agreement with each statement on a 6-point scale, ranging from “strongly disagree” (1) to “strongly agree” (6). Need for cognition was assessed with Cacioppo and Petty’s (1982) 18-item scale. Participants rated their agreement with each item on an 8-point scale, ranging from “strongly disagree” (1) to “strongly agree” (8). In Study 1, Cronbach’s alphas were high for both fear of invalidity (.86) and need for cognition (.87). We therefore computed two mean scores for each participant by averaging the appropriate item ratings.

As mentioned earlier, the implicit measure of relational ambivalence (the approach-avoidance task) was based on a task developed by Chen and Bargh (1999). Participants were presented with a series of positive and negative Hebrew words on a computer screen. The words included ones that were attachment-irrelevant and positive (e.g., holiday, flowers, clown), attachment-irrelevant and negative (e.g., germs, rats, hell), positive words related to interpersonal closeness (e.g., hug, closeness, trust), negative words related to interpersonal closeness (e.g., dependence, cling; intrude), positive words related to interpersonal distance (e.g., independent, privacy, free), and negative words related to interpersonal distance (e.g., lonely, separated, rejected). We chose 14 attachment-irrelevant words from Chen and Bargh’s (1999) list and generated our own lists of 50 closeness- and distance-related words. We pretested these words on a sample of 30 Israeli students, who were asked to rate the positivity of each one on an 11-point scale, ranging from “very negative” (0) to “very positive” (10). We selected 14 closeness words and 14 distance words (7 positive and 7 negative) that received a clear positive or clear negative

score (resulting in a mean rating of 7 or above for positive words and a mean of 3 or below for negative words). The final list of positive words included seven attachment-irrelevant words (mean positivity rating of 8.29, $SD = 1.20$), seven closeness words ($M = 8.36$, $SD = 0.94$), and seven distance words ($M = 8.26$, $SD = 1.07$). The list of negative words included seven attachment-irrelevant words ($M = 2.50$, $SD = 0.84$), seven closeness words ($M = 2.14$, $SD = 1.55$), and seven distance words ($M = 2.74$, $SD = 1.28$).

The task was run on a Pentium IBM PC, with an SVGA color monitor, and was programmed using Superlab software. Brightness and contrast were set somewhat low and words were displayed in black lettering on a white background in the middle of the screen. A lever 91 cm in length was connected to an electric switch at the base. This switchbox was connected to the computer through the serial port and was used to record reaction times (RTs) and directional responses. The lever stayed in a middle position from which participants could push it forward or pull it backward. After pulling or pushing the lever, it swung back to the middle position.

Participants first completed 10 practice trials followed by two blocks of 84 experimental trials. The words in the practice trials were different from those in the experimental trials. In each block, the 42 words (14 attachment-irrelevant words, 14 closeness words, 14 distance words) were presented twice for a total of 84 trials. In one block, participants were asked to push the lever forward with their hand as soon as they recognized the presented word (avoidance response). In the other block, they were asked to pull the lever back toward themselves as soon as they recognized the word (approach response). To control for possible order effects, half of the participants were given the “push” block first and the remaining participants were given the “pull” block first. No significant order effect was found on participants' RTs. The order in which the words were presented was randomly determined for each participant and each block.

Each trial of the task began with an “x” in the middle of the screen for 500 ms, followed by a single word. Participants were instructed to push or pull the lever as fast as they could as soon as they recognized the target word. The word remained on the screen until the participant moved the lever far enough to close the response box switch. Then the word vanished, and the

next trial began 1500 ms after the lever was moved back to the starting position. The computer automatically recorded the amount of time between the word's appearance and the participant's movement of the lever more than 10 degrees in either direction. The computer also recorded whether the participant pushed or pulled the lever on each trial.

The calculation of implicit ambivalence scores involved several steps: First, we dropped incorrect responses and outlier RTs (lower than 300 ms or higher than 1400 ms) from the analyses.⁴ These latencies occurred mainly on trials in which participants moved the lever less than the required distance or reacted before reading the word. Second, we subtracted each RT from the maximal reaction time (1400 ms) to create an index of reaction speed. Third, we used a log transformation to eliminate the negative skewness of reaction speed. Fourth, we computed two scores for each participant and each word: (a) the average speed of pulling the lever (approach score) each time a word was presented, and (b) the average speed of pushing the lever (avoidance score). Fifth, we computed an ambivalence score for each word by using the formula provided earlier (subtracting the absolute difference between the approach and avoidance scores from the average of these two scores). Based on this formula, ambivalence scores increased as both approach and avoidance responses became faster. Sixth, we computed for each participant three scores by averaging ambivalence scores for each of the three categories: attachment-irrelevant words, closeness words, and distance words. Thus, each participant had three scores reflecting the extent to which his or her push and pull responses reflected ambivalence toward attachment-irrelevant issues, closeness-related issues, and distance-related issues.⁵

To determine whether push and pull responses really represented avoidance and approach action tendencies, we took analytic steps proposed by Chen and Bargh (1999) and compared the latencies for congruent responses (approach following positive words and avoidance following negative words) to the latencies for incongruent responses (avoidance following positive words and approach following negative words). Specifically, for each category of words (closeness, distance, attachment-irrelevant), we computed two log-transformed mean response latencies: one

for congruent responses (push RT for negative words and pull RT for positive words) and the other for incongruent responses (pull RT for positive words and push RT for negative words).

Within-subjects repeated-measures ANOVAs yielded a replication of Chen and Bargh's (1999) congruency effect for closeness words, $F(1, 109) = 13.40, p < .01, \eta^2 = .12$, distance words, $F(1, 109) = 12.18, p < .01, \eta^2 = .10$, and attachment-irrelevant words, $F(1, 109) = 10.52, p < .01, \eta^2 = .09$. Participants were faster to pull (versus push) the lever in response to positive words and to push (versus pull) the lever in response to negative words. That is, pull and push responses appeared to be reliable estimates of approach and avoidance action tendencies, implying that the combination of fast pull and fast push responses (a mixture of congruent and incongruent responses) could be used, as intended, to indicate implicit ambivalence.

Results and Discussion

To determine the unique contributions of attachment anxiety and avoidance to relational ambivalence, we conducted a series of regression analyses predicting participants' AIR scores and their implicit ambivalence toward closeness and distance words. The regressions yielded the predicted significant unique effect of attachment anxiety on the AIR score, implicit ambivalence toward closeness words, and implicit ambivalence toward distance words (see Table 1).

Avoidant attachment was not uniquely associated with any of the three ambivalence scores.⁶

Having found that attachment anxiety was significantly associated with relational ambivalence, we examined whether this association was attributable to general attitudinal ambivalence, relationship quality, fear of invalidity, or need for cognition. Regression analyses predicting general attitudinal ambivalence, need for cognition, and implicit ambivalence toward attachment-irrelevant words from attachment anxiety and avoidance yielded no significant effects, $\beta s < .10$. Moreover, the introduction of each of these variables into the regression analyses performed on each of the three relational ambivalence scores did not notably change the significant effects of attachment anxiety, all $\beta s > .23$, all $ps < .05$. Therefore, general ambivalence, need for cognition, and implicit ambivalence toward attachment-irrelevant words could not explain the association between attachment anxiety and relational ambivalence.

Regressions performed on fear of invalidity and perceived relationship quality with attachment scores as predictors revealed significant effects for attachment anxiety, β s of .49 and -.39, $ps < .01$: The higher the attachment anxiety score, the higher the fear of invalidity and the lower the perceived relationship quality. However, entering fear of invalidity or perceived relationship quality into the regression analyses performed on each of the three relational ambivalence scores did not notably change the significant effects of attachment anxiety, all β s $> .25$, all $ps < .05$. That is, the observed associations between attachment anxiety and relational ambivalence were not explained by fear of invalidity or perceived relationship quality.

As expected, attachment anxiety was significantly associated with both explicit and implicit measures of relational ambivalence, and these associations could not be explained by general ambivalence, perceived relationship quality, fear of invalidity, or need for cognition. However, we should note that the AIR scale taps explicit attitudinal ambivalence toward a romantic partner (simultaneous existence of strong positive and negative views of that partner), whereas the push-pull task taps implicit motivational ambivalence toward relational goals (simultaneous existence of strong approach and avoidance tendencies towards closeness and distance) that are not necessarily targeted to a specific relationship or partner. Therefore, we needed additional evidence showing that anxiety is associated with explicit measures of motivational ambivalence toward closeness and distance goals. We also needed more evidence showing that attachment anxiety is associated with implicit measures of ambivalence toward closeness and distance in a specific relationship as well as ambivalent attitudes towards a specific relationship partner. Studies 2 and 3 were designed to address these needs.

Study 2

In Study 2, we again examined the hypothesized link between attachment anxiety and explicit and implicit relational ambivalence while addressing some of the limitations of Study 1. First, we asked participants to complete a new scale tapping explicit motivational ambivalence toward closeness and distance goals in a romantic relationship. In this way, we asked whether attachment anxiety is associated not only with explicit attitudinal ambivalence toward a romantic

partner (Study 1) but also with explicit motivational ambivalence toward closeness and distance. Second, we asked participants to perform the approach-avoidance task used in Study 1 while focusing their attention on a romantic relationship. In this way, we asked whether the observed association between anxiety and implicit ambivalence toward closeness and distance concepts (Study 1) was replicated when this ambivalence was assessed in a concrete relational context.

As in Study 1, we statistically controlled for participants' relationship quality, or satisfaction, and global attitudinal ambivalence toward non-relational issues (at both explicit and implicit levels), so we could examine the uniqueness of the association between attachment anxiety and relational ambivalence. In Study 2, we also controlled for other personality traits that have been found to correlate with attachment insecurities and therefore might offer alternative explanations of relational ambivalence: neuroticism, extraversion, and self-esteem. There is ample evidence that attachment anxiety is associated with neuroticism and low self-esteem, whereas avoidant attachment is related negatively to extraversion (see Mikulincer & Shaver, 2007, and Nofle & Shaver, 2006, for reviews).

Method

Participants. Sixty Israeli undergraduates (47 women and 13 men, ranging in age from 18 to 31, $Mdn = 23$) volunteered to participate the study. All were currently involved in a romantic relationship that had lasted more than 6 months. The length of these relationships ranged from 6 to 92 months ($Mdn = 15$).

Materials and procedure. The study was run in two sessions. In the first session, participants completed the ECR scale (described in Study 1) together with other self-report scales. In this sample, Cronbach alphas were again high for the 18 anxiety items (.92) and the 18 avoidance items (.90), so two mean scores were computed. The two scores were once again significantly correlated, $r(58) = .39, p < .01$.

During this session, participants also completed two of the questionnaires described in Study 1: the five items used by Thompson and Holmes (1996) to assess relationship quality (Cronbach alpha = .81) and the 12-items of the General Ambivalence Questionnaire (Cronbach

alpha = .76). Participants also completed a Hebrew version of the Neuroticism and Extraversion subscales of the Big Five Inventory (BFI; John & Srivastava, 1999). They were asked to rate how well each item described them using a 5-point scale ranging from 1 (“not at all”) to 5 (“very much”). Alphas for the two subscales were acceptable (.75, .84) and, as expected (see Nettle & Shaver, 2006), there were significant associations between anxiety and neuroticism, $r(58) = .37$, $p < .01$, and between avoidance and introversion (low extraversion), $r(58) = -.31$, $p < .05$. In order to control for participants’ self-esteem, they also completed a Hebrew version of Rosenberg’s (1979) 10-item Self-Esteem Scale. Ratings were made on a 4-point scale ranging from strongly disagree (1) to strongly agree (4). In our sample, Cronbach alpha for the 10 items was high (.91). As found in previous studies (see Mikulincer & Shaver, 2007, for a review), there was a significant negative association between anxiety and self-esteem, $r(58) = -.32$, $p < .05$.

Another research assistant, unaware of participants’ attachment scores, conducted the second session 3-5 weeks later. This session involved one participant at a time and was billed as a study of social cognition. Participants were asked to complete a self-report questionnaire and to perform a computerized task (the approach-avoidance task). To control for possible order effects, half of the participants completed the questionnaire before performing the approach-avoidance task, and half did so after performing the task.

Participants completed a new questionnaire tapping explicit ambivalence toward closeness and distance in their current romantic relationship. This scale was based on the AIR scale (see Study 1), and participants were asked to think about each of six relational episodes: three closeness-enhancing interactions with their current romantic partner (taking a weekend trip with the partner, asking advice from the partner about a career problem, sharing one’s feelings with the partner) and three distance-enhancing episodes (having an exciting interaction with an attractive woman/man without the partner’s knowledge, taking a 2-day vacation with friends without the partner, thinking about career-related changes without sharing them with the partner). For each of these six episodes, participants received (a) an approach item, “Think about the favorable aspects of this episode and rate how much you would like to initiate such an

interaction,” and (b) an avoidance item, “Think about the unfavorable aspects of this episode and rate how much you would prefer to avoid such an interaction.” Ratings were made on a 7-point scale ranging from “not at all” (1) to “very much” (7). The approach and avoidance items were separated by other filler questionnaires that dealt with hobbies and academic studies.

We pretested the six episodes on a sample of 20 Israeli students, who were asked to rate (a) the extent to which each one of the episodes enhances relational closeness, (b) the extent to which each one enhances relational distance, and (c) their positivity. Ratings were made on a 7-point scale, ranging from “not at all” (1) to “very much” (7). ANOVAs with repeated measures indicated that the three closeness episodes were more likely to be appraised as enhancing closeness (M s of 5.85, 7.50., 5.50) than the three distance episodes (M s of 3.20, 2.85, 2.70), $F(5, 95) = 45.19, p < .01$. In addition, the three distancing episodes were more likely to be appraised as enhancing distance (M s of 5.75, 5.70, 5.55) than the three closeness episodes (M s of 2.25, 2.15, 2.10), $F(5, 95) = 120.26, p < .01$. As intended, there was not a significant difference among the six interactions in their appraised positivity, $F(5, 95) = 0.70$, implying that differences in closeness and distance were not confounded with differences in valence. All six interactions were rated as moderately positive (M s ranging from 3.70 to 4.35). In Study 2’s sample, no significant differences were found among the six episodes in approach and avoidance scores. All six interactions received moderately high scores on the approach item (M s ranging from 4.07 to 5.18), and moderately low scores on the avoidance item (M s ranging from 2.89 to 3.64).

Based on the formula used in Study 1, we computed an ambivalence score for each of the six episodes by subtracting the absolute difference between a participant’s score on the approach item and his or her score on the avoidance item from the average of the two item scores. Cronbach alphas for the ambivalence scores were acceptable for the three closeness-enhancing episodes (.71) and the three distance-enhancing episodes (.74). We therefore computed two overall scores: (a) the average of the ambivalence scores across the three closeness-enhancing episodes and (b) the average of the ambivalence scores across the three distance-enhancing

episodes. Higher scores reflected higher explicit ambivalence toward closeness and distance in a romantic relationship. The two scores were moderately correlated, $r(58) = .26, p < .05$.

In order to assess implicit ambivalence toward closeness, distance, and attachment-irrelevant issues, we had the participants perform the approach-avoidance task used in Study 1. However, whereas participants in Study 1 did not focus on a specific relationship, in Study 2 we took two steps to focus participants' attention on their current romantic relationship. First, after receiving the task instructions and performing 10 practice trials, participants were asked to think about their current romantic relationship and to visualize the face of their current partner. Second, during the task itself, before a target word appeared on the computer screen, participants were subliminally exposed to the name of their current romantic partner for 20 milliseconds (ms). That is, each trial of the task began with an "x" in the middle of the screen for 500 ms, followed by the name of the participant's partner in the middle of the screen for 20 ms, which was followed in turn by a target word (attachment-irrelevant, closeness-related, distance-related) that remained on the screen until the participant pushed or pulled the lever. Beyond these two methodological changes, the task was identical to the one in Study 1. For each participant, we computed implicit ambivalence scores for closeness words, distance words, and attachment-irrelevant words using the computational method described in Study 1.

Results and Discussion

Regression analyses similar to those conducted in Study 1 yielded significant unique effects of attachment anxiety on both explicit and implicit ambivalence toward closeness (see Table 1). However, attachment anxiety did not have a significant effect on either explicit or implicit ambivalence toward distance (see Table 1). Avoidant attachment was not significantly related to any of the four ambivalence scores (see Table 1). Regressions also revealed that no attachment score was related significantly to the explicit general ambivalence score or to implicit ambivalence toward attachment-irrelevant words (see Table 1). Moreover, entering these variables as predictors in the analyses of the relational ambivalence scores did not notably change the significant effects of attachment anxiety, all β s $> .34$, all $ps < .01$. In addition,

entering relationship quality, neuroticism, extraversion, or self-esteem as a predictor did not notably change the observed effects of attachment anxiety, $\beta_s > .28$, $p_s < .05$.

The findings partially replicate and extend those of Study 1. At the explicit level, attachment anxiety was not only associated with attitudinal ambivalence toward a romantic partner (as in Study 1), but also with strong approach-avoidance ambivalence about closeness to a romantic partner (Study 2). At the implicit level, the observed association between attachment anxiety and ambivalence toward closeness in Study 1 was also found when participants were focused specifically on their current romantic relationship. However, Study 2 failed to find a significant association between attachment anxiety and either explicit or implicit ambivalence toward relational distance. We will discuss this fact in the General Discussion section.

As in Study 1, the significant associations were not explained by attachment-irrelevant ambivalence or perceived relationship quality. Moreover, although attachment anxiety was associated with neuroticism and low self-esteem, its associations with explicit and implicit relational ambivalence were not explained by these personality measures.

Study 3

In Study 3, we extended our examination of the association between attachment anxiety and ambivalence by assessing implicit attitudinal ambivalence towards a romantic partner. That is, instead of using the approach-avoidance task from Studies 1 and 2, we designed a lexical decision task that assessed the extent to which participants implicitly held simultaneous positive and negative views of a romantic partner. In this task, implicit attitudinal ambivalence was defined by high cognitive access to both positive and negative traits of a romantic partner at a given moment, which implied readiness to use these traits in processing information (e.g., deciding whether a string of letters is or is not a word).

Participants completed the ECR scale and listed positive and negative traits of their current romantic partner. They were then asked to perform a computerized lexical decision task while their attention was focused either on the name of their romantic partner or on a neutral name. On each trial of the task they read a string of letters and determined as quickly as possible

whether it was a word or a non-word while they were subliminally primed with either the name of their romantic partner or a neutral name. Reaction times (RTs) served as an index of the accessibility of thoughts related to the target words: The faster the RT, the higher the inferred accessibility (e.g., Fischler & Bloom, 1979). The target words were positive and negative traits of a participant's romantic partner as well as positive and negative traits provided by other participants (which should have been irrelevant to a participant's view of his or her partner).

For each participant, we computed two ambivalence scores: (a) implicit ambivalence toward the romantic partner (the extent to which the participant had cognitive access to both positive and negative traits of the partner) and (b) partner-irrelevant implicit ambivalence (the extent to which the participant had cognitive access to both positive and negative traits provided by other participants). Because the hypothesized link between attachment anxiety and attitudinal ambivalence should be limited to a person's own relationship, we predicted that participants' attachment anxiety would be associated only with implicit ambivalence toward their romantic partner's traits when the name of the partner was primed before the trait words were presented (the romantic-partner priming condition). This was not expected to happen when other people's traits were presented or when a name of someone other than the partner was primed.

Method

Participants. Eighty Israeli undergraduates (56 women and 24 men, ranging in age from 18 to 33, $Mdn = 22$) volunteered to participate the study. All were currently involved in a romantic relationship that had lasted more than 6 months. The length of these relationships ranged from 6 to 78 months ($Mdn = 18$). Participants were randomly assigned to two experimental conditions with 40 participants in each.

Materials and procedure. The study was run in two sessions. The first session was conducted during a regular class period, when participants completed the ECR scale and the 5-items relationship quality scale (as in Study 1). In this sample, alpha reliability coefficients were again acceptable for these scales, ranging from .76 to .90. Anxiety and avoidance were positively but not significantly correlated this time, $r(78) = .12$. Both attachment scores were significantly

associated with perceived relationship quality, r s of $-.32$ and $-.35$, p s $< .01$. Participants were also asked to provide the name of their partner and to write down five positive traits (“traits that you like in your partner”) and five negative traits (“traits that you dislike in your partner”) that characterize this partner. The order of the tasks was randomized across participants.

The second session was conducted two weeks later by a different experimenter, who was unaware of participants’ first-session scores. In this session, participants performed a computerized lexical decision task based on the apparatus and procedure used by Baldwin et al. (1993). It was run on a Pentium IBM PC, with an SVGA color monitor, and was programmed using Superlab software. Brightness and contrast were set somewhat low and letter strings were displayed in black lettering on a white background in the middle of the screen.

On each trial, participants read one of 40 target letter strings and were asked to judge as quickly as possible whether the letter string was a word or not by pressing “1” on the keyboard number pad if the string was a word or “3” if it was not a word. Participants worked at their own pace, completing 10 practice trials and then 120 scored trials.

For each participant we constructed a unique list of 40 letter strings in accordance with the traits generated by that person during the first session. These strings included five categories: (a) *positive traits of the participant’s partner* – the five positive traits that each participant generated when describing his or her romantic partner; (b) *negative traits of the participant’s partner* – the five negative traits that each participant generated when describing his or her romantic partner; (c) *positive traits of other participants’ partners* – five positive traits that were generated by other participants and were not closely related to the traits a participant used to describe his or her partner; (d) *negative traits of other participants’ partners* – five negative traits that were generated by other participants and were not closely related to the traits a participant used to describe his or her partner; and (e) *non-words* – twenty non-words that were generated by taking common Hebrew words and scrambling the letters. Non-words were identical for all participants. The 40 letter strings were presented three times for a total of 120

trials. Letter strings were randomly ordered across participants and each participant received a different order of the strings across the trials.

Participants were randomly divided into two conditions according to the name that was used as a subliminal prime during the lexical decision task. In the *romantic-partner priming* condition ($n = 40$), participants' attention was focused on their current romantic partner. Specifically, before a target letter string appeared on the screen, participants were subliminally exposed to the name of their current romantic partner for 20 ms. In the *control* condition ($n = 40$), participants' attention was focused on a neutral name by subliminally exposing them to the name of another participant's romantic partner for 20 ms. In both groups, each trial of the task began with an "x" in the middle of the screen for 500 ms, followed by a name (either the name of the participant's romantic partner or the name of another participant's partner) in the middle of the screen for 20 ms, which was followed in turn by a target letter string for 1500 ms. At the end of the session, participants were debriefed about the study's goals and manipulations.

The calculation of implicit ambivalence scores involved several steps. First, we dropped incorrect responses and outlier RTs (lower than 300 ms or higher than 1400 ms). Second, we subtracted each RT from the maximal reaction time (1400 ms) to create an index of reaction speed. Third, we used a log transformation to eliminate the negative skewness of reaction speed. Fourth, we computed a total score for each participant in each word category (partner's positive traits, partner's negative traits, other people's positive traits, other people's negative traits) by averaging the speed for correct responses in each category. Fifth, we computed two ambivalence scores for each participant using the formula provided in Study 1. Implicit ambivalence toward partner's traits was computed by subtracting the absolute difference between the speed for partner's positive traits and the speed for partner's negative traits from the average of these two speed scores. Implicit ambivalence toward other people's traits was computed by subtracting the absolute difference between the speed for other people's positive traits and the speed for other people's negative traits from the average of these two speed scores.

Results and Discussion

The data were subjected to hierarchical regression analyses predicting the two ambivalence scores. In the first step of these regressions, we entered romantic-partner priming (a coding contrasting romantic-partner priming, 1, with neutral priming, -1), attachment anxiety, and avoidant attachment as predictors. Following Aiken and West's (1991) recommendations, attachment scores were centered in relation to their mean. In the second step, we included the interactions between priming condition and each attachment score as additional predictors.⁷

For implicit ambivalence toward other people's partners' traits, the regression analysis yielded no significant main effects or interactions (see Table 2). However, for implicit ambivalence toward partner's traits, there was a significant main effect of attachment anxiety: The higher a participant's attachment anxiety score, the stronger his or her implicit ambivalence toward the partner's traits (see Table 2). The analysis also yielded a significant interaction between anxiety and romantic-partner priming (see Table 2). No other effects were significant.

Simple slope analyses (Aiken & West, 1991) revealed that the association between anxiety and implicit ambivalence concerning one's partner's traits was significant in the romantic-partner priming condition, $\beta = .47, p < .01$, but not in the control condition, $\beta = .03$. Additional slope analyses revealed that subliminally presenting a partner's name created greater ambivalence toward the partner's traits when attachment anxiety was one standard deviation above the mean, $\beta = .24, p < .05$. But when anxiety was one standard deviation below the mean, focusing attention on a romantic partner (compared to neutral name) led to less ambivalence toward the partner's traits, $\beta = -.20, p < .05$. Regression analyses also revealed that perceived relationship quality, implicit ambivalence toward other people's partners' traits, and RTs for non-words did not notably change the significant interaction between attachment anxiety and romantic-partner priming on ambivalence to one's own partner's traits, $\beta s > .20$, all $ps < .05$.

This study provides further support for the hypothesized association between attachment anxiety and relational ambivalence. Attachment anxiety is associated not only with implicit approach-avoidance conflict concerning relational closeness (Studies 1 and 2), but also with

implicit ambivalent attitudes toward one's romantic partner. All of the studies are compatible with the prediction that anxiously attached individuals are ambivalent about their own romantic partner but are not necessarily ambivalent about everyone and everything else.

Study 4

In Study 4, we tested the hypothesis that attachment-anxious people's relational ambivalence would be intensified by either thoughts about relationship initiation or thoughts about relationship dissolution. These relational thoughts are likely, in most people, to activate one relational tendency (either approach or avoidance), but in the case of attachment-anxious people, conflicting tendencies may be activated, creating relational ambivalence. In Study 4, participants who had previously completed the ECR were asked to perform a guided imagination task and were randomly divided into three conditions: (a) relationship initiation (imagining the beginning of a romantic relationship), (b) separation (imagining the breakup of a romantic relationship), and (c) control (imagining watching a TV show). Participants then completed the approach-avoidance task described in Study 1. Our main prediction was that the association between attachment anxiety and implicit ambivalence toward relational issues would be stronger in the relationship initiation and separation conditions than in the control condition.⁸

Another goal of Study 4 was to consider an alternative interpretation of the findings regarding implicit ambivalence. As explained earlier, faster combined push and pull responses to positive and negative words indicate greater implicit ambivalence toward the issues named by the words. However, faster responses might also reflect more rapid word recognition. This alternative meaning of RTs in the approach-avoidance task is especially relevant in the case of attachment-anxious people, because they have been found to recognize attachment-related words (either positive or negative) in lexical decision tasks more quickly than less anxious people (Mikulincer, Birnbaum, Woddis, & Nachmias, 2000). In Study 4, participants completed a simple word recognition task so that we could examine attachment-related differences in recognition RTs for closeness and distance words. We were interested in seeing whether variations in recognition RTs could explain the link between anxiety and ambivalence.

Method

Participants. Ninety Israeli undergraduates (60 women and 30 men, ranging in age from 18 to 36, $Mdn = 24$) took part in the study. All were currently or previously involved in a romantic relationship that lasted over 6 months, and 76 % were in such a relationship at the time of the study. Relationship length ranged from 6 to 96 months ($Mdn = 18$).

Materials and procedure. The study was run in two sessions. The first session was conducted during a regular class period in which participants completed a Hebrew version of the ECR scale (see Study 1). Once again, alphas were high for the anxiety items (.87) and the avoidance items (.88). There was a positive but not statistically significant association between the two scores, $r(88) = .14$.

Another research assistant, unaware of participants' attachment scores, conducted the second session 2-3 weeks later. This session, presented as an investigation of social attitudes, was run on an individual basis. Following instructions, participants were randomly assigned to one of three conditions. In the "*relationship initiation*" condition, they received instructions asking them to imagine being at the beginning of a romantic relationship with a partner with whom they wanted to form a long-term bond. They then responded to two open-ended probes: (a) Describe the emotions and thoughts that this situation arouses in you. (b) How do you feel about this situation? In the "*separation*" condition, participants received written instructions asking them to imagine a painful, unwanted breakup of a romantic relationship. They then responded to the two open-ended probes. In the "*control*" condition, participants received written instructions asking them to imagine a TV program they usually watched and then to respond to the open-ended probes. In all three conditions, the questionnaires included the two items with space below each one for about a paragraph response.⁹ No one had trouble responding to the probes. No significant differences in ECR scores were found among the three conditions.

Following these procedures, all participants performed a shortened version of the approach-avoidance task described in Study 1. That is, they completed two blocks of 56 trials in which they either pushed or pulled the lever as soon as they recognized a word. In this version of

the task, the words included 14 closeness words and 14 distance words that were presented twice in each block. Other details of the task were identical to those of Study 1. We computed implicit ambivalence scores for closeness and distance words using the Study 1 formula.

So that we could examine attachment-related differences in recognition RTs for closeness and distance words while controlling for general word-recognition times, participants also performed a simple 60-trial word-recognition task. On each trial, a word was presented on a computer screen and participants were asked to press the “space” key (rather than pulling or pushing a bar) on the computer keyboard as soon as they recognized the word. The words included the 14 closeness words and the 14 distance words used in the approach-avoidance task as well as 32 non-attachment words. All parameters of stimulus presentation were identical to those of the approach-avoidance task (see Study 1). In this task, there was no approach or avoidance response to closeness and distance words, so the time taken to make the neutral response was a good estimate of word recognition latencies. For each participant, we computed two scores: average RT for the 14 closeness words and average RT for the 14 distance words. Half of the participants completed the word-recognition task before the approach-avoidance task, and the other half completed it after the approach-avoidance task. No significant difference in RTs was found between these two groups. At the end of the study, participants were debriefed, given detailed explanations of the study’s goals and manipulations, and thanked for participating.

Results and Discussion

Data were analyzed with the same kinds of two-step hierarchical regression analyses used in Study 3. Two contrast variables were created, one contrasting the separation condition (1) with the control condition (-1), and the other contrasting the relationship initiation condition (1) with the control condition (-1). This allowed us to contrast each of the two experimental conditions with the control condition. In the first step of the regressions, we included the main effects for liking condition, rejection condition, attachment anxiety, and avoidant attachment. Attachment scores were centered in relation to their mean. In the second step, we examined the 2-way

interactions between each of two manipulated variables (liking condition, rejection condition) and each attachment dimension (a total of four interaction terms).

Ambivalence toward closeness words. The analysis yielded a significant unique effect of attachment anxiety, with higher attachment anxiety being associated with greater ambivalence toward closeness words (see Table 3). However, this effect was qualified by significant interactions between attachment anxiety and relationship initiation and between attachment anxiety and separation (see Table 3). Simple slope analyses examining the significant interaction between attachment anxiety and relationship initiation revealed that the link between attachment anxiety and implicit ambivalence toward closeness words was significant in the relationship initiation condition, $\beta = .52, p < .01$, but not in the control condition, $\beta = -.04$. Additional slope analyses revealed that asking participants to think about the initiation of a romantic relationship led to greater ambivalence toward closeness words when the value of attachment anxiety was 1 SD above the mean, $\beta = .46, p < .01$, but not when it was 1 SD below the mean, $\beta = -.16$.

In a similar fashion, simple slope analyses examining the significant interaction between attachment anxiety and separation revealed that the link between attachment anxiety and implicit ambivalence toward closeness words was significant in the separation condition, $\beta = .55, p < .01$, but not in the control condition, $\beta = -.07$. Additional slope analyses revealed that asking participants to think about a painful romantic breakup led to greater ambivalence toward closeness words when the value of attachment anxiety was 1 SD above the mean, $\beta = .47, p < .01$, but not when the value of attachment anxiety was 1 SD below the mean, $\beta = -.09$.

Ambivalence toward distance words. The regression yielded a significant interaction between avoidant attachment and separation (see Table 3). Simple slope analyses revealed that avoidance was significantly associated with greater implicit ambivalence toward distance words in the separation condition, $\beta = .32, p < .01$. In the control condition, however, the higher the avoidance, the lower the implicit ambivalence toward distance words, $\beta = -.22, p < .05$. Additional slope analyses revealed that asking participants to think about a painful romantic breakup led to greater ambivalence toward distance words when the value of avoidant

attachment was 1 SD above the mean, $\beta = .46, p < .01$, but not when it was 1 SD below the mean, $\beta = -.18$. This finding indicates that thoughts of separation caused avoidant participants to react to distance words with greater implicit ambivalence.

Additional analyses. To examine the alternative interpretation of attachment-related differences in performing the approach-avoidance task – that is, the possibility that simple word-recognition latencies could explain the results – we conducted two analyses. First, we conducted hierarchical regression analyses examining the effects of experimental condition and attachment scores on RTs for closeness and distance words in the word-recognition task. The analyses were similar to those described above and produced only a significant effect for attachment anxiety on RT for closeness words, $\beta = -.35, p < .01$. That is, attachment anxiety was associated with faster recognition of closeness words, replicating Mikulincer et al.'s (2000) findings.

Second, we recomputed the regression analyses we had performed on ambivalence scores. But this time we included the relevant word-recognition latency (RT for either closeness or distance words) as an additional predictor, so that we could determine whether the effects of attachment scores on ambivalence scores remained significant after controlling for word-recognition latencies. We found that all of the significant effects reported in Table 3 remained significant and did not change notably in strength after controlling for word-recognition latencies. That is, attachment-anxious people's heightened ambivalence toward closeness words in the relationship initiation and separation conditions, β s of .49 and .54, $ps < .01$, as well as avoidant people's heightened ambivalence toward distance-related words in the separation condition, $\beta = .33, p < .01$, could not be explained by simple word-recognition RTs.

Conclusions. In line with our predictions, the link between attachment anxiety and implicit ambivalence toward closeness words was strengthened by thoughts about relationship initiation or thoughts about separation. However, these experimental conditions did not strengthen attachment-anxious people's implicit ambivalence toward distance words. None of these findings could be explained by simple word-recognition latencies. Rather, they seemed to

reflect individual differences in the strength of implicit approach and avoidance tendencies toward closeness and distance issues.

Unexpectedly, more avoidant participants reacted with heightened ambivalence toward distance words after thinking about relationship dissolution. Hence, although avoidant people tend to say they like being autonomous and solitary (Shaver & Hazan, 1993), they show signs of implicit ambivalence about being distanced from relationship partners. We will explore the meaning of this unexpected finding further in the General Discussion.

Study 5

In Study 4, we found that relational contexts that activated one relational motive (approach or avoidance) intensified attachment-anxious people's ambivalence toward closeness. These findings imply that anxiously attached people react to approach or avoidance contexts in a relationship not only with intensification of the corresponding motivational tendency (approaching or avoiding closeness) but also with intensification of the opposing tendency. However, this motivational process can be inferred only indirectly from the findings of Study 4. In Study 5 we examined whether experimental activation of an approach tendency toward relational closeness would strengthen attachment-anxious people's implicit activation of the opposing motive (avoiding relational closeness).

For this purpose, participants who had previously completed the ECR scale were asked to think about either positive aspects of being close to their current romantic partner (the closeness-approach condition), positive aspects of being alone at times, without their partner (the distance-approach condition), or positive aspects of being a university student (the control condition). Participants then completed a shortened version of the approach-avoidance task used in Study 1. In this version, the target words included only positive words related to closeness, distance, or attachment-irrelevant issues, and participants performed only the push (avoidance) block of the task. Our main prediction was that the closeness-approach condition (as compared to the other conditions) would speed up attachment-anxious people's push (avoidance) responses toward closeness words. Because Study 4 found that anxious people's implicit relational ambivalence

was not manifested in approach-avoidance conflicts towards distance words, we made no prediction about the possible effects of the distance-approach condition.

Method

Participants. Ninety Israeli undergraduates (65 women and 25 men, ranging in age from 18 to 32, $Mdn = 22$) took part in the study. All were currently involved in a romantic relationship that had lasted more than 6 months.

Materials and procedure. The study was run in two sessions. The first session was conducted during a regular class period in which participants completed a Hebrew version of the ECR scale (see Study 1). Cronbach alphas were once again high for the 18 anxiety items (.92) and the 18 avoidance items (.91). There was a positive but not significant correlation between the two scores, $r(88) = .19$.

Another research assistant, unaware of participants' ECR scores, conducted the second session 2-3 weeks later. This session was run on an individual basis and was presented as an investigation of social attitudes. In the first part of the session, participants were randomly assigned to one of three conditions. In the "*closeness-approach*" condition, participants ($n = 30$) were asked to think about the positive aspects of being close to their current romantic partner – that is, to think about features of the partner or the relationship that cause them to initiate interactions that increase closeness, dependence, and intimacy. Participants were then asked to write about these positive aspects and describe examples of satisfying closeness-enhancing interactions with their partner. In the "*distance-approach*" condition, participants ($n = 30$) were asked to think about the positive aspects of being alone and gaining some distance from their current romantic partner – that is, things they like about being alone at times that cause them to seek distance from the partner. Participants then wrote about these positive aspects and described examples of beneficial instances of maintaining some distance. In the "*control*" condition, participants ($n = 30$) were asked to think about the positive aspects of being a university student – things that cause them to spend time and energy in academic activities. Participants then wrote about these positive aspects and described examples of rewarding academic activities. No

participant seemed to have trouble responding to the probes.¹⁰ No significant differences in ECR scores were found between the three experimental conditions.

Following these procedures, all participants performed a shortened 42-trial version of the approach-avoidance task described in Study 1. In this version, only the positive target words used in Study 1 were included: seven positive closeness words, seven positive distance words, and seven positive non-attachment words (each word was presented twice). In addition, participants performed only the push (avoidance) block of the task. On each trial, participants were presented with one of the 21 positive words and were asked to push a lever forward as soon as they recognized the word (avoidance response).

For each participant, we dropped incorrect responses and outlier RTs (lower than 300 ms or higher than 1400 ms) from the analyses. We then computed three RT scores: (a) average RT for push responses to positive closeness words, (b) average RT for push responses to positive distance words, and (c) average RT for push responses to attachment-irrelevant positive words. Thus, each participant received three scores reflecting the latency of his or her push responses to positively valenced words related to closeness, distance, and non-attachment issues.

Results and Discussion

Data were analyzed with the same kinds of two-step hierarchical regression analyses described in Study 3. Two contrast variables were computed, one contrasting the closeness-approach condition (1) with the control condition (-1), and the other contrasting the distance-approach condition (1) with the control condition (-1). The regression performed on RTs for push (avoidance) responses to positive non-attachment words yielded no significant effects (see Table 4). However, the regression performed on RTs for push (avoidance) responses to positive distance words yielded significant main effects for avoidant attachment and the distance-approach condition (see Table 4). Avoidant attachment was associated with slower push responses to positive distance words, and participants in the distance-approach condition made slower push responses to these words than controls.

The regression performed on RTs for push (avoidance) responses to positive closeness words yielded a significant main effect for attachment anxiety (see Table 4). Attachment anxiety was associated with faster push responses to closeness words. However, this main effect was qualified by a significant interaction between attachment anxiety and the closeness-approach condition (see Table 4). No other interactions were significant. Simple slope analyses revealed that the association between attachment anxiety and faster push responses to closeness words was significant in the closeness-approach condition, $\beta = -.73, p < .01$, but not in the control condition, $\beta = -.01$. Additional slope analyses revealed that asking participants to think about the positive aspects of being close to their romantic partner led to faster avoidance of closeness words when the value of attachment anxiety was 1 SD above the mean, $\beta = -.48, p < .01$. However, when attachment anxiety was 1 SD below the mean, thinking about the positive aspects of relational closeness led to slower avoidance of closeness words, $\beta = .24, p < .05$.

Overall, the findings supported our prediction that experimentally activating approach tendencies toward relational closeness would paradoxically strengthen attachment-anxious participants' implicit activation of avoidance of closeness. For participants scoring relatively low on attachment anxiety (the more secure people), being asked to think about the positive aspects of being close to their romantic partner reduced the implicit activation (slower responses) of avoidance reactions to closeness words. Also in line with predictions, the paradoxical reaction of anxious participants did not occur following the experimental activation of approach tendencies toward interpersonal distance.

Study 6

In Study 6, we examined whether the experimental activation of an avoidance orientation toward relational closeness would strengthen attachment-anxious participants' implicit activation of the opposing motive (to approach relational closeness). For this purpose, participants who had previously completed the ECR were asked to think about either negative aspects of being close to their romantic partner (closeness-avoidance condition), negative aspects of being alone rather than with their partner (distance-avoidance condition), or negative aspects of being a university

student (the control condition). Participants then completed a shortened version of the approach-avoidance task used in Study 1. In this version, the target words included only negative words related to closeness, distance, or attachment-irrelevant issues, and participants performed only the pull (approach) block of the task. Our main prediction was that the closeness-avoidance condition (as compared to other conditions) would speed up attachment-anxious participants' pull (approach) responses to closeness words.

Method

Participants. Ninety Israeli undergraduates (47 women and 43 men, ranging in age from 18 to 32, $Mdn = 23$) took part in the study. All were currently involved in a romantic relationship that had lasted more than 6 months.

Materials and procedure. The study was run in two sessions. The first session was conducted during a regular class period in which participants completed a Hebrew version of the ECR scale (see Study 1). Alphas were high for the 18 anxiety items (.91) and the 18 avoidance items (.89). A significant association was found between the two scores, $r(88) = .25, p < .05$.

Another research assistant, unaware of participants' ECR scores, conducted the second session 2-3 weeks later. This session was run on an individual basis and was presented as a study of social attitudes. In the first part of the session, participants were randomly assigned to one of three conditions. In the "*closeness-avoidance*" condition, participants ($n = 30$) were asked to think about the potential negative aspects of being close to their current romantic partner – things that make them reluctant to initiate closeness-enhancing interactions. They were then asked to write about these negative aspects and provide examples of closeness-enhancing interactions that resulted in negative outcomes. In the "*distance-avoidance*" condition, participants ($n = 30$) were asked to think about the negative aspects of being alone and achieving some distance from their partner – things they dislike about being alone that cause them not to be separated from their partner. Participants were then asked to write about these negative aspects and provide examples of unpleasant experiences of being alone. In the "*control*" condition, participants ($n = 30$) were asked to think about the negative aspects of being a university student – things that make them

reluctant to spend time and energy on academic activities. They were then asked to write about these negative aspects and provide examples of unpleasant academic experiences. No participant seemed to have trouble responding to the probes, and no significant differences in ECR scores were found between the three conditions.

Following these experimental procedures, all participants performed a shortened 42-trial version of the approach-avoidance task used in Study 1. In this version, the target words included only the negative words from Study 1: seven negative closeness words, seven negative distance words, and seven negative attachment-irrelevant words (each presented twice). In addition, participants performed only the pull (approach) block of the task. On each trial, participants were presented with one of the 21 negative words and were asked to pull a lever back toward themselves (an approach response) as soon as they recognized the word.

For each participant, we dropped incorrect responses and outlier RTs (lower than 300 ms or higher than 1400 ms) from the analyses. We then computed three RT scores: (a) average RT for pull responses to negative closeness words, (b) average RT for pull responses to negative distance words, and (c) average RT for pull responses to negative attachment-irrelevant words. This left each participant with three scores reflecting the time taken to make an approach response to negative words related to closeness, distance, and attachment-irrelevant issues.

Results and Discussion

Data were analyzed with the same kind of two-step hierarchical regression analyses described in Study 3. Two contrast variables were created, one contrasting the closeness-avoidance condition (1) with the control condition (-1), and the other contrasting the distance-avoidance condition (1) with the control condition (-1).

The regression analysis performed on RTs for responses to negative attachment-irrelevant words yielded no significant main effects or interactions (see Table 5). However, the regression performed on RTs for pull (approach) responses to negative distance words yielded a significant main effect of attachment anxiety (see Table 5): The higher the attachment anxiety, the faster the

approach responses to negative distance words. No other main effects or interactions were significant (see Table 5).

The regression analysis performed on RTs for responses to negative closeness words yielded a significant main effect for avoidant attachment (see Table 5): The higher the avoidance score, the faster the approach responses to closeness words. In addition, the interaction between attachment anxiety and the closeness-avoidance condition was significant (see Table 5). No other effects were significant. Simple slope analyses revealed a significant association between attachment anxiety and faster approach responses to closeness words in the closeness-avoidance condition, $\beta = -.51, p < .01$, but not in the control condition, $\beta = .17$. Additional slope analyses revealed that asking participants to think about the negative aspects of being close to their romantic partner paradoxically led to faster approach to closeness words when the value of attachment anxiety was 1 SD above the mean, $\beta = -.43, p < .01$. However, when attachment anxiety was 1 SD below the mean, thinking about the negative aspects of relational closeness led to slower approach responses to closeness words, $\beta = .25, p < .01$.

The findings fit with our predictions and indicate that the experimental activation of avoidance tendencies toward relational closeness paradoxically strengthened attachment-anxious participants' implicit approach tendencies toward closeness. For participants scoring relatively low on attachment anxiety, being asked to think about the negative aspects of being close to their romantic partner reduced the implicit activation of approach tendencies toward closeness. As in Study 5, this paradoxical reaction of anxiously attached participants was not evident in reactions to the experimental activation of avoidance tendencies toward relational distance.

General Discussion

These studies provide a wealth of new evidence concerning the theoretical link between attachment anxiety and relational ambivalence, and they deepen our understanding of the motives and attitudes of attachment-anxious people in interpersonal settings. Studies 1 and 2 indicate that approach and avoidance tendencies toward closeness to a romantic partner (motivational ambivalence) coexist in attachment-anxious people's self-reports and in their

responses to an implicit measure of ambivalence. Studies 1 and 3 indicate that anxiously attached people tend to hold simultaneous positive and negative views of their romantic partner (attitudinal ambivalence) at both conscious and implicit levels. Study 4 indicates that attachment-anxious people react with heightened ambivalence to relational contexts (e.g., thoughts about relationship initiation) that typically activate approach tendencies or to relational contexts (e.g., thoughts about separation) that typically activate avoidance tendencies. Individuals who score relatively high on attachment anxiety also react to relational situations that activate approach or avoidance tendencies with paradoxical intensification of the opposing tendency (Studies 5 and 6). In addition, unexpectedly, Study 4 turned up signs of implicit ambivalence toward interpersonal distance among avoidant participants, mainly after thinking about separation.

Overall, the findings indicate that attachment anxiety is related to motivational ambivalence toward closeness to a romantic partner and to attitudinal ambivalence toward the partner. They also indicate that avoidant people, although holding explicit positive attitudes toward interpersonal distance, react to signs of separation with heightened implicit ambivalence toward distance concepts, suggesting that they are not fully comfortable with being separated.

The link between attachment anxiety and relational ambivalence was evident in both explicit and implicit measures of motivational and attitudinal ambivalence. This implies that attachment-anxious people's explicit reporting of ambivalent views of a romantic partner or ambivalent approach-avoidance tendencies toward closeness to the partner is not a mere reflection of self-presentational strategies or other biases inherent in self-report measures. Rather, they reflect anxious people's actual perceptions and motives in relational settings. They seem to possess highly accessible yet preconscious approach and avoidance goals with respect to relational closeness, which biases their motor responses in a push-pull task and their explicit reports of ambivalence. In addition, they seem to have ready cognitive access to both positive and negative aspects of their romantic partner, which affects their lexical-decision responses to the partner's traits and their explicit evaluations of those traits. These processes in the attachment-anxious mind are specifically focused, as attachment theory leads us to expect, on

relational issues; they are not due to a general propensity for ambivalence. Attachment anxiety was not significantly associated with general ambivalence toward non-relational issues.

Study 1 also indicated that, although fear of invalidity was associated with both attachment anxiety and relational ambivalence, this fear could not explain attachment-anxious people's relational ambivalence. That is, relational ambivalence was not a result of attachment-anxious people's self-doubts, self-criticism, or fear of making mistakes. It is still possible, however, that attachment-anxious people's negative models of self contribute indirectly to relational ambivalence. These negative models emphasize personal weaknesses and vulnerabilities and increase the need for support and protection from a relationship partner. At the same time, they also amplify a person's doubts about his or her value and lovability, thereby strengthening fear of rejection and contributing to relational ambivalence. Still, it is the simultaneous activation of antagonistic goals and attitudes that most centrally characterizes attachment-anxious people's relational ambivalence. Future studies should be designed to experimentally increase the mental accessibility of negative models of self (e.g., by causing people to fail in an achievement-oriented task) and see whether this manipulation increases attachment-anxious people's motivational and attitudinal ambivalence.

Attachment-anxious people's relational ambivalence was not explained by relationship dissatisfaction (in Studies 1-3). Although dissatisfaction was significantly associated with both attachment anxiety and relational ambivalence, heightened motivational and attitudinal ambivalence was not a byproduct of attachment-anxious people's dissatisfaction with their relationships. In fact, both motivational ambivalence toward relational closeness and attitudinal ambivalence toward a romantic partner might be one cause of relationship dissatisfaction. The association between relational ambivalence and relationship dissatisfaction may help to explain Davila and Bradbury's (2001) finding that attachment anxiety measured within the first 6 months of marriage prospectively predicted relationship dissatisfaction combined with staying in an unsatisfying marriage for at least four more years. It is possible that attachment-anxious people's relational ambivalence, which depends on both overdependence on a relationship partner and

fears of abandonment and separation, encourages them to maintain a relationship at almost any cost, even if it means being unhappy in the relationship. Prospective longitudinal studies are needed to examine the role of relational ambivalence in relationship quality and stability.

Studies 4-6 revealed some of the relationship contexts that trigger attachment-anxious people's ambivalence. Participants in those studies who scored relatively high on attachment anxiety were particularly responsive to thoughts about separation from a romantic partner and about the negative aspects of relational closeness. In these situations, which typically foster fears of separation and abandonment, and which activate avoidance or self-protection goals, attachment-anxious people exhibited a paradoxical preconscious tendency to approach relational closeness (Study 6), along with heightened signs of implicit motivational ambivalence toward closeness (Study 4). For these people, experimental manipulations that made negative aspects of a relationship salient also seemed to activate preconscious thoughts of its positive aspects.

This kind of ambivalence might explain Aron, Aron, and Allen's (1998) finding of more frequent unrequited or unreciprocated love among people with an anxious attachment style. It might also explain Kirkpatrick and Hazan's (1994) discovery that attachment-anxious people tended to break up and then get back together again with the same person multiple times. Davis, Shaver, and Vernon (2003) also found that more anxious study participants were more likely to feel sexually attracted to their former partner (e.g., when meeting to exchange custody of their children) and more likely to become sexually reinvolved. Similarly, Henderson, Bartholomew, and Dutton (1997) found that abused women who scored higher on attachment anxiety were more likely to remain sexually and emotionally involved with their abusive former partner following separations.

In Studies 4-5, we made salient the positive aspects of interpersonal interactions and relationships by manipulating thoughts about the initiation of a loving relationship and thoughts about the positive aspects of relational closeness. In these situations, which typically foster approach tendencies toward close relationships and actions aimed at maintaining or increasing closeness, intimacy, and interdependence, attachment-anxious participants exhibited a

paradoxical activation of a preconscious tendency to avoid relational closeness (Study 5) and heightened implicit ambivalence toward closeness (Studies 4). Due to their negative attachment history, low self-esteem, and doubts about their own lovability, attachment-anxious people may be uncertain about the actual prospects for a promising new relationship or about the desirable aspects of closeness. This may make them vigilant for indications of a partner's disaffection, disapproval, or criticism, which can then amplify their worries and anxieties.

Attachment-anxious people's motivational ambivalence in positive relational contexts reminds us of Mikulincer and Sheffi's (2000) discoveries concerning the effects of a positive mood induction on creative problem solving. In their study, attachment-anxious participants reacted to positive experiences (retrieving a happy memory or watching a brief comedy film) with *impaired* creative problem solving, just the opposite of what occurred with secure individuals and the same as what had happened in previous studies following negative mood inductions. As in the present studies, attachment-anxious people seemed to turn a positive signal into a harbinger of danger. Perhaps they initially experienced a positive state, as intended by the experimenters, but then were reminded of the downside of previous experiences that began positively and ended painfully. Once attuned to these negative memories, anxious individuals may suffer from a spread of negative associations that interferes with creativity (in Mikulincer and Sheffi's studies) and heightens relational ambivalence (in the studies reported here).

In Study 1, attachment anxiety was associated with implicit ambivalence toward both closeness and distance concepts. However, participants performed the push-pull task in that study without being focused on a specific romantic relationship or relational context. In Studies 2-6, when participants' attention was focused on a specific relational context, attachment anxiety was more strongly and consistently associated with motivational ambivalence toward closeness than toward distance. That is, attachment-anxious people's ambivalence in romantic relationships seems to be more focused on desires for proximity and support and fears of rejection and separation rather than on desires for solitude and independence and fears of loneliness and isolation. This is not surprising, because attachment-anxious people tend to overemphasize their

dependence on a partner's availability and responsiveness (Hazan & Shaver, 1994; Shaver & Mikulincer, 2002) and worry about gaining love and support and avoiding rejection and separation. They seem to be less interested in the potentially positive aspects of autonomy and solitude. Due to their sense of vulnerability and helplessness, attachment-anxious people may experience distance from attachment figures as dangerous and therefore focus mainly on the negative aspects of being alone (Mikulincer, Shaver, 2007).

Taken together, the studies reported here contribute greatly to attachment theory and research. First, they reveal, perhaps for the first time, the implicit motivational conflicts that plague attachment-anxious individuals. Moreover, they provide a parsimonious explanation – relational ambivalence – for attachment-anxious people's paradoxical and puzzling thoughts and behaviors. For example, relational ambivalence may underlie the well-known tendencies of attachment-anxious people to ruminate obsessively about how to react in social situations and relationships (e.g., Stackert & Bursik, 2003), their lack of relational intimacy and commitment despite strong wishes for closeness (e.g., Mikulincer & Erev, 1991), their reluctance to seek a partner's support despite strong needs for reassurance and comfort (e.g., Vogel & Wei, 2005), and their tendency to behave differently toward a partner when they are distressed versus when their distress has abated (Rholes, Simpson, & Orina, 1999).

Our findings can also fit well with Graham and Clark's (2006) "Jekyll-and-Hyde"-ing effect, whereby people with low self-esteem or an anxious attachment orientation tend to hold dichotomous rather than integrated views of partners in memory. They tend to villainize or idealize people rather than integrating their knowledge of them into more realistic and moderate, cohesive views. Our conception of anxious individuals' ambivalence, holding both approach/avoidance and negative/positive attitudes toward relationships and partners, seems similar to this idea.

Studies 4 also revealed that thinking about separation from a romantic partner heightened avoidant participants' implicit ambivalence regarding distance concepts. This fits with the theoretical view that avoidant people's nonchalance and self-reliance in the face of rejection,

separation, and abandonment (Shaver & Hazan, 1993) are part of a defensive façade that masks implicit fears and worries about being alone. Their ambivalence may occur mainly at a preconscious level and be hidden from consciousness by repression or suppression of worries about insecurity and loneliness. This interpretation is compatible with results obtained by Mikulincer et al. (2004) in experiments that imposed a cognitive load on avoidant participants, revealing underlying concerns that were similar to those of anxious participants.

It would be interesting to explore further the ways in which avoidant people's defensive and inhibitory processes work. It should be possible either to temporarily reduce their fears of loneliness and isolation at a preconscious level, temporarily block mental access to these implicit fears when they arise, or see what happens when they collapse temporarily under a cognitive load. We know from previous studies that avoidant individuals can and often do suppress thoughts of separations and breakups (e.g., Fraley & Shaver, 1997) and that this defensive strategy sometimes collapses under pressure, whether imposed by experimental manipulations (Mikulincer et al., 2004) or by challenges in real life (e.g., Berant, Mikulincer, & Florian, 2001). This is an important issue not only for attachment theory, but also for any contemporary theoretical approach to unconscious motivation (Shaver & Mikulincer, 2005).

Before closing, we should acknowledge some possible limitations of the studies presented here. Whereas reaction times in the push-pull task may reflect simple word-recognition latencies, findings of Study 4 concerning participants' response latencies in a word-recognition task greatly weaken this concern. Although attachment-anxious people did recognize attachment-related words faster than non-anxious people did, this difference did not explain their implicit ambivalence in the push-pull task. But another alternative interpretation was not tested in our studies: A person's tendency to avoid confrontation with relationship issues might cause him or her to end experimental trials involving relationship issues as quickly as possible, by moving the push-pull lever quickly. If so, our findings would not indicate ambivalence but rather a tendency to reduce exposure to relationship-related words. We cannot completely rule out this possibility, but the fact that such motor responses were not systematically related to avoidant attachment

reduces its likelihood. (If anyone is eager to reduce exposure to close-relationship issues, it should be the avoidant rather than the anxious person.) Also, the general match between our results for explicit and implicit measures adds to the viability of our interpretation of the findings for the push-pull measure of ambivalence. Still, it would be worthwhile in future research to replicate our findings with other implicit measures of relational ambivalence, such as the well-known Implicit Association Test (as used in attachment research by Zayas & Shoda, 2005).

Future studies might also deal with questions concerning when relational ambivalence is typically aroused: Is it mainly a response to specific relationship situations, or is it a continual struggle between conflicting motives and attitudes. It would be interesting to learn what happens when thoughts of a particular attachment figure, such as one's mother or one's mate, are contextually activated: Does the mere thought (implicit or explicit) of such a person create simultaneous activation of approach and avoidance goals in anxiously attached individuals? We should also note that our manipulations of relational context were symbolic (based on imagining or thinking about relational experiences). Future research should examine relational ambivalence in real-life situations involving participants' actual close relationship partners.

Despite our studies' potential lacunae, we view them as important steps in understanding relational goals and attitudes associated with adult attachment insecurities. We managed, in the laboratory, to activate and assess implicit and explicit conflicts among goals and among attitudes. We mapped several aspects of the ambivalence associated with anxious attachment. At the same time we opened up several new issues for further study, which will help us to understand motivational conflicts in close relationships and, more generally, the psychodynamics of the multi-layered social mind.

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Footnotes

1. Across the six studies reported here, including gender as an additional predictor variable in the analyses did not notably change the reported findings. There were no significant or consistent gender differences across studies and none of the interactions between gender and the other predictor variables was significant. We therefore do not report analyses involving gender.
2. Across the six studies, no significant effects of current involvement in a romantic relationship or length of relationship were found. These variables did not significantly interact with the other predictor variables, and their inclusion in the analyses did not notably change the reported findings. We have therefore left them out of analyses reported here.
3. No significant order effect was found in any of the studies. Order did not significantly interact with the other predictor variables, and its inclusion as an additional factor in the analyses did not notably change the reported findings.
4. Across the six studies, the use of other common cutoff criteria (e.g., 3 SDs from the mean) did not change the reported results. The average percentage of trials on which outlier RTs were recorded was lower than 2%, and these trials were randomly distributed across word categories.
5. Across the studies, similar findings were obtained when statistical analyses were performed separately on ambivalence for positive words and ambivalence for negative words in each of the thematic categories (closeness, distance, and attachment-irrelevant).
6. Across the studies, there were no significant interactions between attachment anxiety and avoidance and no significant 3-way interactions between experimental manipulations and the attachment variables.
7. Across Studies 3-6, similar findings were obtained using the standard scheme of assigning zero to the reference group and 1 to the experimental group instead of using the +1 and -1 contrast codes.

8. In Studies 4-6, we did not measure explicit ambivalence using the AIR scale because the scale measures global attitudes toward a relationship partner and was expected to be less sensitive than the push-pull measure to effects of experimental manipulations. Moreover, using this explicit measure of ambivalence following the experimental manipulations might have raised suspicions about the purpose of the study and influenced the findings.
9. Two psychology graduate students independently read participants' open-ended responses and rated (a) the extent to which a participant disclosed his or her personal feelings and thoughts, (b) the positivity of the emotions disclosed, and (c) the richness of the written descriptions. Ratings were made using 7-point scales, and Pearson correlations revealed adequate interjudge reliabilities, $r_s > .79$. These three ratings (averaged across the two judges) were not significantly associated with attachment anxiety or avoidance in the total sample or in each experimental condition considered separately.
10. In Studies 5-6, two psychology graduate students independently read participants' open-ended responses and rated (a) the positivity of the aspects a participant chose and (b) the extent to which the specific instances a participant described were good examples of the aspects chosen. Ratings were made on 7-point scales, and Pearson correlations revealed adequate interjudge reliabilities, $r_s > .86$. These two ratings (averaged across the two judges) were not significantly associated with attachment anxiety or avoidance in either of the studies in the total sample or in each experimental condition considered separately.

Table 1

Standardized Regression Coefficients for Explicit and Implicit Ambivalence Scores as a Function of Attachment Anxiety and Avoidance Scores (Studies 1 and 2)

Predicted variables	Anxious Attachment	Avoidant Attachment
Study 1		
AIR score	.49**	.06
Explicit general ambivalence	.08	-.01
Implicit ambivalence toward closeness	.28**	.12
Implicit ambivalence toward distance	.24*	.10
Implicit ambivalence toward attachment-irrelevant issues	.02	.06
Study 2		
Explicit ambivalence toward closeness	.35**	.13
Explicit ambivalence toward distance	.13	.17
Explicit general ambivalence	.08	-.12
Implicit ambivalence toward closeness	.43**	-.06
Implicit ambivalence toward distance	.16	.05
Implicit ambivalence toward attachment-irrelevant issues	.06	.16

Notes: * $p < .05$; ** $p < .01$

Table 2

Standardized Regression Coefficients for Implicit Attitudinal Ambivalence Scores as a Function of Attachment Anxiety and Avoidance Scores and Priming Condition (Study 3)

Effects	Implicit ambivalence toward	Implicit ambivalence toward
	partner-relevant traits	partner-irrelevant traits
Anxious attachment	.25*	.06
Avoidant attachment	.04	-.08
Priming condition	.02	.17
Anxiety x priming	.22*	.11
Avoidance x priming	-.04	-.08

Notes: * $p < .05$

Table 3

Standardized Regression Coefficients for Implicit Relational Ambivalence Scores as a Function of Attachment Anxiety and Avoidance Scores and Priming Manipulations (Study 4)

Effects	Implicit ambivalence toward closeness	Implicit ambivalence toward distance
Anxious attachment	.24*	.15
Avoidant attachment	.03	.10
Relationship initiation	.19	.16
Separation	.15	.14
Anxiety x relationship initiation	.28*	.14
Avoidance x relationship initiation	.01	.08
Anxiety x separation	.31*	.11
Avoidance x separation	.02	.32*

Notes: * $p < .05$

Table 4

Standardized Regression Coefficients for RTs for Push (Avoidance) Responses as a Function of Attachment Anxiety and Avoidance Scores and Priming Manipulations (Study 5)

Effects	Push responses to positive attachment- irrelevant words	Push responses to positive distance words	Push responses to positive closeness words
Anxious attachment	.09	-.01	.37**
Avoidant attachment	-.13	.23*	.04
Closeness approach	-.10	.05	-.12
Distance approach	.09	.29*	-.03
Anxiety x closeness approach	-.01	.10	-.36**
Avoidance x closeness approach	.03	.04	.17
Anxiety x distance approach	-.20	-.02	-.08
Avoidance x distance approach	-.14	-.20	-.11

Notes: * $p < .05$; ** $p < .01$

Table 5

Standardized Regression Coefficients for RTs for Pull (Approach) Responses as a Function of Attachment Anxiety and Avoidance Scores and Priming Manipulations (Study 6)

Effects	Pull responses to negative attachment- irrelevant words	Pull responses to negative distance words	Pull responses to negative closeness words
Anxious attachment	.03	-.34**	-.17
Avoidant attachment	-.16	-.04	-.23*
Closeness approach	-.01	-.05	-.09
Distance approach	.01	.04	.03
Anxiety x closeness approach	.15	.17	-.34*
Avoidance x closeness approach	.08	.16	.15
Anxiety x distance approach	-.13	-.15	.04
Avoidance x distance approach	.12	.16	.06

Notes: * $p < .05$; ** $p < .01$