
Physical, Emotional, and Behavioral Reactions to Breaking Up: The Roles of Gender, Age, Emotional Involvement, and Attachment Style

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Associations between gender, age, emotional involvement, and attachment style and reactions to romantic relationship dissolution were studied in a survey of more than 5,000 Internet respondents. It was hypothesized that individual reactions to breakups would be congruent with characteristic attachment behaviors and affect-regulation strategies generally associated with attachment style. Attachment-related anxiety was associated with greater preoccupation with the lost partner, greater perseverance over the loss, more extreme physical and emotional distress, exaggerated attempts to re-establish the relationship, partner-related sexual motivation, angry and vengeful behavior, interference with exploratory activities, dysfunctional coping strategies, and disordered resolution. Attachment-related avoidance was weakly and negatively associated with most distress/proximity-seeking reactions to breakups and strongly and positively associated with avoidant and self-reliant coping strategies. Security (low scores on the anxiety and avoidance dimensions) was associated with social coping strategies (e.g., using friends and family as "safe havens"). Attachment insecurity, particularly anxiety, was associated with using drugs and alcohol to cope with loss.

Keywords: *breaking up; relationships; attachment style*

The dissolution of romantic relationships has been empirically associated with a variety of negative physical and emotional responses, ranging from anxiety, depression, psychopathology, loneliness, immune suppression, fatal and nonfatal physical illness or accidents, and decreased longevity to immediate death through suicide or homicide (see reviews in Gottman, 1994; Kiecolt-Glaser & Newton, 2001). Although the empirical associa-

tion of relationship dissolution with physical and emotional distress is well established, there have been few attempts to examine behavioral responses and fewer still to examine their unique links to individual-difference variables.

The primary goal of the present research was to examine the relationship of adult attachment style (Fraley & Shaver, 2000; Hazan & Shaver, 1987) to a constellation of reactions to breaking up that are theoretically and empirically linked to attachment anxiety and/or avoidance. To date, there have been relatively few studies of attachment style and reactions to relationship dissolution (e.g., Feeney & Noller, 1992; Simpson, 1990; Sprecher, Felmlee, Metts, Fehr, & Vanni, 1998). Although informative, these studies have focused mostly on degree of distress rather than theoretically predicted specific emotional and behavioral reactions. Our research was designed to examine three primary dysfunctional reactions to dissolution: (a) extreme distress and preoccupation with the lost partner, (b) ambivalent acting out (strenuous needs and attempts to reestablish the relationship, including sexual contact, combined with angry, hostile, or violent behavior), and (c) dysfunctional coping and lack of resolution of the loss.

Of these reactions, we are particularly interested in the violent storm of ambivalent acting out that we expect

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to be associated with attachment anxiety. This pattern is of particular interest because of the extremity of the bereft person's attempts to maintain or reestablish the relationship while simultaneously engaging in apparently contradictory angry and hostile behavior toward the partner, despite the contradictory and self-defeating effects of such behaviors. The extremes of this ambivalent pattern can be seen, for example, in the murder of romantic partners, especially of women, which occurs primarily under conditions in which the victim is leaving or threatening to leave a relationship with a partner who wants to keep the relationship intact (e.g., Bixenstine, 1999; Walker, 1979; Wilson & Daly, 1993).

Attachment theory provides a theoretical basis for predicting this ambivalent mixture of hostility and desire as well as other specific emotional and behavioral responses. Thus, we will first provide a brief overview of attachment theory and research and then turn to their implications for emotion regulation and behavior following relationship dissolution.

Attachment Theory and the Assessment of Attachment Style

Attachment theory was introduced by Bowlby (1969/1982, 1973, 1980) in a well-known series of volumes titled *Attachment and Loss*. Empirical tests of the theory were initially conducted by Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978) in studies of infant-mother attachment and were later extended to the domain of romantic and marital relationships by Hazan and Shaver (1987). According to the theory, evolution has equipped human beings with a number of behavioral systems that increase the likelihood of survival and reproductive success. Among these behavioral systems are an attachment system, an exploratory system, a sexual mating system, and a caregiving system.

Beginning in infancy, most people form emotional attachments to one or more caregivers on whom they rely for protection, comfort, and support. A security-enhancing caregiver is one who provides a "safe haven" in times of danger or stress and a "secure base" of operations when exploration is undertaken. If a person's attachment figures are sufficiently sensitive and responsive, she or he will develop what the theory refers to as positive internal working models of self and relationship partners. These models have been shown to provide a foundation for healthy peer relations and personal competence (see review by Weinfield, Sroufe, Egeland, & Carlson, 1999). If one or more attachment figures are generally insensitive or unresponsive, the individual who is attached to them develops negative internal working models of self, relationship partners, or both. Different patterns of insecure attachment can be identified based

on anxious or avoidant behaviors in close relationships, anxious or avoidant responses to self-report questionnaires, and conscious and unconscious anxious or avoidant responses in laboratory situations (see Feeney, 1999; Mikulincer & Florian, 2001; Shaver & Clark, 1994, for reviews).

In Ainsworth et al.'s (1978) early studies of the infant-mother relationship, three different patterns of attachment were delineated: secure, anxious (or anxious/ambivalent), and avoidant. Subsequent studies of both infant and adult attachment (e.g., Bartholomew & Horowitz, 1991; Main & Solomon, 1986) expanded the number of patterns to four, with the fourth pattern incorporating features of both anxiety and avoidance. In the domain of adult romantic and marital attachment, Bartholomew and Horowitz (1991) called the four patterns secure, preoccupied (with attachment), fearfully avoidant, and dismissively avoidant. These authors also showed that the four patterns could be arranged conceptually and empirically in a two-dimensional space. Secure and dismissing adults differ from preoccupied and fearful adults in having more positive models of self and being less dependent on partners' approval and less anxious about abandonment. Secure and preoccupied adults differ from both kinds of avoidant adults by being more interested in and comfortable with closeness, intimacy, and interdependence. Brennan, Clark, and Shaver (1998) constructed two highly reliable orthogonal scales to assess dimensions similar to Bartholomew's, which Brennan et al. called attachment-related anxiety and avoidance and that we used in the present research.

Attachment and Regulation of Distress

Theoretically, the attachment system is activated by any of three sources of distress: (a) threat to the person (e.g., hunger, physical danger), (b) threat to a relationship with an attachment figure (e.g., perceiving the figure as physically or psychologically unavailable), and (c) challenging situations that motivate the person to use an attachment figure as a secure base. When a person's attachment system is activated for any of these reasons, the person will attempt to alleviate distress in ways characteristic of his or her attachment style. The stronger the activation of the attachment system, the more extreme the characteristic behaviors are likely to be.

These characteristic differences in affect regulation are the bases of our hypotheses regarding attachment-style differences in reaction to relationship breakups. In brief, three primary strategies are associated with attachment style: (a) open, empathic communication and negotiation of one's needs and desires with the attachment figure (the secure strategy), (b) suppression of attachment-related distress combined with self-reliance

(the avoidant strategy), and (c) a coercive strategy (e.g., Crittenden, 1997) involving alternation between angry demands and rebukes and coy or flirtatious attempts to elicit what one needs from a partner (the anxious strategy). Each strategy is assumed to stem from past experiences with parents or other caregivers during childhood as well as later experiences with romantic partners.

The secure strategy. The secure strategy is believed to stem from past experiences indicating that open expression of needs elicits love and support. Generally, secure individuals enjoy greater communication skills and provide superior caregiving to others (see reviews by Feeney, 1999; George & Solomon, 1999). They are more likely to provide comfort to others in distress and to seek comfort from others when distressed themselves. Thus, in the context of relationship dissolution, we would expect secure individuals to express their feelings openly to their partner and to use friends and family as beneficial sources of comfort. They also should be better able to understand their partner's point of view regarding the breakup, which should allow them to respond in a less histrionic or angry fashion than less secure individuals.

The avoidant strategy. Theoretically, avoidant individuals have learned (a) that others are unlikely to satisfy their needs and (b) that open expressions of need may be ignored or punished. This is believed to be the reason for their unexpressive and self-reliant stance (see review by Fraley, Davis, & Shaver, 1998). In the context of breaking up, this characteristic affect-regulation strategy should be reflected in fewer emotional expressions of all kinds (including pleading, angry outbursts, and seeking social support), greater emotional avoidance (including avoiding the partner and staying clear of other reminders that could activate attachment needs), and greater self-reliance and use of nonsocial coping strategies (such as drinking and taking drugs).

The anxious strategy. Anxious or preoccupied individuals are thought to have learned what Crittenden (1992, 1997) termed a "coercive strategy" for eliciting care. According to Crittenden, this strategy is characteristic of children whose attachment figures are inconsistently sensitive and available, causing the children to believe that pleas and demands are necessary to get a caregiver's attention. In childhood, the coercive strategy includes erratic alternation between aggressive/threatening behavior (crying, screaming, throwing a tantrum) and coy/disarming behavior (e.g., glancing eye contact, an open-mouth smile with teeth covered, meek and innocent expressions, cocking the head to the side). To the extent that this analysis applies to anxious adults whose relationships are breaking up, both aggressive and coy or seductive behaviors may be employed in attempts to restore the relationship.

The Attachment Perspective on Loss

In his 1980 volume *Loss*, Bowlby developed an attachment-theoretical account of the process of grieving, including individual differences in grief reactions. He proposed that reactions to loss of an adult romantic partner parallel those of a child confronted with the prolonged or permanent loss of a primary attachment figure. These reactions can be viewed in terms of three rough, overlapping, and sometimes recurring phases.

Protest. The bereaved adult first exhibits forceful protest reactions, designed to deter the attachment figure's departure or reestablish contact. These can include overt reactions such as pleading, crying, anger, aggression, and searching and psychological reactions such as disbelief that the person is gone and sensing the person's invisible presence. Bowlby noted that such reactions, although seemingly inappropriate when a partner has died, make sense in evolutionary context (see also Archer, 1999) in that they tend to promote survival by assuring the proximity of infants to their caregivers. There may be no evolutionary provision for turning off the search process when an attachment figure leaves permanently. Thus, real or perceived threats to the availability of an attachment figure will activate such deeply ingrained patterns of response as to virtually compel the person to search for the lost figure and try to reestablish contact (Fraley & Shaver, 1999), even when success is unlikely or impossible, as when the partner has died.

Despair. Eventually, if protest behaviors repeatedly fail to establish contact with the attachment figure and the attached individual realizes that the person will never return, protest increasingly gives way to despair (depression, sadness, disorganization, and withdrawal). For both bereaved adults and children, this phase is characterized by disturbances of sleeping and eating, social withdrawal, profound loneliness, and intense sorrow (Fraley & Shaver, 1999). The degree of despair differs as a function of context (e.g., foreknowledge of the impending loss), degree of attachment to the partner, and individual differences in attachment style.

Detachment/reorganization/integration. In Bowlby's (1973) early theorizing, he referred to a final phase of detachment marked by apparent recovery and gradual renewal of interest in other activities and relationships. In later theorizing, Bowlby (1980) used the term "reorganization" to connote the reorganization of representations of self and lost attachment figure so that both a continuing (but altered) bond and adjustment to changed circumstances are possible. This notion is similar in some respects to other perspectives on loss or bereavement that emphasize the importance of meaning (e.g., see reviews in Neimeyer, 2001) and continuing bonds (Klas, Silverman, & Nickman, 1996). Extending this

analysis to the context of relationship dissolution, we can expect that a relatively secure person may come to believe that the relationship provided a learning experience, that the lost partner makes a better friend than lover, or that the loss enhanced personal strength.

Individual differences in "disordered mourning." Mourning may be disordered or disorganized such that either the duration of the protest and despair phases or the nature of behaviors during these phases becomes dysfunctional. Bowlby (1980) identified two disordered patterns of mourning, chronic mourning and absence of grief, that correspond roughly to the subsequent notions of anxious and avoidant attachment. The former pattern includes perseveration in the protest and/or despair stages of mourning and the latter involves rapid progression to the detachment phase. Those in chronic mourning are perpetually preoccupied with the lost partner and unable to function normally without him or her; those exhibiting absence of grief continue their normal everyday activities without conspicuous disruption or overt expressions of sorrow, anger, or distress.

HYPOTHESES

The preceding overview of attachment theory and research provides the basis for a series of hypotheses about behavior during and following romantic/marital relationship breakups. The first set of hypotheses concerns protest reactions and distress.

Protest and Distress Reactions

Research with children (e.g., Ainsworth et al., 1978) has identified the roots of the ambivalent storm of protest reactions, vacillating between desire for the lost partner and attempts to reestablish the relationship, on one hand, and seemingly contradictory angry and violent behaviors on the other. Ainsworth et al. noted this pattern among anxious/ambivalent children, who displayed the most extreme distress and protest reactions toward their parents in the Strange Situation test procedure, including indices of distress (such as crying), proximity seeking (such as pleading, clinging), and hostility/aggression toward the parent (which Bowlby, 1973, interpreted as retributive anger). Avoidant children, in contrast, were characterized by the least extreme reactions of these kinds, with secure children in between.

Although studies of reactions to relationship dissolution among adults have focused on greater distress reactions among anxious adults (e.g., Feeney & Noller, 1992; Fraley & Shaver, 1997; Simpson, 1990), the literature regarding loss through death has turned up some evidence of the association of attachment anxiety with the ambivalent bipolar reactions of pining for the relationship and being angry at the deceased partner (e.g.,

Bonnano, Notarius, Gunzerath, Keltner, & Horowitz, 1995).

Thus, we expect the extremity of both distress and protest reactions to be positively associated with attachment anxiety and negatively associated with attachment avoidance. These reactions should include indices of distress such as physical symptoms, emotional dysregulation, self-blame or depression, and protest reactions such as attempts to reestablish the relationship, sexual desire, and attempts to reinvolve the partner in sexual relations but also expressions of anger, blame, and hostility toward the partner. Furthermore, we expect the two contradictory poles of desire and hostility to be positively associated with one another.

Preoccupation/Exploration

A second set of hypotheses concerns excessive preoccupation with the attachment figure, which is theoretically associated with both attachment anxiety and avoidance. Constant attention to or thinking about the person and hypervigilance and sensitivity to cues regarding his or her availability and responsiveness tend to be positively associated with attachment anxiety and negatively associated with avoidance. For example, Mikulincer, Gillath, and Shaver (2002) found that the mind generally turns automatically to mental representations of attachment figures under conditions of threat. However, more anxious adults seem to have these representations active all the time, whereas more avoidant adults activate them only under conditions of threat that are unrelated to attachment (e.g., school failure) and actually inhibit attachment-related representations when the threat has to do with separation.

Thus, we expected relationship dissolution to cause greater preoccupation with thoughts of the lost partner among those higher in attachment-related anxiety. This greater preoccupation should in turn lead to differences in exploration of and engagement with the environment, just as anxious/ambivalent attachment in infancy interferes with exploratory activities (Ainsworth et al., 1978; Bowlby, 1973; Cassidy & Berlin, 1994).

Coping

Attachment style also is expected to affect the choice of coping strategies during and following relationship dissolution.

Social coping versus self-reliance. Coping with distress through seeking contact with attachment figures is a fundamental feature of attachment behavior. Securely attached infants express distress freely and both seek and accept comfort from caregivers (e.g., Ainsworth et al., 1978). In contrast, avoidant infants learn to suppress expression of distress and bids for support to avoid alienating potentially rejecting attachment figures and

instead tend to become compulsively self-reliant. Similarly, secure adults employ attachment figures (including friends) as safe havens under conditions of threat (e.g., Simpson, Rholes, & Nelligan, 1992), whereas avoidant adults are more likely to pull away from partners under threatening conditions. Thus, we expected attachment insecurity, particularly avoidance, to be negatively related to social coping strategies (such as talking to friends) and positively related to self-reliance.

Self-medication. Previous research has indicated that anxious and avoidant individuals are more likely than secure individuals to use alcohol and drugs as a way of regulating negative emotion (e.g., Brennan & Shaver, 1995; Cooper, Shaver, & Collins, 1998). Thus, we expect such dysfunctional methods also to be used specifically in the context of relationship dissolution.

Suppression/avoidance. Recall Mikulincer et al.'s (2002) finding that avoidance is related to suppression of thoughts of the attachment figure, particularly when relationship threat is salient. These findings suggest that avoidance will be related to attempts to suppress thoughts or reminders of the lost partner; for example, by avoiding encounters with their partner, dispensing with objects and other reminders of him or her, attempting to distract themselves through work or other activities, and perhaps, for a time, staying away from related and similarly painful situations such as seeking new relationship partners.

Resolution

Whether a partner is lost through death or dissolution, one must eventually go on with life. Individuals differ, however, in both the manner and speed with which they resolve losses.

Perseveration. Some people have extreme difficulty resolving losses at all and persist in feeling distress, continuing desire to reestablish the relationship, and preoccupation with the lost partner. Bereavement research has shown that anxious individuals experience the most distress over loss of a partner and recover less quickly, if at all (see Fraley & Shaver, 1999, for review). Thus, we expected that anxiety also would be associated with perseveration in desire for or attempts to recover a partner lost through relationship dissolution.

Integration. Several authors (e.g., Bowlby, 1980; Klas et al., 1996; Schuchter & Zisook, 1993) have proposed that successful resolution of bereavement (following the death of an attachment figure) does not necessarily involve detachment. Instead, an altered attachment bond may persist, such as caring for the deceased person and integrating thoughts, memories, and feelings about the relationship into one's self-concept and life while simultaneously being able to move on and live happily

again. Such a continuing bond may serve important adaptive functions, including continuity of identity, facilitation of coping, and comfort and support during the transition to a new life. This type of reorganization or integration should be more likely for relatively secure individuals. Thus, we expected those high in attachment anxiety or avoidance to less often successfully transform the relationship into a friendship or work relationship.

Disordered identity. Part of the integration process involves reorganizing and redefining one's conception of self without (or in different relationship to) the other person. Thus, we expected that to the extent integration is difficult for those high in attachment anxiety, they would report a greater sense of lack of identity following loss of a partner.

Replacement. Paradoxically, we also expected attachment-related anxiety to be associated with quicker attempts to replace the partner. Because anxious individuals experience more distress and continuing attachment to their lost partners, one might think they would be inhibited from entering other relationships. There is substantial evidence, however, that such people are highly motivated to be in a relationship and that they experience great distress when alone (e.g., Davis, 2000; Shaver & Clark, 1994). They may therefore jump into a new relationship while still distressed about the loss of a previous one. In contrast, as noted earlier, we expected avoidance to be associated with avoiding new relationships for some time after a breakup.

METHOD

Participants

Study participants were 1,868 male and 3,380 female respondents (and 7 with unidentified gender) ranging in age from 15 to 50 and distributed across the age decades as follows: teens (42.2%), 20s (43.2%), 30s (10.5%), 40 to 50 (4.1%). (We eliminated from the analyses all participants who were younger than 15 or older 50 years of age because age appeared to be related to many variables and there were too few respondents in the very young and older than 50 age ranges.) The majority was Caucasian (77.7%), followed in order of frequency by African American (6.2%), Other (6.5%), Asian (4.1%), Hispanic (4.3%), and American Indian (.9%); 91.3% were heterosexual, 2.6% were homosexual, and 6.5% were bisexual.

Procedure

Our survey questionnaire was posted on the Internet with the title "The Dating Survey IV: Breaking Up." Participants voluntarily followed links to the survey located in three subcategories of the Yahoo search engine. Invi-

tations to visit the Internet site were phrased as follows: "Dating Survey—Participate in the first study of Internet singles." Categories with links to the survey included Dating (under the parent category "Society and Culture/Relationships"), Tests and Experiments (under the parent category "Psychology/Research"), and Surveys (also under the parent category "Society and Culture/Relationships"). Participants were not actively solicited in any way. The survey included assurances that responses would be completely anonymous once transmitted. However, it also included a warning that (like all online communications) responses were not secure until transmitted.

The survey was introduced as follows:

The purpose of the survey is to learn more about what causes our relationships to break up, and how we cope with breakups when they occur. To examine this issue we will be asking you a few questions about yourself, and then some that address various issues regarding breaking up.

The questionnaire included the questions, "Are you alone at the computer?" and "Have you ever responded to this survey before?" Those who were not alone or who had responded before were excluded from the analyses, as were respondents who described a breakup that occurred more than 5 years ago, which might have been beyond the reach of clear memory.

Measures

Attachment style. Attachment-related anxiety and avoidance were measured by heterogeneous 9-item subsets of the two 18-item scales that compose the Experiences in Close Relationships measure (Brennan et al., 1998). Alphas for the two shortened scales were .90 and .85, only slightly lower than the usual reliabilities for the full scales. The correlation between the two scales, which are meant to tap orthogonal dimensions, was close to zero, $r(4,958) = -.004$.

Measures of reactions to breaking up. At the beginning of the breakups section of the survey, participants were instructed as follows:

To answer the questions in the following section, think of the breakup of your last relationship that had lasted for some time before the breakup or in which you were seriously emotionally involved. Do not refer to a relationship that broke up after a few dates.

Measures of the following reactions were included: protest reactions, including (a) wanting/trying to get the person back (11 items, $\alpha = .89$), (b) sexual arousal/desire (3 items, $\alpha = .74$), (c) anger/hostility/revenge (10 items, $\alpha = .84$), and (d) physically hurting partner (1

item); preoccupation (9 items, $\alpha = .91$); Interference with exploration (3 items, $\alpha = .70$); distress reactions, including (a) physical and emotional distress (15 items, $\alpha = .94$), (b) lost interest in sex (1 items), (c) self-blame (2 items, $\alpha = .63$), (d) guilt (2 items, $\alpha = .83$), and (e) partner blame (2 items, $\alpha = .81$); coping strategies, including (a) social coping (1 item), (b) self-reliant coping (1 item), (c) self-medication (increased use of drugs or alcohol—2 items, reported separately), (d) suppression/avoidance (3 items, $\alpha = .63$), and (e) moving or changing jobs to get away from the person; and resolution, including (a) perseveration in wanting the lost partner (3 items, $\alpha = .83$), (b) integration/redefinition of the person in different relationship (2 items, $\alpha = .57$), (c) lost sense of identity (1 item), (d) replacement of the lost partner (1 item), and (e) avoiding new relationships for a long time (1 item).

Respondents completed demographic questions first, followed by the attachment measures. Third, they indicated who had wanted to terminate the relationship (self, partner, or both), how long the relationship had lasted, how long ago the relationship broke up, and how emotionally involved they were with the person at the time of the breakup. This latter issue was raised because emotional involvement might be a somewhat independent contributor to intensity of reactions to the breakup. Measures of reactions to breaking up were completed last.

RESULTS

Before turning to tests of the hypotheses, it is important to examine potential associations between attachment style and pre-dissolution relationship variables. First, 2 (gender) \times 3 (who initiated the breakup) analyses of variance were conducted on the two attachment scales and the question assessing emotional involvement in the relationship. Gender was unrelated to attachment anxiety or avoidance. However, women were significantly more emotionally involved with their partners prior to the breakups, $M_s = 7.42, 7.25$; $F(1, 4918) = 32.03$, $p < .001$. Furthermore, those who initiated the breakup were lower in anxiety, $M_s = 3.92, 4.07, 4.69$; $F(2, 4774) = 156.83$, $p < .001$, and emotional involvement, $M_s = 6.95, 7.12, 7.80$; $F(2, 4918) = 140.22$, $p < .001$, and higher in avoidance, $M_s = 3.82, 3.71, 3.59$; $F(2, 4918) = 13.77$, $p < .001$, than those who mutually initiated the breakup or whose partners initiated the breakup.

Anxiety was positively related to emotional involvement at the time of the breakup, $r(5,015) = .17$, $p < .001$, and negatively related, although minimally, to the amount of time in the relationship, time since the breakup, and age, $r_s(5,020-5,065) = -.06, -.04, -.07$, $p_s < .001$.

In contrast, avoidance was negatively related to emotional involvement at the time of the breakup, $r(5,074) = -.22, p < .001$, and positively, although only weakly, related to age, $r(5,124) = .06, p < .001$. Finally, emotional involvement was positively related to time in the relationship prior to breaking up, $r(5,152) = .19, p < .001$, and less so, to age $r(5,199) = .07, p < .001$.

Tests of Hypotheses

Each reaction-to-breakup measure was subjected to regression analyses in which independent variables were entered in three blocks. The first block included age, gender, time since breakup, person who initiated the breakup, and emotional involvement in the relationship. Measures of anxiety and avoidance were entered in the second block and all two-way interactions in the third. Time since breakup interacted with effects of anxiety and/or avoidance for most analyses such that the effects were slightly larger for more recent breakups. However, comparing those who had broken up within the last 3 months to the full sample, effects of anxiety or avoidance were neither reduced to insignificance nor inflated to significance, and regression coefficients changed by .03 or less. Thus, time since breakup was dropped from further analyses to simplify presentation of the results.

Results are presented in Tables 1 through 3. Beta coefficients and significance levels for main effects as well as tests of significance for the overall regression equations are included in each table—for the overall sample and for both partner-initiated and self-initiated breakups. Results for mutual breakups are not reported separately.

There were a number of small but significant interactions where effect sizes were modified by a second variable. These are not reported in the text except where the effects of anxiety or avoidance are reduced to insignificance. We also will not report effects of age or gender; they are available in the tables but were neither predicted nor relevant to our hypotheses.

DISTRESS

We expected the degree of distress experienced to be a function of emotional involvement at the time of the breakup and anxiety. Table 1 summarizes the regression analyses for four forms of distress: physical/emotional distress, lost interest in sex, self-blame, and guilt. An index of partner blame is included so that it can be contrasted with the self-blame measure.

As predicted, emotional involvement was significantly associated with all indices of distress (β s ranged from .03 to .34, p s ranged from less than .05 to less than .001), although the relationship was strongest for physical/emotional distress and quite small for the index of self-blame (see Table 1). Emotional involvement also was

associated with partner blame, $\beta = .09, p < .001$. Those who initiated the breakup felt less distress, $\beta = .25, p < .001$, but more guilt, $\beta = -.28, p < .001$, than those whose partners initiated the breakup. As expected, attachment-related anxiety was significantly associated with all indices of distress, β s = .11-.34, all p s < .001, and with partner blame, $\beta = .09, p < .001$. There were also small but significant associations between attachment avoidance and both self- and partner blame such that avoidance was associated with greater self-blame, $\beta = .10$, and less partner blame, $\beta = -.08$.

PROTEST REACTIONS

The fifth through eighth sections of Table 1 summarize regression coefficients for the four protest variables. As expected, both emotional involvement, β s = .26, .11, .10, .04, p s < .001, and attachment anxiety, β s = .20, .18, .20, .06, p s < .001, were associated with the two proximity-seeking variables of wanting/trying and sexual arousal and the two hostile indices of anger/hostility/revenge and physically hurting. Similar patterns were obtained for both partner-initiated and self-initiated breakups (see Table 1). The strongest associations were with wanting and attempting to regain the lost partner, whereas the weakest associations were with reports of physically hurting the lost partner, which was unusual in this sample (see below).

Two gender differences are of interest. First, women were less likely, $\beta = -.14, p < .001$, to report sexual arousal/desire. However, women were more likely to report anger/hostility, $\beta = .11, p < .001$, and violence (among those whose partners initiated the breakup, $\beta = .05, p < .05$).

Because violence was an extremely low-base-rate behavior in our sample, we performed a separate analysis to examine differences in anxiety and avoidance levels among those who reported violence and those who did not. The 9-point ratings of whether physically hurt him/her was *not at all true* to *extremely true* was recoded such that *not at all true* was coded as 0 and all other responses were coded as 1. Then, 2 (physical violence, i.e., hurt or didn't hurt) \times 3 (who initiated the breakup) analyses of variance, with anxiety and avoidance as dependent variables, were conducted.

As expected, attachment anxiety was higher among those who hurt their partners than among those who did not, M s = 4.53 (yes) and 4.18 (no), $F(1, 4652) = 56.37, p < .001$. The interaction of violence with who initiated the breakup was not significant, indicating that regardless of how the breakup was initiated, those who were physically violent with their partners were higher in attachment anxiety than those who were not. Avoidance did not differ between those who did and did not hurt their partners.

TABLE 1: Distress/Protest Reactions to Breaking Up: Regression Coefficients for Total, Partner-Initiated Breakup, and Self-Initiated Breakup Samples

Type of Reaction	Gender	Age	Who Initiated	Emotional Involvement	Anxiety	Avoidance
Distress reactions						
Physical/emotional distress	-.01	-.01	.25***	.34***	.34***	.03**
Partner-initiated	.01	.00		.37***	.41***	-.01
Self-initiated	-.01	.02		.38***	.32***	.05*
Lost interest in sex	.06***	.07***	.13***	.21***	.11***	.10***
Partner-initiated	.04	.08**		.19***	.13***	.09***
Self-initiated	.08**	.11***		.21***	.05*	.09**
Self-blame	-.11***	-.10***	-.06***	.03*	.11***	.10***
Partner-initiated	-.07***	-.08***		.08***	.18***	.09***
Self-initiated	-.13***	-.13***		-.02	.01	.08***
Guilt	-.11***	-.06***	-.28***	.17***	.14***	.01
Partner-initiated	-.15***	-.08***		.13***	.18***	.04
Self-initiated	-.05	-.06*		.19***	.09***	-.03
Partner blame	.09***	.15***	-.03	.09***	.09***	-.08***
Partner-initiated	.09***	.15***		.03	.02	-.08***
Self-initiated	.07**	.15***		.12***	.09***	-.08***
Protest reactions						
Want/try to get back	-.03	-.10***	.38***	.26***	.20***	.01
Partner-initiated	.01	-.10***		.30***	.29***	-.03
Self-initiated	-.07**	-.10***		.31***	.12***	.03
Sexual arousal	-.14***	-.07***	.14***	.11***	.18***	.05*
Partner-initiated	-.07**	-.05		.06*	.22***	-.01
Self-initiated	-.20***	-.05		.18***	.12***	.09***
Anger/hostility/revenge	.11***	-.02	.06***	.10***	.20***	.02
Partner-initiated	.14***	-.00		.09***	.17***	.05*
Self-initiated	.08***	-.02		.11***	.19***	.00
Physically hurt	.02	-.01	-.02	.04*	.06***	.02
Partner-initiated	.05*	.02		.01	.09***	.01
Self-initiated	.02	-.03		.06*	.04	.03
Preoccupation	-.03*	-.02	.33***	.37***	.27***	.08***
Partner-initiated	.00	-.03		.38***	.36***	.03
Self-initiated	-.04	.02		.44***	.23***	.12***
Exploration/interference	-.03*	-.04**	.14***	.25***	.20***	.00
Partner-initiated	-.02	-.05*		.23***	.21***	-.02
Self-initiated	-.01	-.02		.27***	.19***	.01

NOTE: Men were scored as 1, women as 2. Initiation of breakups was scored as 1 (self), 2 (both), and 3 (partner). *N*s = 4484-4889 (total), 2018-2175 (partner-initiated), and 1682-1838 (self-initiated). For the variables of sexual arousal and lost sexual interest, respondents were selected based on having had a relationship involving sexual intercourse. *Distress reactions*. Significance levels for the regression equations were as follows: *F*(6, 3258-4883) = 523.90, 62.91, 31.92, 80.19, 40.31, *p*s < .001 (total); *F*(5, 1458-2170) = 206.60, 21.40, 26.55, 34.03, 13.48, *p*s < .001 (partner-initiated); *F*(5, 1248-1833) = 122.90, 19.32, 13.46, 19.19, 21.73, *p*s < .001 (self-initiated). *Protest reactions*. Significance levels for the regression equations were as follows: *F*(6, 3228-4545) = 429.15, 299.75, 60.76, 4.59, 429.15, 159.52, *p*s < .001 (total); *F*(5, 1436-2056) = 109.83, 97.74, 26.54, 4.12, 177.07, 52.01, *p*s < .001 (partner-initiated); *F*(5, 1234-1692) = 46.07, 21.93, 22.71, 2.48, 117.89, 45.97, *p*s < .001, except for the third from last analysis, where *p* = .03 (self-initiated).

p* < .05. *p* < .01. ****p* < .001.

ASSOCIATION BETWEEN DESIRE AND ANGER/HOSTILITY

Although desire for the relationship to continue and extreme anger/hostility toward the partner might seem logically incompatible, we expected them to go hand in hand, as explained by Bowlby (1973) in *Attachment and loss: Separation, Anxiety, and Anger*. To examine this hypothesis, we first examined the zero-order correlations between the four protest variables. All proved to be significantly positive (*r*s = 3814-4775) and ranged from .07 to .48, all *p*s < .001). The correlations between want-

ing/trying to get the person back and sexual arousal (.47), anger/hostility/revenge (.21), and physical violence (.11) were all significant. Similarly, those between hostility/revenge and sexual arousal (.11) and physical violence (.30) were significant. The relationship between sexual arousal and physical violence was small (.07).

Second, a regression analysis was performed to examine the relationship of gender, age, initiation of breakup, emotional involvement, anxiety, avoidance, and want-ing/trying to get the person back as predictors of angry/

hostile/vengeful behavior. In addition, a second analysis examined prediction of wanting/trying to reestablish the relationship, including hostility as a predictor.

The regression predicting desire was significant, $F(7, 4516) = 379.37, p < .001$. Desire was significantly predicted by all variables except avoidance, $\beta_s = -.04$ to $.37$, p s ranging from $.01$ to less than $.001$, including the Anger/Hostility/Revenge measure, $\beta = .19, p < .001$.

However, although the overall regression was again significant, $F(7, 4516) = 59.96, p < .001$, only gender, $\beta = .10, p < .003$, attachment anxiety, $\beta = .20, p < .001$, and wanting/trying to get the person back, $\beta = .15, p < .001$, predicted angry/hostile/vengeful behavior. (Without the desire variable in the equation, emotional involvement was a significant predictor of the hostility measure but this relationship disappeared when the desire variable was included.) Clearly, the theoretical link between processes of proximity-seeking/attempting to reestablish the relationship and the experience/expression of anger were supported in these analyses.

PREOCCUPATION/INTERFERENCE

Both emotional involvement, $\beta_s = .37, .25, p$ s $< .001$, and attachment anxiety, $\beta_s = .27, .20, p$ s $< .001$, were associated with stronger preoccupation with the lost partner and interference with exploratory activities such as school and work, as can be seen in the first two sections of Table 2. Preoccupation and interference also were stronger among respondents whose partners initiated the breakup, $\beta_s = .33, .14$, respectively, p s $< .001$.

COPING STRATEGIES

Table 2 summarizes regression analyses for social (vs. self-reliant), avoidant, and self-medicating coping strategies.

Social versus self-reliant coping. As predicted, anxiety was positively and avoidance negatively associated with social coping, $\beta_s = .14, -.17, p$ s $< .001$, whereas avoidance was positively associated with self-reliant coping, $\beta = .20, p < .001$. In addition, respondents whose partners initiated the breakup and those higher in emotional involvement were more likely to use social, $\beta_s = .12, .22, p$ s $< .001$, and less likely to use self-reliant coping, $\beta_s = -.04, -.04, p$ s $< .01$.

Avoidant coping. The third and fourth sections of Table 2 summarize regression coefficients for coping by avoiding the former partner and taking the extreme actions of moving to another town or changing jobs to avoid the person. For the latter measure, only those who reported having a job before the breakup and being older than 21 (i.e., those who might be able to move if they desired) were included.

The expected association of attachment avoidance with the measure of avoiding the partner was small but

significant only for those whose partners initiated the breakup, $\beta = .07, p < .01$. Attachment anxiety was associated with avoiding the person, but only for self-initiated breakups, $\beta = .11, p < .001$. Those whose partners initiated the breakup, $\beta = -.09, p < .001$, and those more emotionally involved with their partners, $\beta = -.10, p < .001$, were less likely to avoid former partners.

Results for the measure of moving or changing jobs to avoid the partner were similar but even weaker (see Table 2). However, in contrast to results for the more general measure of avoidance, emotional involvement was positively related to the tendency to move or change jobs to avoid a former partner, $\beta = .13, p < .001$. Similar to physical violence, moving and changing jobs are low-base-rate behaviors. We therefore performed analyses of variance to assess differences in emotional involvement and attachment-related anxiety and avoidance between those who did and those who did not move and those who did and did not change jobs. The 9-point scales were recoded such that *not at all* was coded as 0 and all other responses were coded as 1.

Those who changed jobs to avoid their partner were higher in attachment anxiety, $M_s = 4.62, 4.23, F(1, 3235) = 20.53, p < .001$, and avoidance, $M_s = 3.81, 3.69, F(1, 3267) = 3.93, p < .05$, and emotional involvement, $M_s = 7.68, 7.43, F(1, 3324) = 4.64, p < .05$, than those who did not. Similarly, those who moved to avoid the person were higher in anxiety, $M_s = 4.40, 4.18, F(1, 1997) = 7.72, p < .006$, and emotional involvement, $M_s = 7.82, 7.45, F(1, 2056) = 11.78, p < .001$, than those who did not. Avoidance was not related to moving to avoid the person.

Self-medication. The final two sections of Table 2 contain coefficients for coping through drugs or alcohol. Only respondents who reported using alcohol before the breakup were included in the alcohol analysis, and only those who used drugs prior to the breakup were included in the drug analysis. As expected, both anxiety, $\beta_s = .13, .19, p$ s $< .001$, and avoidance, $\beta_s = .08, .14, p$ s $< .001$, were associated with both alcohol and drug use following a breakup.

RESOLUTION

Table 3 presents regression results for five measures of resolution of the loss.

Perseveration/lost sense of identity. As can be seen in the top two sections of Table 3, both perseveration and lost sense of identity were higher among those whose partners initiated the breakup, $\beta_s = .29, .16, p$ s $< .001$, those higher in emotional involvement, $\beta_s = .35, .30, p$ s $< .001$, and those higher in attachment anxiety, $\beta_s = .13, .25, p$ s $< .001$, as expected.

Integration. Also as expected, continuing to relate to the partner, but in a different role (integration), was

TABLE 2: Coping Strategies: Regression Coefficients for Total, Partner-Initiated Breakup, and Self-Initiated Breakup Samples

Type of Reaction	Gender	Age	Who Initiated	Emotional Involvement	Anxiety	Avoidance
Social: Talk friends/family	.15***	-.02	.12***	.22***	.14***	-.17***
Partner-initiated	.20***	-.01		.12***	.13***	-.21***
Self-initiated	.12***	-.03		.27***	.14***	-.14***
Self-reliant: Handle self without friends/family	-.15***	.02	-.04**	-.04**	.01	.20***
Partner-initiated	-.17***	.01		-.01	.02	.17***
Self-initiated	-.12***	.05		-.07**	.01	.21***
Avoidant						
Avoid person	-.00	.10***	-.09***	-.10***	.08***	.05**
Partner-initiated	-.03	.11***		-.05*	.00	.07**
Self-initiated	-.02	.10***		-.15***	.11***	.04
Move/change jobs	-.01	.01	-.06*	.13***	.06*	.06*
Partner-initiated	-.01	.01		.15***	.11**	.06
Self-initiated	.02	.01		.13**	-.02	.05
Self-medication						
Alcohol	-.11***	-.06**	.04*	.20***	.13***	.08***
Partner-initiated	-.16***	-.05		.18***	.14***	.08**
Self-initiated	-.06	-.08*		.20***	.12***	.08*
Drugs	-.15***	-.10**	.03	.21***	.19***	.14***
Partner-initiated	-.13***	-.04		.19***	.20***	.16**
Self-initiated	-.13***	-.15**		.25***	.18**	.18**
Drugs/alcohol	-.11***	-.11***	.03	.20***	.13***	.10***
Partner-initiated	-.14***	-.11***		.18***	.14***	.11***
Self-initiated	-.06	-.13***		.21***	.13***	.11***

NOTE: Men were scored as 1, women as 2. Initiation of breakups was scored as 1 (self), 2 (both), and 3 (partner). For the alcohol and drug questions, respondents were selected to report having drunk or used drugs prior to the breakup ($N_s = 1704, 795, 622$ for alcohol; 2391, 1096, 893 for drugs). For the measure including changing jobs or moving to avoid the person, respondents were selected to be older than 21 and to have had a job at the time of the breakup ($N_s = 759, 339, 298$). For other measures, $N_s = 4541-4549$ (total), 2018-2175 (partner-initiated), 1682-1838 (self-initiated). Significance levels for the regression equations were as follows: $F(6, 759-4883) = 162.65, 58.34, 26.13, 6.22, 36.95, 16.87, p < .000$ (total); $F(5, 334-2057) = 57.11, 26.01, 9.01, 6.20, 19.16, 7.74, p < .000$ (partner-initiated); $F(5, 293-1833) = 63.72, 28.23, 14.05, 2.08, 11.88, 7.74, p < .000, .000, .000, .07, .000, .000$ (self-initiated).

* $p < .05$. ** $p < .01$. *** $p < .001$.

negatively associated with both anxiety and avoidance, although the associations were small, $\beta_s = -.05, -.06, p < .001$.

Replacement. As expected, attachment anxiety was associated with a tendency to jump immediately into a new relationship, $\beta = .17, p < .001$. This tendency also was greater among those who initiated the breakup, perhaps because they were already beginning or contemplating another relationship while they were breaking off the old one, $\beta = -.15, p < .001$.

Avoidance of new relationships. As expected, attachment avoidance was associated with the tendency to avoid new relationships after the breakup, $\beta = .15, p < .001$. This tendency also was associated with age, partner-initiated breakups, emotional involvement, and attachment anxiety, $\beta_s = .11, .14, .19, .07, p < .001$. Thus, it appears that more anxious respondents tended either to swear off relationships or immediately jump into a new one.

DISCUSSION

Although a few studies have shown that attachment anxiety is associated with enhanced distress on relation-

ship dissolution (Feeney & Noller, 1992; Fraley & Shaver, 1997; Simpson, 1990; Sprecher et al., 1998), the present study provides the first demonstration of attachment-related reactions to breakups ranging from protest through coping to eventual resolution.

Distress. Bowlby (1969/1982) proposed that threat to the availability of an attachment figure would result first in distress, varying in magnitude partly as a function of the degree of attachment to the attachment figure. Consistent with this expectation, we found that people who reported more emotional involvement with their partners at the time of the breakup exhibited greater distress of all kinds, including both physical and emotional distress, lost interest in sex, self-blame, and guilt. Similarly, those whose partners initiated the breakup reported greater physical/emotional distress and lost interest in sex but less self-blame and guilt.

Our results replicate previous findings of an association between attachment anxiety and enhanced distress due to relationship threats of all types, ranging from temporary separation to permanent dissolution through breaking up or death (Ainsworth et al., 1978; Feeney &

TABLE 3: Resolution: Regression Coefficients for Total, Partner-Initiated Breakup, and Self-Initiated Breakup Samples

Type of Reaction	Gender	Age	Who Initiated	Emotional Involvement	Anxiety	Avoidance
Perseveration	-.07***	-.07***	.29***	.35***	.13***	.04**
Partner-initiated	-.04	-.08***		.31***	.20***	.02
Self-initiated	-.07**	-.03		.43***	.08***	.05*
Lost sense of identity	-.03*	-.07***	.16***	.30***	.25***	-.01
Partner-initiated	-.03	-.07***		.34***	.28***	-.05**
Self-initiated	-.02	-.05*		.30***	.24***	.01
Integration	.02	-.13***	.05***	.06***	-.05***	-.06***
Partner-initiated	.04	-.16***		.04	.03	-.07**
Self-initiated	.04	-.12***		.09***	-.08***	-.05*
Look for new partner	-.06***	-.04*	-.15***	-.08***	.17***	-.07***
Partner-initiated	-.03	-.01		-.05*	.14***	-.01
Self-initiated	-.09***	-.07**		-.09***	.20***	-.11***
Avoid new relationships	-.01	.11***	.14***	.19***	.07***	.15***
Partner-initiated	-.00	.14***		.18***	.09***	.09***
Self-initiated	-.01	.13***		.18***	.03	.18***

NOTE: *N*s = 4477-4554 (total), 2053-1838 (partner-initiated), 1658-1698 (self-initiated). Significance levels for the regression equations were as follows: *F*s(6, 4471-4548) = 322.68, 252.86, 21.93, 42.32, 87.67, *p*s < .001 (total); *F*s(5, 2034-2054) = 71.39, 121.57, 16.22, 9.23, 30.73, *p*s < .001 (partner-initiated); *F*s(5, 1248-1833) = 73.79, 66.83, 11.04, 25.32, 25.91, *p*s < .001 (self-initiated).

p* < .05. *p* < .01. ****p* < .001.

Noller, 1992; Fraley & Shaver, 1999; Simpson, 1990). Unlike previous research, however, the present data reveal a link between some distress reactions and avoidance. In particular, avoidance was associated with enhanced self-blame (and reduced partner blame) and lost interest in sex.

Anger and desire. Bowlby (1988) argued that both anxiety and anger are natural and effective responses to threat to any important relationship. Anger (in the right amount, time, and place) can deter dangerous behavior, disloyalty, or neglect and coerce the partner into exhibiting the desired behavior. Bowlby further argued that maladaptive family violence or aggression can be understood as exaggerated versions of attachment behaviors that (when more appropriate in form or level) are potentially functional. Thus, anger or aggression derived from relationship anxiety may be rooted in an attempt to protect the relationship but become so extreme as to threaten it instead.

Crittenden’s (1997) analysis of the “coercive” strategy suggests that angry/aggressive strategies for maintaining contact or eliciting caregiving are particularly characteristic of anxious/ambivalent/preoccupied individuals. Furthermore, her analysis of the association between anxious attachment and the aggressive pole of the coercive strategy has been clearly supported in studies of both infants and adults. For example, Ainsworth and her colleagues (Ainsworth et al., 1978) reported that both anxious and avoidant attachment in infants was associated with greater displays of anger toward the parent (although avoidant infants tended to display greater

anger at home but not in the strange situation). Adult partner violence (physical and verbal), however, has been associated with preoccupied and fearful attachment (both involving high attachment anxiety) but not with dismissing attachment (e.g., Dutton, 1998).

Furthermore, although not framing their research in attachment terms, Downey, Feldman, and Ayduk (2000) provided evidence that “rejection sensitivity” (defined as the disposition to anxiously expect, readily perceive, and intensely react to rejection by significant others) predicted dating violence among those who were highly invested in the relationship. They also reviewed evidence showing that rejection is often a trigger of male violence toward romantic partners (see also Bixenstine, 1999; Walker, 1979; Wilson & Daly, 1993).

The association between attachment anxiety and angry responses to relationship threat also has been clearly articulated in the bereavement literature. Bowlby argued, for example, that ambivalence during bereavement manifests itself as both yearning for the deceased and anger over being abandoned. Some support for this prediction was provided by Bonnanno et al. (1995), who showed that ambivalence regarding the lost partner was associated with facial expressions of both anger and sadness when a person was talking about his or her loss. Unlike a dead partner, however, a live but unavailable partner provides a ready target for angry responses.

The present results further supported the theoretical link between anger and desire in that all positive and negative protest reactions were positively associated with one another. Those who most wanted their partner back were also most hostile and aggressive—as further shown

by the association of reported emotional involvement with the partner at the time of the breakup and the strength of both angry/hostile response and desire for the lost partner.

Preoccupation. Related to strength of desire for a lost partner is strength of preoccupation in thinking about him or her. Relationship anxiety is associated with higher resting levels of preoccupation with an attachment figure (Mikulincer et al., 2002) and with enhanced preoccupation under conditions of relationship threat (e.g., the temporary absence of mother in the strange Situation) (Ainsworth et al., 1978). Studies of bereavement also have shown that relationship anxiety is associated with “chronic mourning” and preoccupation with the dead partner (see review by Fraley & Shaver, 1999). Consistent with these earlier findings, in the present study, preoccupation was greater among those whose partners initiated the breakup, those who were more emotionally involved with their partners, and those high in attachment anxiety.

Exploration. Studies of infant attachment identified the link between preoccupation with the attachment figure and reduced exploration of the environment (e.g., Ainsworth et al., 1978; Bowlby, 1973; Cassidy & Berlin, 1994); later, Hazan and Shaver (1990) showed that anxious attachment in adulthood is associated with reduced exploration in the arena of work. Similarly, the present research linked attachment anxiety to interference with exploration in the form of school or work. Also as expected, such interference was greater for those whose partners initiated the breakup and those more emotionally involved with their lost partners.

Clearly, the patterns of reactions to threat to an attachment relationship characteristically associated with attachment anxiety and avoidance appear in reactions to the dissolution of romantic relationships. First, the results provided support for the expected relationship between attachment-related avoidance and self-reliant, nonsocial coping strategies. Avoidant attachment was associated with less use of friends and family and greater self-reliance, as expected. Furthermore, avoidance was associated with avoidance of the former partner, even to the extent of changing jobs (although the relationship was necessarily small, given the low base rate of changing jobs). Unexpectedly, attachment anxiety also was associated with avoidance of the partner, including both moving and changing jobs to avoid the person. Although apparently inconsistent with greater proximity seeking and attempts to maintain the relationship among those higher in attachment anxiety, the tendency to avoid the partner may be characteristic of what Bartholomew and Horowitz (1991) called fearful avoidants, who are high in both anxiety and avoidance.

Coping. Generally, we expected both anxiety and avoidance to be associated with dysfunctional coping strategies. Perhaps the most dysfunctional strategies are self-destructive strategies such as use of drugs or alcohol. As expected, use of these strategies was associated with both forms of attachment insecurity.

The use of all forms of coping might be more likely and more intense among people who experience greater distress. In line with this reasoning, those whose partner terminated the relationship, those who were more emotionally involved in the relationship, and those high in attachment anxiety were more likely to seek support from friends and family and to use drugs or alcohol. Thus, it may be that those who experience the most distress also must try harder, in any way compatible with their characteristic distress-regulation strategies, to soothe the distress of the breakup, including the use of drugs or alcohol.

In contrast, although avoidance was not associated with enhanced distress, it was associated with specific characteristic coping strategies, all of them involving self-reliance and avoidance. Both avoidance of former partners and self-medication may be attempts to suppress attachment-related thoughts and feelings. In fact, there is some evidence that avoidants (particularly those low in anxiety) can successfully suppress attachment-related distress—if they can avoid direct reminders of the relationship (Fraley et al., 1998; Fraley & Shaver, 1997).

Resolution. As explained in the Introduction, in his later theorizing, Bowlby (1980) renamed the final phase of grief “reorganization” to convey that representations of the self and the lost attachment figure are reorganized in ways that may allow a continuing (but altered) emotional bond in conjunction with adjustment to changed circumstances. We expected persons high in anxiety to be most apt to suffer disorganization of their own identities in the absence of the lost partner. Furthermore, we expected both anxious and avoidant persons to be less likely to integrate the ex-partner into their lives in an altered form of attachment, such as friendship or working relationships.

The first expectation was clearly supported. Relationship anxiety was strongly associated with reports of a lost sense of identity without the former partner. The second prediction received only weak support. That is, there were small negative associations between both anxiety and avoidance and integration of the lost partner into a different role relationship.

Chronic mourning. Bowlby (1980) mentioned attachment-related differences in chronic mourning, or perseveration in the protest and/or despair stages of mourning. Similar to Freud (1917/1957) and others

(e.g., Lazare, 1989; Sanders, 1993), Bowlby (1980) argued that chronic mourning, or “complicated bereavement,” derives from anxious/ambivalence toward the lost partner. Thus, we expected attachment anxiety to be associated with prolonged, exaggerated, and dysfunctional protest and despair reactions (i.e., chronic mourning). And in fact, those who were higher in anxiety and those who were more attached to the lost partner (i.e., were higher in emotional involvement or who did not initiate the breakup) reported greater perseverance in desire for the lost partner.

Replacement. Consistent with their insecurity, however, those higher in attachment anxiety also reported a greater tendency to search immediately for a replacement for the lost partner. Generally, those high in attachment anxiety tend to feel uncomfortable when not in a romantic relationship and report higher motivation to be in a romantic relationship (e.g., Davis, 2000). It seems likely that relationships formed under these desperate conditions would be unusually troubled later on, which may be a reason for the high breakup rate of relationships formed by people high in attachment-related anxiety (Shaver & Clark, 1994).

LIMITATIONS

Our Internet methodology allowed us to achieve a greater number of respondents and greater sample diversity than that of the more usual studies of college students. The sample is not representative of any particular population, however; it was biased toward the young computer users and people interested in relationship issues. Moreover, participants described memories of past relationship breakups. However, although autobiographical memory can be unreliable (e.g., Conway & Pleydell-Pearce, 2000), and specifically memory for reactions to loss can become distorted over time (e.g., Safer, Bonanno, & Field, 2001), the present observed effects remained significant and unaltered for breakups occurring less than 3 months before the survey. Another concern—that unmonitored participants may have been frivolous while completing our questionnaire—can be assuaged by noting that the coefficient alphas were high for the multi-item measures and the results formed a theoretically predictable and sensible pattern.

Finally, it would clearly be desirable to examine similar measures prospectively to establish clear causal effects of attachment style on reactions to breakups and to rule out the reverse possibility that breakup processes affected attachment style. However, although the possibility that the nature of the breakup caused differences in attachment style cannot currently be ruled out, there is no foundation for predicting the full range of reverse effects. For example, it is not clear how coping through

self-medication versus socially, becoming vengeful or violent, or feeling a lost sense of identity would cause changes in attachment style. Thus, the causal role of attachment style in determining reactions to breaking up remains highly plausible. Moreover, two previous studies of attachment style and reactions to breaking up were prospective in nature (Feeney & Noller, 1992; Simpson, 1990). Similar to our study, they both found predictable associations between anxiety, avoidance, and distress. The second specifically found that breaking up did not affect attachment style. Furthermore, at least one study of stability in attachment style (Scharfe & Bartholomew, 1994) showed that while positive interpersonal life events predicted change in attachment style, negative interpersonal life events did not. Nevertheless, our hypotheses certainly deserve to be tested longitudinally and the present study provides a rich guide for such future research.

REFERENCES

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment*. Hillsdale, NJ: Lawrence Erlbaum.
- Archer, J. (1999). *The nature of grief: The evolution and psychology of reactions to loss*. London: Routledge.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*, 226-244.
- Bixenstine, V. E. (1999). Spousal homicide. In H. V. Hall (Ed.), *Lethal violence* (pp. 231-257). New York: CRC Press.
- Bonnano, G. A., Notarius, C. I., Gunzerath, L., Keltner, D., & Horowitz, M. J. (1995). Interpersonal ambivalence, perceived dyadic adjustment, and conjugal loss. *Journal of Consulting and Clinical Psychology*, *66*, 1012-1022.
- Bowlby, J. (1973). *Attachment and loss: Separation, anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss: Sadness and depression*. New York: Basic Books.
- Bowlby, J. (1982). *Attachment and loss: Attachment* (Rev. ed.). New York: Basic Books. (Original work published 1969)
- Bowlby, J. (1988). *A secure base*. New York: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York: Guilford.
- Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin*, *21*, 267-283.
- Cassidy, J., & Berlin, L. (1994). The insecure/ambivalent pattern of attachment: Theory and research. *Child Development*, *65*, 971-991.
- Conway, M. A., & Pleydell-Pearce, C. W. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review*, *107*, 261-288.
- Cooper, M. L., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology*, *74*, 1380-1397.
- Crittenden, P. M. (1992). Children's strategies for coping with adverse home environments: An interpretation using attachment theory. *Child Abuse & Neglect*, *16*(3), 329-343.
- Crittenden, P. M. (1997). Patterns of attachment and sexual behavior: Risk of dysfunction versus opportunity for creative integration. In L. Atkinson & K. J. Zucker (Eds.), *Attachment and psychopathology* (pp. 47-96). New York: Guilford.
- Davis, D. (2000, May). *May to December: Relationship motivation and behavior throughout the lifespan*. Invited address, Psychology Department, University of California, Davis.

- Downey, G., Feldman, S., & Ayduk, O. (2000). Rejection sensitivity and male violence in romantic relationships. *Personal Relationships, 7*, 45-61.
- Dutton, D. G. (1998). *The abusive personality*. New York: Guilford.
- Feeney, J. A. (1999). Adult romantic attachment and couple relationships. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 355-377). New York: Guilford.
- Feeney, J. A., & Noller, P. (1992). Attachment style and romantic love: Relationship dissolution. *Australian Journal of Psychology, 44*, 69-74.
- Fraley, R. C., Davis, K. E., & Shaver, P. R. (1998). Dismissing-avoidance and the defensive organization of emotion, cognition, and behavior. In W. S. Rholes & J. A. Simpson (Eds.), *Attachment theory and close relationships* (pp. 249-279). New York: Guilford.
- Fraley, R. C., & Shaver, P. R. (1997). Adult attachment and the suppression of unwanted thoughts. *Journal of Personality and Social Psychology, 73*, 1080-1091.
- Fraley, R. C., & Shaver, P. R. (1999). Loss and bereavement: Attachment theory and recent controversies concerning "Grief Work" and the nature of detachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 735-759). New York: Guilford.
- Fraley, R. C., & Shaver, P. R. (2000). Adult romantic attachment: Theoretical developments, emerging controversies, and unanswered questions. *Review of General Psychology, 4*, 132-154.
- Freud, S. (1957). Mourning and melancholia. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 14, pp. 237-260). New York: Basic Books. (Original work published 1917).
- George, C., & Solomon, J. (1999). Attachment and caregiving: The caregiving behavioral system. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 649-670). New York: Guilford.
- Gottman, J. M. (1994). *What predicts divorce? The relationship between marital processes and marital outcomes*. Hillsdale, NJ: Lawrence Erlbaum.
- Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 59*, 511-524.
- Hazan, C., & Shaver, P. R. (1990). Love and work: An attachment-theoretical perspective. *Journal of Personality and Social Psychology, 59*, 270-280.
- Kiecolt-Glaser, J. K., & Newton, T. L. (2001). Marriage and health: His and hers. *Psychological Bulletin, 127*, 472-503.
- Klas, D., Silverman, P. R., & Nickman, S. L. (Eds.). (1996). *Continuing bonds: New Understandings of grief*. Washington, DC: Taylor & Francis.
- Lazare, A. (1989). Bereavement and unresolved grief. In A. Lazare (Ed.), *Outpatient psychiatry: Diagnosis and treatment* (2nd ed., pp. 381-397). Baltimore: Williams & Wilkins.
- Main, M., & Solomon, J. (1986). Discovery of a new, insecure disorganized/disoriented attachment pattern. In T. B. Brazelton & M. Yogman (Eds.), *Affective development in infancy* (pp. 95-124). Norwood, NJ: Ablex.
- Mikulincer, M., & Florian, V. (2001). Attachment style and affect regulation: Implications for coping with stress and mental health. In G. Fletcher & M. Clark (Eds.), *Blackwell handbook of social psychology: Interpersonal processes* (pp. 537-557). Oxford, UK: Blackwell.
- Mikulincer, M., Gillath, O., & Shaver, P. R. (2002). Activation of the attachment system in adulthood: Threat-related primes increase the accessibility of mental representations of attachment figures. *Journal of Personality and Social Psychology, 83*, 881-895.
- Neimeyer, R. A. (Ed.). (2001). *Meaning reconstruction and the experience of loss*. Washington, DC: American Psychological Association.
- Safer, M. A., Bonanno, G. A., & Field, N. P. (2001). "It was never that bad": Biased recall of grief and long-term adjustment to the death of a spouse. *Memory, 9*, 195-204.
- Sanders, C. M. (1993). Risk factors in bereavement outcome. In M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 255-270). Cambridge, UK: Cambridge University Press.
- Scharfe, E., & Bartholomew, K. (1994). Reliability and stability of adult attachment patterns. *Personal Relationships, 1*, 23-43.
- Schuchter, S. R., & Zisook, S. (1993). The course of normal grief. In M. S. Stroebe, W. Stroebe, & R. O. Hansson (Eds.), *Handbook of bereavement: Theory, research, and intervention* (pp. 23-43). Cambridge, UK: Cambridge University Press.
- Shaver, P. R., & Clark, C. L. (1994). The psychodynamics of adult romantic attachment. In J. M. Masling & R. F. Bornstein (Eds.), *Empirical perspectives on object relations theories* (pp. 105-156). Washington, DC: American Psychological Association.
- Simpson, J. A. (1990). The influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology, 59*, 971-980.
- Simpson, J. A., Rholes, W. S., & Nelligan, J. S. (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology, 62*, 434-446.
- Sprecher, S., Felmlee, D., Metts, S., Fehr, B., & Vanni, D. (1998). Factors associated with distress following the breakup of a close relationship. *Journal of Social and Personal Relationships, 15*, 791-809.
- Walker, L. E. (1979). *The battered woman*. New York: Harper & Row.
- Weinfield, N. S., Sroufe, L. A., Egeland, B., & Carlson, E. A. (1999). The nature of individual differences in infant-caregiver attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 69-88). New York: Guilford.
- Wilson, M., & Daly, M. (1993). Spousal homicide risk and estrangement. *Violence and Victims, 8*, 3-16.

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