Draft (01/29/03) of a chapter for J. A. Simpson & W. S. Rholes (Eds.), *Adult Attachment: New Directions and Emerging Issues*. Please do not quote without the authors' permission.

What Do Self-Report Measures of Attachment Assess?

Phillip R. Shaver
University of California, Davis
and
Mario Mikulincer
Bar-Ilan University

Running Head: SELF-REPORT MEASURES OF ATTACHMENT

Author addresses: Phillip R. Shaver, Department of Psychology, University of California, Davis, One Shields Avenue, Davis, CA 95616-8686, e-mail: prshaver@ucdavis.edu. Mario Mikulincer, Department of Psychology, Bar-Ilan University, Ramat Gan 52900, Israel, e-mail: mikulm@mail.biu.ac.il.

The measurement of adult attachment patterns got off to a rousing start in the 1980s. George, Kaplan, and Main (1985) created the Adult Attachment Interview (AAI) to assess "current state of mind with respect to attachment," and Main and her colleagues (e.g., Main, Kaplan, & Cassidy, 1985) demonstrated that a parent's AAI classification (secure/autonomous, preoccupied, dismissing, or unresolved) predicted the quality of attachment shown by a child to that particular parent. (See Hesse, 1999, for a comprehensive description and history of the AAI.) Hazan and Shaver (1987), working independently, proposed a theory of romantic attachment and created a simple self-classification question, responses to which were systematically related to mental models of self and partner, beliefs about romantic love, and memories of childhood relationships with parents. Armsden and Greenberg (1987) developed a multi-item, multi-scale self-report Inventory of Parent and Peer Attachment (IPPA), which could be used to assess security, or perceived quality, of adolescents' relationships with their parents and peers. West, Sheldon, and Reiffer (1987) created a multi-item, multi-scale measure for clinically analyzing an adult's relationship with a particular attachment figure. Bartholomew and Horowitz (1991) created interview measures of both parent and peer attachment histories. And Pottharst and Kessler (described in Pottharst, 1990) created a an Attachment History Questionnaire (AHQ) to assess adults' memories of attachment-related experiences in childhood – for example, separations from parents, loss of parents, and quality of relationships with parents and other attachment figures.

Out of these initial efforts, two somewhat independent lines of research emerged (see descriptions and summaries in Bartholomew & Shaver, 1998; Crowell, Shaver, & Fraley, 1999; Shaver & Mikulincer, 2002). In one of the lines, based primarily on the AAI, developmental and clinical psychologists repeatedly showed that AAI classifications of parents can predict the Strange Situation (infant attachment) classifications of their children. Some insights have been gained about the nature of this cross-generational transmission process (e.g., George & Solomon, 1999; van IJzendoorn, 1995), although most of the statistical connection remains unexplained. Researchers in this tradition have also shown that certain kinds of psychopathology are related

systematically to AAI classifications (e.g., Lyons-Ruth & Jacobvitz, 1999). When this approach to assessment is extended to the romantic/marital domain (Crowell et al., 2002; Crowell, Treboux, & Waters, 2002; Simpson, Rholes, Orina, & Grich, 2002; Waters, Crowell, Elliot, Corcoran, & Treboux, 2002), connections between the AAI and behavior in couple relationships.

In the second line of adult attachment research (reviewed by Mikulincer & Shaver, 2003), personality, social, and some clinical psychologists have used either Hazan and Shaver's (1987) very brief self-report measure of what came to be called "adult attachment style" (secure, anxious, or avoidant), or some extension or refinement of that measure (e.g., Bartholomew & Horowitz, 1991; Collins & Read, 1990; J. A. Feeney, Noller, & Hanrahan, 1994; Simpson, 1990). Some measures are based on a four-category typology of attachment styles (secure, preoccupied, fearful, and dismissing) instead of the three assessed by Hazan and Shaver (1987), and some yield scores on two, three, or five dimensions.

In 1998, Brennan, Clark, and Shaver conducted a factor analysis of all existing English-language dimensional measures created up to that point and discovered, in line with the two-dimensional model proposed by Bartholomew and Horowitz (1991), that all of the measures could be reduced to two orthogonal dimensions, Attachment Anxiety (fear of separation and abandonment) and Attachment Avoidance (e.g., discomfort with intimacy and dependency). The resulting Experiences in Close Relationships scale (ECR) has been used in many studies since 1998 and has been found to be highly reliable and to have high construct and predictive validity (Shaver & Mikulincer, 2002).

The two lines of attachment research have remained separate because of the different research questions motivating investigators – intergenerational transmission of attachment patterns versus social-cognitive dynamics affecting feelings and behavior in close, especially romantic/marital relationships – and the belief that the AAI and self-report attachment measures are unrelated. This belief is based on the substantial differences between the AAI and self-report attachment measures in targeted relationship (parent-child vs. adult-adult relationships), methods (intensively coded interview transcripts vs. brief self-reports), and analytic focus (structural

properties of coherence, believability, and vagueness of a person's narrative of attachment experiences vs. content of a person's feelings and self-observed behavior).

Belief that two very different domains are being measured is also based on recent findings indicating that self-reports of attachment anxiety and avoidance are not significantly associated with AAI classifications (Crowell, Treboux, & Waters, 1999; Simpson et al., 2002; Waters et al., 2002). However, other studies have found significant associations between self-report and interview measures of attachment patterns (Bartholomew & Horowitz, 1991; Bartholomew & Shaver, 1998; Griffin & Bartholomew, 1994; Shaver, Belsky, & Brennan, 2000). For example, Shaver et al. (2000) found that self-report attachment scores could be predicted from AAI coding scales with multiple *R*s of .48 and .52.

Another barrier to integration of the two lines of attachment research is AAI researchers' supposition that self-report measures cannot plumb the psychodynamic depths probed by the AAI. As Jacobvitz, Curran, and Moller (2002) wrote in a recent article, "the AAI classification coding system assesses *adults' unconscious processes for regulating emotion*…Unlike the AAI, the self-report measures of attachment tap adults' *conscious appraisals* of themselves in romantic relationships" (p. 208, their italics). Such researchers have tended to infer that because self-report measures involve conscious, deliberate answers to explicit questions, they are probably limited to indexing conscious mental processes. On this assumption, it is easy to reach the conclusion that self-report measures are unlikely to relate to the psychodynamic processes of interest to Bowlby (1982/1969) and other clinicians, especially those with a psychoanalytic orientation.

In order to challenge this view of what is tapped by self-report measures of attachment style and to demonstrate what can be accomplished when these measures are used in research, we (Shaver & Mikulincer, 2002) published a target article in *Attachment and Human Development* in which we showed that self-report measures, when used in conjunction with other kinds of measures, such as behavioral observations and implicit priming techniques, can reveal a great deal about implicit, unconscious processes. As we said in that article:

> [Our review of recent studies] indicates that considerable progress has been made in testing central hypotheses derived from attachment theory and in exploring unconscious, psychodynamic processes related to affect-regulation and attachment-system activation. The combination of self-report assessment of attachment style and experimental manipulation of other theoretically pertinent variables allows researchers to test causal hypotheses. (p. 133)

Although some of the eleven commentaries on our article were highly supportive, others were critical. Some authors familiar with the AAI tradition (Belsky, 2002, Bernier & Dozier, 2002; Jacobvitz et al., 2002; Waters et al., 2002) continued to suspect that their approach is superior in (1) tapping unconscious processes, (2) delineating the information-processing strategies of dismissing and preoccupied adults, (3) evoking rich narrative accounts of attachment relationships that directly reflect interviewees' internal working models, (4) relating attachment working models to social behavior, and (5) discovering how adult attachment patterns emerge from a person's attachment history. These critics also claimed (6) that self-report measures of attachment style suffer from a lack of discriminant validity, since they tend to be correlated with self-report measures of other constructs such as depression and trait anxiety.

The purpose of the present chapter is to continue this important dialogue by examining the research literature in the self-report tradition to see if the AAI researchers' criticisms stand up to the evidence. In each of the following sections, we address one of the six kinds of criticism advanced by AAI researchers in their commentaries on our target article, and also in some of their other writings, and review empirical evidence dealing with each of these criticisms.

Implicit, Unconscious Correlates of Self-Reports of Attachment Style

A number of authors have questioned the validity of self-report measures of attachment style for assessing implicit, unconscious aspects of attachment-system functioning (e.g., Crowell & Treboux, 1995; Hesse, 1999; Jacobvitz et al., 2002). In their view, self-reports measures tap only a person's conscious appraisals of feelings and behaviors in close relationships, which can be inaccurate reflections of the underlying dynamics of the attachment system. We agree that it is

possible that some people defensively report that they do not worry about rejection and separation when actually they do worry about these issues, and some may have no conscious access to these worries even though they exist. Because of such problems, critics claim that self-report measures of attachment style cannot be considered valid measures of a person's "true" working models of self and others or of attachment-related strategies of affect regulation (what Cassidy & Kobak, 1988, called hyperactivating and deactivating strategies). Many of the critics prefer to use the Adult Attachment Interview, which they believe to be a reliable and valid measure of unconscious processes revealed when a person discusses attachment-related experiences recalled from childhood, such as separations from attachment figures (Hesse, 1999).

Although, like every self-report measure, attachment style scales can be somewhat biased by social desirability concerns and other motivational and cognitive tendencies, there are several reasons for continuing to use them to index implicit aspects of attachment-system functioning, as Crowell, Fraley, & Shaver (1999) have explained. First, most adults have sufficient experience in close relationships to provide valuable information about their relational cognitions, emotions, and behavior. Their characteristic feelings and behaviors may be useful reflections of unconscious processes, even though people cannot report on those processes directly. Second, conscious and unconscious processes typically operate in the same direction to achieve a goal and unconscious motives are often manifested in conscious appraisals (Chartrand & Bargh, 2002). Third, even in the case of people who defensively deny attachment needs or claim they do not suffer from attachment insecurities, "…it is possible to use attachment theory to derive the kinds of conscious beliefs that defensive people may hold about themselves" (Crowell et al., 1999, p. 453). In this way, one can predict from self-reports how a person is likely to behave under particular conditions even if the people providing those reports would not be able to make the same predictions. This kind of prediction is commonly made in studies based on other kinds of self-report scales, such as measures of narcissism (see Morf & Rhodewalt, 2001, for a review). It is not unique to the attachment domain.

Beyond these conceptual considerations, research using self-report measures of adult attachment styles has already revealed many theoretically predictable and coherent associations between attachment style measures and indices of implicit, unconscious processes. If the proof of the pudding is in the eating, as the old adage says, or the proof of the measure is in the theoretically significant findings it generates, then the value of self-report measures of attachment style has been solidly demonstrated.

One line of research has focused on the cognitive accessibility of attachment-related representations at a particular moment – i.e., their readiness to be used in information processing. According to Wegner and Smart (1997), a concept or thought can be activated and can influence mental processes before the person undergoing that activation recognizes it in his or her stream of consciousness. Therefore, the extent to which a concept or thought influences performance in cognitive tasks can serve as a measure of cognitive activation. In our case, it can provide a valid indication of implicit correlates of self-reports of attachment style.

Most attachment studies examining implicit thoughts related to self-reported attachment style rely on the lexical decision task (Meyer & Schvaneveld, 1971). In this task, participants look at a string of letters and try to determine as quickly as possible whether it forms a word. Reaction times (RTs) serve as a measure of the accessibility of thoughts related to the target words – the quicker the RT, the higher the inferred accessibility. Using this method, six studies have clearly shown that self-reports of attachment style are related in theoretically coherent ways to implicit, unconscious attachment-related thoughts (Baldwin et al., 1993; Baldwin & Meunier, 1999; Mikulincer, 1998a, 1998b; Mikulincer, Birnbaum, Woodis, & Nachmias, 2000; Mikulincer, Gillath, & Shaver, 2002). In these studies, people with a self-reported secure attachment style have exhibited relatively short lexical decision latencies (indicating heightened accessibility) for words connoting positive, relationship-enhancing responses from a partner (e.g., care, accept), proximity-related words (e.g., love, closeness), and names of security-enhancing attachment figures. People with a self-reported anxious attachment style, like those classified “preoccupied” on the AAI, evince heightened accessibility of concepts connoting

negative responses on the part of a relationship partner (e.g., hurt, reject) and other attachment-related worries.

Lexical decision studies have also revealed avoidant individuals' negative models of others and defensive suppression of attachment-related worries. Specifically, people with a self-reported avoidant attachment style easily access words connoting negative partner responses but are slow to access worries about separation and abandonment. They also exhibit slow RTs to attachment-related worries even after being subliminally primed with the word "death," which for other people is a potent activator of attachment-related fears. However, these same avoidant individuals are quick to access attachment-related worries when a "cognitive load" is added to the lexical decision task (i.e., when study participants must perform an additional cognitively demanding task, perhaps robbing mental resources from the defensive exclusion processes normally used effectively by avoidant people). These findings indicate that a person's self-report of avoidant attachment is a useful predictor of unconscious suppression of worries related to separation and abandonment. In other words, although the self-report measures depend on conscious self-observations, they point to individual differences in unconscious mental processes as well.

In a second kind of study, Dolev (2001) used the well-known Stroop color-naming task (Stroop, 1938) to examine implicit, automatic manifestations of attachment styles identified with self-report measures. In this task, participants read a word and are asked to identify as quickly as possible the color in which the word is printed. Research consistently indicates that the activation of a specific thought increases attention to thought-congruent stimuli and mental representations (such as words), thus leading to slower color-naming of thought-relevant words in the Stroop task (e.g., Mathews & McLeod, 1985). That is, interference with color-naming responses in the Stroop task is a valid indicator of cognitive accessibility. Dolev (2001) found that self-reports of attachment anxiety were associated with slower color-naming RTs (heightened accessibility) for words connoting worries about separation and abandonment. She also found that self-reports of attachment avoidance, which were not associated with the accessibility of attachment-related

worries, became related to heightened accessibility of these worries when a "cognitive load" was added to the color-naming task.

Once again, therefore, self-reports of attachment anxiety validly predicted automatic preoccupation with attachment-related worries, whereas self-reports of attachment avoidance validly predicted defensive suppression of these worries. This suppression could be overcome by adding a cognitive load that, apparently, interfered with defensive suppression. These effects are so closely related to the theoretical conception of anxiety and avoidance in attachment theory that they would be difficult to explain, as a whole, by any other theory.

Recently, Zayas, Shoda, and Ozlem (2002) used the Implicit Association Task (IAT; Greenwald, McGhee, & Schwartz, 1998) – a categorization task designed to measure the strength of automatic associations between a target concept (e.g., romantic partner) and an attribute (e.g., positive or negative traits). In this task, a strong automatic association between a target concept and an attribute implies that the activation of the target concept automatically and effortlessly also activates the attribute (indicated by faster RTs to the attribute in the presence of the target concept than in the presence of a different concept). Zayas et al. (2002) found that self-reports of attachment avoidance, which are hypothesized to reflect negative models of others, are related to stronger automatic associations between two target concepts, current romantic partner and mother, and negative attributes. That is, self-reports of attachment avoidance accurately reflect the extent to which a significant other automatically activates representations of that person's negative attributes. It is especially interesting that this activation occurred for both romantic partner and mother, both of whom are likely to be attachment figures for most adults.

In another line of research, investigators have assessed physiological correlates of self-reports of attachment style. In particular, they have used measures of physiological arousal (e.g., heart rate, blood pressure, and skin conductance) to discover how attachment style is related to activation of the autonomic nervous system (ANS). Findings indicate that self-reports of attachment style are not just conscious fabrications. For example, Carpenter and Kirkpatrick (1996) and B. C. Feeney and Kirkpatrick (1996) found that women with a self-reported anxious

or avoidant attachment style reacted with higher heart rate and blood pressure to the presence of a romantic partner in a stressful situation than did securely attached women. Moreover, Mikulincer (1998b) found that people with an anxious or avoidant style had a higher heart rate following negative partner behaviors than securely attached people. These findings indicate that self-reports of what we theoretically view as insecure attachment, including avoidant attachment, which we view as defensive, are reasonable indicators of a person's discomfort in a current close relationship. The findings also confirm Bowlby's (1988) hypothesis that insecurely attached people are often distressed rather than soothed by close relationship partners.

Fraley and Shaver (1997) measured galvanic skin response (GSR), or skin conductance (caused by increased perspiration), while study participants were asked to suppress thoughts about their romantic partner leaving them for someone else. These researchers found that self-reports of attachment style predicted underlying activation of attachment-related strategies of affect regulation. Specifically, self-reports of attachment avoidance were associated with less frequent thoughts of loss following the suppression task and lower skin conductance during the task. This study used a fairly direct measure of avoidant individuals' defensive exclusion of distress-eliciting material (a deactivating strategy) and also an indirect measure of affect regulation (autonomic arousal). In contrast to attachment avoidance, attachment anxiety was associated with more frequent thoughts of loss following the suppression task and higher skin conductance during the task. This finding is compatible with the theoretical notion that anxious individuals hyperactivate attachment-related processes and then have a difficult time calming themselves down after separation-related concerns have been made salient (Shaver & Mikulincer, 2002).

Another promising strategy for examining the unconscious correlates of self-reports of attachment style has been used in a recent study by Gal (2002), in which 72 Israeli undergraduates completed an attachment style scale and the well-known Rorschach (1932) inkblot test. The Rorschach is one of the most frequently used projective instruments for

assessing a person's implicit cognitive representations, unconscious motives, and underlying mental organization (Exner, 1993).

In Gal's (2002) study, participants' Rorschach protocols were analyzed using Exner's (1993) comprehensive scoring system, the reliability of which has been extensively documented. The results fit well with attachment theory. First, self-reports of attachment anxiety, which are assumed to reflect hyperactivation of negative emotions, rumination on distress-related thoughts, and negative models of the self (Shaver & Mikulincer, 2002), were indeed found to be associated with Exner scores indicating distress and emotional outbursts, the tendency to react with strong emotions to person-environment transactions, the lack of ability to regulate and control emotional experience, and distorted perception of the self as helpless, weak, disgusting, and dislikeable. Second, self-reports of attachment avoidance, which are thought to reflect deactivation of negative emotions and defensive maintenance of self-esteem (Shaver & Mikulincer, 2002), were indeed found to be associated with Exner scores reflecting inhibition of emotional expression, a tendency to hide behind a façade, and maintenance of a grandiose, inflated self-representation. Once again, therefore, a measure designed to tap unconscious processes, one used frequently in clinical contexts, produced results that were highly compatible with both attachment theory and the validity of self-report measures of attachment style.

Although not yet definitive, the studies reviewed in this section strongly suggest that self-reports of attachment style are consistently associated with measures tapping implicit and automatic mental processes. Thus, we reject the criticism that self-report measures of attachment style reflect mainly response biases or conscious attitudes and fail to relate to implicit, unconscious aspects of attachment-system functioning.

Dismissing and Preoccupied Information-Processing Strategies

Another criticism of self-report measures of attachment style is that they do not tap the same information-processing strategies assessed by the AAI (e.g., Bernier & Dozier, 2002; Crowell & Treboux, 1995; Hesse, 1999; Jacobvitz et al., 2002). Specifically, self-report scales are viewed as ineffective instruments for assessing what Main et al. (1985) called dismissing and

preoccupied states of mind with respect to attachment. This critique is based on the weak to moderate correlations between, on the one hand, AAI scales characterizing dismissing states of mind (parental idealization, lack of recall of attachment experiences, derogation of attachment experiences) and preoccupied states of mind (anger and passivity) and, on the other hand, self-reports of attachment style (e.g., Shaver, et al., 2000). Bernier and Dozier (2002) have concluded, for example, that "the AAI and self-reports of adult attachment tap related but distinct manifestations of the attachment system" (p. 173).

We agree that self-reports of attachment style are not identical to the AAI. As stated before, these instruments differ in their methodology (coded interview versus self-report questionnaire) and in the foci of the mental representations they assess (child-parent relationships during childhood versus romantic relationships in adulthood). This does not mean, however, that attachment-style scales fail to relate to the information-processing strategies supposedly assessed by the AAI. In fact, although there are only modest to moderate correlations between AAI coding scales and self-report measures of attachment, recent studies that have assessed the strategies characteristic of dismissing and preoccupied attachment using techniques other than the AAI have turned up theoretically coherent associations with self-report scales. These studies, reviewed in the following paragraphs, corroborate our claim that attachment-style scales differ from the AAI in content and method, but not in the core attachment-related processes they index.

One important AAI coding scale that identifies the dismissing state of mind is called "idealization of the primary attachment figure" (Main et al., 1985). According to Hesse (1999), "this scale assesses the discrepancy between the overall view of the parent taken from the subject's speech at the abstract or semantic level, and the reader's [i.e., coder's] inferences regarding the probable behavior of the parent" (p. 403). That is, parental idealization is operationalized as the discrepancy between the positivity of the traits a participant uses to describe his or her childhood relationships with mother or father and the positivity of remembered childhood experiences recounted during the interview and evaluated later by coders who have no additional knowledge about the participant's actual history.

In a recent study, we operationalized parental idealization in terms of Hesse's (1999) guidelines and examined its association with self-reports of attachment avoidance. Specifically, 60 Israeli undergraduate students completed a brief 10-item attachment-style scale (Mikulincer, Florian, & Tolmacz, 1990) during class time and were individually interviewed two weeks later by another researcher. In this interview, they were asked to generate five adjectives or traits that describe "your relationship with your mother during childhood." After participants wrote the five adjectives, the experimenter asked them to retrieve a "memory or experience that led you to choose each one of the traits." The experimenter then read the five adjectives and, for each one, asked participants to write a story exemplifying the way the targeted adjective applied to the relationship with mother.

Participants' adjectives and narratives were subjected to content analysis. First, two psychology graduate students, who were blind to participants' attachment scores and narratives, read all of the generated adjectives and rated the hedonic tone of each one on a 7-point scale ranging from 1 ("highly negative") to 7 ("highly positive"). Since the correlation between the two judge's ratings was adequately high ($\underline{r}$ = .75), the ratings were averaged to form a single score. We then computed a total score for each participant by averaging the ratings of the five adjectives he or she generated (Cronbach's alpha = .71). The higher the score, the higher the positivity of the traits a participant generated to describe his or her relationship with mother. Second, two other psychology graduate students, who were blind to participants' attachment scores and the adjectives they generated, read all of the narratives and rated the hedonic tone of each narrative on a 7-point scale, ranging from 1 ("highly negative") to 7 ("highly positive"). Since the correlation between the two judges' ratings was adequately high ($\underline{r}$ = .78), these ratings were also averaged to form a single score. We then computed a total score for each participant by averaging the ratings of his or her five narratives (alpha = .82). The higher the score, the higher the positivity of the memories a participant retrieved to support or exemplify the adjectives used to describe his or her relationship with mother. Third and finally, for each adjective we computed a discrepancy score between its own positivity rating and the positivity of the corresponding

narrative. We then computed a total discrepancy score for each participant by averaging discrepancies for the five adjective-narrative pairs (alpha = .73). The higher this score, the more positive the adjectives were in comparison with the supposedly supporting narratives.

Table 1 displays Pearson correlations between participants' self-reports of attachment anxiety and avoidance, on one hand, and the description of their relationship with mother during childhood, on the other hand. Attachment anxiety but not avoidance was significantly associated with the generation of less positive adjectives describing the childhood relationship with mother, but both anxiety and avoidance were significantly associated with retrieval of less positive memories of this relationship. As a result, only attachment avoidance was significantly associated with the discrepancy between the adjectival and narrative descriptions of the relationship with mother. That is, the higher the self-report of avoidance, the more positive the discrepancy between adjectival and narrative descriptions, a pattern that AAI researchers interpret as indicating idealization of the relationship with mother.

A second AAI coding scale used to define the dismissing state of mind is "lack of memory for childhood" (Main et al., 1985). According to Hesse (1999), "this scale assesses the speaker's insistence upon her inability to recall her childhood, especially as this insistence is used to block further queries or discourse" (p. 403). Using methodologies borrowed from cognitive psychology (e.g., memory retrieval times, forgetting curves), researchers who use self-report measures of attachment style have found that self-reports of avoidance are related to poor memory of childhood experiences and attachment-related information. For example, Mikulincer and Orbach (1995) found that people who characterized themselves as avoidant took longer than other people to retrieve childhood memories of sadness and anxiety. Mikulincer (1998a) found that avoidant people took longer to recall personal experiences in which attachment figures (mother, father, and romantic partner) behaved in a trustworthy manner. In the study described here in the immediately preceding paragraph, we measured the time participants took to retrieve each of the five narratives concerning the childhood relationship with mother. As expected, there was a significant correlation between self-reported attachment avoidance and longer retrieval

times (see Table 1). Similarly, Fraley, Gardner, and Shaver (2000) found that self-reports of attachment avoidance were associated with poor immediate recall of information about attachment-related threats of separation and loss.

A third AAI coding scale that defines the dismissing state of mind is "active derogating dismissal of attachment-related experiences and/or relationships." In Hesse's (1999) words, "this scale deals with the cool, contemptuous dismissal of attachment relationships or experiences and their import" (p. 403). With regard to this scale, there is extensive evidence that self-reports of attachment avoidance are related to derogating, negative evaluations of close relationships and partners (e.g., Bartholomew & Horowitz, 1991; Collins & Read, 1990; J. A. Feeney & Noller, 1991). In a diary study in which married couples rated the quality of their relationship each day for a period of three weeks, Mikulincer, Florian, and Hirschberger (2002) found that self-reports of attachment avoidance were associated with daily negative appraisals of, and feelings about, the relationship. More important, even on days when a spouse's behavior indicated availability and supportiveness, avoidance was still associated with less positive appraisals and feelings toward the relationship. That is, self-reports of attachment avoidance seemed to reflect derogative dismissal of attachment-related experiences, which may have encouraged people to divert attention from attachment-related cues and ignore their spouse's positive behavior.

A similar derogative dismissal was also noted by Rom and Mikulincer (in press) in their study of attachment-related group processes. In this study, self-reports of attachment avoidance were associated with poor socio-emotional functioning in small groups (as assessed by external observers) and negative attitudes and feelings toward the group. Interestingly, group cohesiveness – a group-level construct reflecting the extent to which a group serves safe haven and secure base functions – was found to improve the socio-emotional functioning of its members and foster more positive attitudes and feelings toward the group. However, whereas group cohesion tempered the negative impact of attachment anxiety, it failed to moderate the negative manifestations of attachment avoidance. That is, even in highly cohesive groups, which provided support, comfort, and emotional security to members, self-reports of attachment

avoidance were still associated with poor socio-emotional functioning and negative group-related attitudes and feelings. Again, self-reports of attachment avoidance seemed to be fairly accurate indicators of a person's dismissal of security-enhancing experiences.

Adult attachment research also provides consistent evidence that self-reports of attachment anxiety are associated with one of Main et al.'s (1985) defining characteristics of the preoccupied state of mind – experience and expression of dysfunctional anger toward attachment figures. For example, Mikulincer (1998b) reported that self-reports of attachment anxiety were associated with (1) proneness to experience anger toward attachment figures, (2) uncontrollable access to, and expression of anger feelings, (3) excessive rumination on anger-related thoughts, (4) hostile attitudes toward relationship partners, and (5) the experience of overwhelming distress during anger-eliciting episodes. Moreover, Woike, Osier, and Candela (1996) found that self-reported attachment anxiety was associated with a tendency to write more violent stories in response to projective TAT cards, implying a pattern of hostile fantasies. It seems that self-reports of attachment anxiety reflect the underlying action of hyperactivating strategies and the dysfunctional experience of what Bowlby (1973) called the "anger of despair."

Two observational studies of actual interactions between romantic relationship partners also provide strong evidence for the ability of self-report measures of attachment anxiety to predict dysfunctional anger toward attachment figures (Rholes, Simpson, & Orina, 1999; Simpson, Rholes, & Phillips, 1996). In Simpson et al.'s (1996) study, anger reactions were observed during conflictual interactions in which romantic partners were asked to identify an unresolved problem in their relationship, discuss it, and try to resolve it. Self-reports of attachment anxiety were associated with the display and report of more anger, hostility, and distress during the conversation. In Rholes et al.'s (1999) study, overt manifestations of anger were assessed among women who interacted with their romantic partner while waiting to engage in an anxiety-provoking activity. In this study, self-reports of attachment anxiety were associated with more intense anger toward a partner after the couple was told that the woman would not have to perform the stressful activity. This association was particularly strong when women were

more upset during the waiting period or when they sought more support from their partner. Overall, the two studies indicate that self-reports of attachment anxiety are a fairly accurate indicator of the arousal of anger and hostility toward a close relationship partner during conflictual interactions and in stressful situations.

The studies reviewed in this section support our contention that self-report measures of avoidance and anxiety are related to some of the most important defining characteristics of dismissing and preoccupied states of mind assessed with the AAI. Only with regard to "passivity and vagueness of discourse concerning attachment issues," one indicator of the preoccupied state of mind (Hesse, 1999), is there no study examining its association with self-reports of attachment anxiety. Further studies should examine this association by asking participants to provide verbal accounts of attachment experiences and relationships and analyzing structural aspects of their discourse (e.g., quality, vagueness, clarity). We predict that an association with self-reported attachment anxiety will be found.

Narratives About Attachment Figures, Interactions, and Relationships

Some critics argue against the use of self-report measures because of their inability to evoke the rich, multifaceted material that appears in people's narratives about attachment experiences and relationships (e.g., Crowell & Treboux, 1995; Hesse, 1999). In their view, self-report attachment scales cannot probe a person's defenses or idiosyncratic attachment history, and researchers who use self-report measures fail to acknowledge that attachment-related processes are woven into contexts, experiences, and memories that differ importantly from person to person. We agree, of course, that the scores people receive on attachment-style scales are not generated directly from detailed descriptions of their attachment figures and relationships or from their idiosyncratic construal of attachment experiences. We acknowledge that coded interviews, such as the AAI and the CRI, are more useful than simple questionnaire scales in characterizing a person's unique narratives and specific mental representations. This does not mean, however, that attachment-style scales are unrelated to such narratives and cannot serve as fairly accurate indicators of the way adults spontaneously deliver attachment-relevant

descriptions and stories. In fact, there is accumulating evidence of theoretically coherent associations between attachment-style scales and the thematic content and structure of narratives about significant others and interpersonal experiences.

Two adult attachment studies (Levy, Blatt, & Shaver, 1998; Priel & Besser, 2001) explored the contents and structure of people's open-ended descriptions of their primary attachment figures using a scoring procedure developed by Blatt and his colleagues (e.g., Blatt, Chevron, Quinlan, Schaffer, & Wein, 1992). Whereas Levy et al. (1998) assessed mental representations of both mother and father in a sample of American undergraduates, Priel and Besser (2001) assessed representations of mother in a sample of pregnant Israeli women. Despite the differences between the studies, their findings were extremely consistent. In line with attachment theory, self-reports of attachment anxiety and avoidance were related to negative, diffuse, and undifferentiated representations of primary attachment figures. Specifically, people who scored high on attachment anxiety or avoidance tended to view their parents as less benevolent and more punitive and to describe them in more ambivalent terms. In addition, their narratives were scored as less conceptually complex and less differentiated than those of more securely attached people. That is, attachment-style scales were able to predict theoretically significant variations in the way people represented their attachment figures in their own words.

J. A. Feeney and Noller (1991) focused on romantic relationships and examined the association between people's self-reported attachment style and their open-ended description of their current romantic relationship. The narrative descriptions were coded for spontaneous references to attachment-related issues and relationship quality. The findings indicated that self-report measures provide valuable information about people's unique representations of their romantic relationships and partners. The relationships described by avoidant individuals were characterized by emotional distance and lack of mutuality and intimacy, whereas the relationships described by anxious individuals were characterized by overinvolvement, dependence, and lack of enjoyment and friendship. Interestingly, people with a self-reported secure style tended to describe their romantic relationships in more balanced terms. "Secure

persons tended to emphasize the importance of openness and closeness in their relationships, while at the same time seeking to retain their individual identity" (J. A. Feeney & Noller, 1991, p. 208). This result fits well with Main et al.'s (1985; Hesse, 1999) labeling of secure AAI respondents as "free and autonomous with respect to attachment."

The correspondence between self-reports of attachment style and interpersonal narratives was also documented in a recent study by Raz (2002), who coded the Core Conflictual Relationship Themes (CCRT; Luborsky & Crits-Christoph, 1990) contained in people's narratives. Study participants completed the Relationship Questionnaire (a measure of attachment style; Bartholomew & Horowitz, 1991) and performed the Relationship Anecdotes Paradigm (RAP; Luborsky & Crits-Christoph, 1998). Specifically, participants were asked to recall three meaningful interactions with significant others and freely describe in each case what happened, including what they and their partner said and did. The narratives were analyzed by two independent judges who used the CCRT coding scheme to extract the three main psychodynamic components of inner representations of relational episodes: (a) *wishes* – the underlying needs, motives, and intentions that guide a person's interactions with others; (b) *responses from others* – the way the person represents the significant other during the interaction; and (c) *responses from self* – the way the person represents himself or herself in the interaction. In addition, Raz (2002) scored the main conflictual feelings and emotions that were mentioned in each participant's narratives.

The narratives generated by more anxious individuals closely fit with Mikulincer and Shaver's (2003) theoretical description of anxious, hyperactivating strategies. Specifically, self-reports of attachment anxiety were associated with wishes for security and stability; being loved, respected, and accepted by the significant other; and not being hurt by the other. These are the defining goals of people with hyperactivating strategies. Characterizing oneself as anxiously attached was also associated with representations of significant others as hurting, rejecting, distant, and disapproving, and representations of oneself as anxious, weak, and unloved – the negative models of self and others that define hyperactivating strategies. Raz (2002) also found

that the conflictual themes in anxious people's narratives centered on doubts about self-worth, excessive seeking of closeness and reassurance, dependence, and inability to deal with interpersonal conflicts and avoid conflict escalation – the main problematic outcomes of anxious people's hyperactivating strategies.

The findings for avoidant individuals were congruent with Mikulincer and Shaver's (2003) conceptualization of avoidant, deactivating strategies. Specifically, self-reports of attachment avoidance were associated with two major wishes: (a) to assert oneself and be independent and (b) to be distant and avoid conflicts. These are the goals of deactivating strategies. Self-reports of attachment avoidance were also associated with representations of significant others as disgusting, hurtful, and rejecting as well as representations of the self as unreceptive (distant, emotionally inexpressive) – the negative model of others and the model of oneself as detached that characterize deactivating strategies. The conflictual themes of the narratives of avoidant individuals mainly emphasized protecting oneself from emotional involvement in and commitment to the relationship and inability to avoid conflict escalation – the main outcomes of avoidant persons' deactivating strategies.

Other studies have also yielded theoretically predictable associations between self-reports of attachment style and narratives generated in projective tests, such as the Thematic Apperception Test (TAT) and the Separation Anxiety Test (SAT). For example, Mikulincer, Florian, and Tolmacz (1990) found that anxious and avoidant people, as compared with securely attached people, expressed more anxiety, depression, and hostility in stories they wrote in response to TAT cards evoking death anxiety; and as mentioned earlier, Woike et al. (1996) found that self-reported attachment anxiety was associated with writing more violent TAT stories. Furthermore, Mayseless, Danieli, and Sharabany (1996) found that people with self-reported anxious or avoidant attachment styles portrayed less constructive coping responses in stories they wrote in response to separation reminders (SAT cards). In this study, self-reports of attachment insecurity were associated with narratives reflecting lack of ability to handle the separation episode and inability to establish a balance between self-reliance and other-reliance.

In addition, whereas self-reported attachment anxiety was predictive of narratives involving hyperactivation of negative emotions in response to separation episodes, the narratives associated with self-reported avoidance implied an underlying deactivating orientation and were characterized by failing to deal effectively with the threat of separation.

In a recent study, Gilad (2002) examined the extent to which self-reports of attachment style predict the way other people are portrayed in TAT stories. Israeli high school students completed the ECR attachment scales (Brennan et al., 1998) and wrote stories in response to six TAT cards. The resulting narratives were scored according to the Social Cognition and Object Relation Scales (SCORS; Westen, 1991). The SCORS measures four dimensions of object relations (i.e., mental representations of people and aspects of important social interactions and relationships) derived from TAT stories: (a) *complexity of representations of people* – the extent to which a person defines and differentiates the perspectives of self and others, seeing self and others as having complex motives and subjective experiences; (b) *affect-tone of relationship paradigms* – the extent to which an individual represents relationships as safe, nurturant, and rewarding as opposed to destructive, harmful, or threatening; (c) *capacity for emotional investment* – the extent to which close relationships are portrayed as ends rather than means and are construed in terms of mutuality rather than need gratification; and (d) *understanding of social causality* – the extent to which causal attributions of interpersonal events reflect appreciation and understanding of the ways in which thoughts and actions are linked to complex conscious and unconscious psychological operations.

Gilad (2002) found that self-reports of attachment style predict important features of the structure and content of mental representations of others, as manifested in TAT narratives. First, self-reported attachment avoidance was associated with less positive "affect-tone of relationships" and lower emotional investment. That is, the TAT narratives of more avoidant people contained more negative representations of close relationships (portraying them as threatening and harmful) and indicated relatively low emotional investment. These findings fit with Mikulincer and Shaver's (2003) conceptualization of avoidant people's deactivating

strategies, which rely on negative representations of others and discourage emotional investment in close relationships. In contrast, self-reported attachment anxiety was associated with lower complexity of relationship representations, less positive "affect-tone of relationships," and poor understanding of social causality. That is, anxious people's TAT narratives were marked by global and undifferentiated representations of others, negative representations of close relationships (as threatening and harmful), and distorted and egocentric causal attributions for explaining interpersonal events. These findings fit with Mikulincer and Shaver's (2003) conceptualization of anxious people's hyperactivating strategies, which are based on negative (insecure) representations of others, discourage self-other differentiation, and create a chaotic, disorganized mental architecture that interferes with an accurate understanding of the social world.

Overall, this broad array of findings strongly confirms that attachment-style scales are appropriately associated with the content and structure of people's personal representations and narratives of attachment figures and attachment-relevant experiences. This confirmation is based on a variety of qualitative methods, such as coding descriptions of significant others (parents, romantic partners), coding narratives of interpersonal interactions, and coding stories generated in response to projective tests. Moreover, the findings depend on a variety of scoring systems, such as Blatt's object-representation scales, the CCRT scoring system, and the SCORS, which measure substantive and structural aspects of a person's representations of self, significant others, and close relationships. These studies provide impressive evidence for the validity of self-report attachment scales in tests of theory-derived predictions about personal narratives and mental representations.

The Socially Observable Nature of Self-Reported Differences in Attachment Style

Another purported strike against self-report attachment scales is that scores derived from them are a long way from actual social behavior (e.g., Crowell, Treboux, & Waters, 1999). That is, self-reports of attachment style are not observable behavioral attributes and are therefore unlikely to reflect actual behavior in close relationships. In contrast, AAI coders believe not only

that they are classifying people's mental and behavioral responses, but are doing so in ways that the people themselves could not match and, in some important cases, would not agree with. This argument is raised especially vigorously in relation to dismissingly avoidant people, who are believed "to distort, disorganize, or limit access to memories, feelings, intentions, and recognition of options" (Main, 1991, p. 146). According to this view, attachment avoidance can bias self-reports of attachment style and reduce the correspondence of these reports with actual behavior. For example, people who act avoidantly in close relationships may be unaware of their avoidance or may defensively deny their detachment and coolness, and therefore may rate themselves lower than they should on self-report items meant to detect avoidance. A similar critique might apply in the case of anxiously attached individuals, who may be reluctant to answer honestly on items that tap anxiety because anxious responses may be viewed as socially undesirable.

This criticism is amplified by the fact that research on attachment style has been dominated by correlational studies that examine associations between self-report measures of attachment and other self-report measures obtained from the same individual. As a result, some of the high correlations between attachment scales and other self-report measures may be attributable to shared-method variance, including shared social-desirability bias and other response-set biases. Despite the plausibility of this critique, evidence is accumulating that self-reports of attachment style are related to interpersonal behavior. Moreover, some adult attachment studies have included observer evaluations in addition to self-reports and have documented considerable correspondence between the two sources of information.

Several studies have included systematic observations of attachment-related behavior and have yielded theoretically coherent associations between these observations and self-report measures of anxiety and avoidance. For example, self-reports of attachment avoidance have been associated with less frequent engagement in actual support-seeking behavior – one core manifestation of deactivating strategies (Mikulincer & Shaver, 2003) – in anxiety-provoking situations (Collins & B. C. Feeney, 2000; Simpson et al., 1992; Simpson et al., 2002). Moreover,

self-reports of avoidance have been associated with less frequent engagement in actual proximity-seeking – another aspect of deactivation (Mikulincer & Shaver, 2003) – during separation from a romantic partner at an airport. The distant and emotionally uninvolved stance of self-reportedly avoidant people has been associated with less frequent verbal and non-verbal expressions of intimacy and commitment during actual conversations with a relationship partner (e.g., Grabill & Kerns, 2000; Guerrero, 1996; Mikulincer & Nachshon, 1991), and also in less frequent engagement in actual caregiving behavior in response to a partner's distress (e.g., Collins & B. C. Feeney, 2000; B. C. Feeney & Collins, 2001; Simpson et al., 1992).

Self-reports of attachment anxiety are associated with attachment-specific behaviors that follow from hyperactivating strategies. As discussed earlier, these self-reports are associated with stronger actual expressions of anger and hostility during anxiety-provoking situations and conflicting interpersonal interactions (Rholes et al., 1999; Simpson et al., 1996). Moreover, self-reports of attachment anxiety are associated with more frequent expressions of distress and anxiety during separation from a romantic partner at an airport (Fraley & Shaver, 1998) and during discussions with a romantic partner about closeness and distance (J. A. Feeney, 1998). In a recent study of married couples, J. A. Feeney and Hohaus (2001) found that self-reports of attachment anxiety are associated with a demeaning or belittling tone of voice while talking about caring for a spouse in times of need.

Another set of studies revealed high levels of convergence between self-reported attachment styles and external observers' ratings of participants' traits (e.g., Banai, Weller, & Mikulincer, 1998; Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994; Onishi, Gjerde, & Block, 2001). For example, Banai et al. (1998) compared a participant's own ratings of attachment style to those made about him or her by two-same sex friends, two opposite sex-friends, and a stranger who took part in a 5-minute getting-acquainted conversation with the participant. In this study, both discrete and continuous self-descriptions of a person's attachment anxiety and avoidance were significantly related to the same descriptions of the person provided by same-sex friends, opposite-sex friends, and a new acquaintance. Even more important, high

correlations were also found among the five external observers' ratings. In addition, the strength of the correlations between self-descriptions and descriptions provided by other people was similar to those found in studies of other well-known traits (e.g., Funder & Colvin, 1988). These findings indicate that self-reports of attachment anxiety and avoidance reflect real and socially observable personal attributes, and that their status is similar to that of other observable personality traits. Moreover, they suggest that a person's attachment orientation, as measured by self-report scales, is evident to interaction partners even in the very early stages of a relationship.

Overall, the findings reviewed in this section refute the argument that self-reports of attachment style are not manifested in actual behavior and instead are figments of a self-observer's biased imagination. Beyond this empirical evidence, the logic of the critics' argument against self-reports is at odds with the generally accepted conceptualization of attachment-related strategies of affect regulation (Cassidy, 1994). First, the contention that avoidant individuals are reluctant to endorse avoidant items because such items are socially undesirable is inconsistent with the documented goals of interpersonal distance and emotional detachment that guide deactivating strategies (Mikulincer & Shaver, 2003). For avoidant people, being distant and cool toward a relationship partner is not a problem, but a desirable way to manage close relationships. In fact, there is evidence that people who score high on avoidance scales are satisfied with cool and low-involvement relationships and tend to represent ideal relationships in terms of adequate distance and detachment (e.g., Collins & Read, 1990; J. A. Feeney & Noller, 1990). Second, the contention that anxious individuals are reluctant to endorse items indicating anxious attachment is also at odds with theoretical accounts of hyperactivating strategies, which entail presenting the self as weak, distressed, and vulnerable so as to elicit relationship partners' love and support (Mikulincer & Shaver, 2003). Research has shown that people who score high on attachment anxiety scales overemphasize problems, doubts, and worries when interacting with relationship partners (e.g., J. A. Feeney & Ryan, 1994; Simpson et al., 1996).

The Discriminant Validity of Self-Report Measures of Attachment Style

Beyond delineating the "nomothetic" network (Cronbach & Meehl, 1955) of theory-consistent empirical associations that establish the construct validity of attachment-style scales, attachment researchers also need to be concerned about these scales' discriminant validity. Do they overlap too much with measures of constructs viewed as theoretically unrelated to attachment organization? If so, it could be argued (e.g., Waters et al., 2002) that self-report measures of attachment style actually measure something other than individual differences in attachment-system functioning. According to Bernier and Dozier (2002), "perhaps the most widespread concern regarding attachment research is that we are tapping into a general personality construct that does not need attachment theory's rich and nuanced developmental conceptualizations to be explained" (p. 176).

Fortunately, the issue of discriminant validity has received empirical attention in adult attachment research (e.g., Griffin & Bartholomew, 1994; Shaver & Brennan, 1992). Existing studies demonstrate clearly that self-reports of attachment anxiety and avoidance, although correlating with a broad network of cognitive, emotional, and behavioral manifestations of hyperactivating and deactivating strategies, are not simply redundant with these constructs. Correlations between self-reports of attachment style and constructs derived from other theoretical or descriptive frameworks rarely exceed .50 (indicating less than 25% shared variance). This conclusion holds for associations between self-reported attachment anxiety and measures of neuroticism, trait anxiety, global distress, emotional intensity, emotion-focused ways of coping, self-esteem, self-efficacy, threat appraisal, relationship quality and satisfaction, cognitive representations of others, and intergroup attitudes (see J. A. Feeney, 1999; Shaver & Mikulincer, 2002, for reviews). It also holds for associations between self-reported avoidant attachment and measures of defensiveness, social desirability, coping by distancing, support seeking, mental representations of self and others, relationship quality, reactions to others' needs, and exploration and cognitive openness (see J. A. Feeney, 1999; Shaver & Mikulincer, 2002, for reviews).

Several studies have also shown that self-reports of anxiety and avoidance explain theory-relevant cognitions, emotions, and behaviors even after controlling statistically for attachment-irrelevant constructs. For example, Shaver and Brennan (1992) found that self-reports of attachment style were associated prospectively with relationship variables, such as relationship length, satisfaction, and commitment, even after controlling for the contribution of the "big five" traits – extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness. Other studies have shown that such associations were not explained by depression, dysfunctional beliefs, self-esteem, or sex-role orientation (e.g., Carnelley, Pietromonaco, & Jaffe, 1994; Jones & Cunningham, 1996; Whisman & Allan, 1996). In many of our own studies, associations between self-reports of attachment style and creative problem solving, intergroup hostility, reactions to others' needs, accessibility of mental representations of attachment figures, rejection sensitivity, and appraisal of interpersonal competencies are all significant even after controlling for positive mood, self-esteem, or trait anxiety (e.g., Mikulincer, Gillath, et al., 2001; Mikulincer, Gillath, & Shaver, 2002; Mikulincer & Shaver, 2001). These findings indicate that the nomothetic network of theory-consistent correlates of attachment style cannot be explained by other constructs that are theoretically distant from attachment processes and organization.

Our recent studies on the accessibility of representations of attachment figures (Mikulincer, Gillath, & Shaver, 2002) provide a powerful test of the discriminant validity of attachment-style scales. In these studies, we assessed the cognitive accessibility of names of people whom participants listed as serving proximity seeking, safe haven, and/or secure base functions (i.e., the names of security-enhancing attachment figures), names of close others who were not nominated as serving any attachment functions (close persons), and names of people a participant knew but to whom the participant was not close (acquaintances). Accessibility of mental representations of attachment figures was assessed in cognitive tasks (lexical decision, Stroop color-naming) following priming with threatening and non-threatening stimuli. We found that self-reports of attachment style significantly predicted accessibility of the names of security-

enhancing attachment figures, but not the names of close persons or acquaintances, *even when general anxiety was statistically controlled*. That is, attachment-style differences assessed via self-report measures were uniquely manifested in the accessibility of representations of specific attachment figures. Thus, we believe that attachment-style scales tap attachment-specific personal attributes rather than global, general cognitions and emotions.

The Developmental Origins of Self-Reported Attachment Style

Another frequently mentioned criticism of self-report studies of attachment is that they fail to examine the developmental roots of individual differences in anxiety and avoidance (e.g., Belsky, 2002; Bernier & Dozier, 2002). That is, although these studies provide important information about the cognitive, emotional, and behavioral manifestations of self-reported attachment patterns in adulthood, they fail to examine whether variations in these self-reports are systematically associated with childhood experiences. We agree that Bowlby (1982) was deeply interested in personality development, and that a core proposition of attachment theory is that attachment patterns are a function of lived experiences, especially actual experiences within the family of origin in the first few years of life. Therefore, a rigorous test of the construct validity of attachment-style scales should trace adult differences in anxiety and avoidance to childhood experiences.

Adult attachment studies have not provided much data linking self-reports of adult attachment style to measures of attachment orientation in infancy or attachment-related experiences in early childhood. Although a few AAI studies include data going back to the first year of life (e.g., Hamilton, 2000; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000; Weinfield, Sroufe, & Egeland, 2000), such studies are rare, their results are inconsistent, and they provide insufficient evidence about how adult attachment patterns emerge from childhood experiences (see Fraley, 2002, for a review and meta-analysis). This is an important issue, because Bowlby's theory is not only a theory of personality structure and functioning, although we believe it definitely is that; it is also a theory of personality development.

Although there is no systematic data on the developmental trajectory of self-reports of attachment anxiety and avoidance, there are some longitudinal studies examining continuity and change in these self-reports during adolescence and adulthood. For example, Kirkpatrick and Hazan (1994) found approximately 70% continuity in self-reported attachment types in a large, heterogeneous sample of adults over a period of four years. In addition, they found that instability in these self-reports was associated with changes in relationship status. Davila, Burge, and Hammen (1997) noted a similar degree of continuity in a sample of at-risk adolescent girls and showed that some of the discontinuity was theoretically explicable in terms of the experience of attachment-related events or personality dispositions. Klohnen and Bera (1998) examined longitudinal data from the Mills College sample at Berkeley – a group of women who were intensively studied from age 21 to 52 – and found that a simple self-report measure of attachment style at age 52 was systematically related to theoretically relevant variables going all the way back to age 21. Collins, Cooper, Albino, and Allard (2002) found that self-reports of attachment style during adolescence (average age = 16.8) predicted the nature and quality of romantic relationships 6 years later, in early adulthood. In a recent study, we followed up a sample of 85 mothers who completed attachment-style scales when their infants were diagnosed as suffering from congenital heart disease and asked them to complete the same scales 7 years later. The findings revealed considerable stability in self-reports of attachment style over the 7-year period – Pearson correlations of .58 and .56 for anxiety and avoidance, respectively.

There are also a number of retrospective studies that assess the extent to which individual differences in self-reports of attachment style in adulthood are associated with specific attachment-relevant childhood experiences. These studies have consistently found, for example, that retrospective reports of sexual or physical abuse during childhood or adolescence are associated with heightened reports of attachment anxiety and avoidance in clinical and community samples (e.g., Mallinckrodt, McCreary, & Robertson, 1995; Roche, Runtz, & Hunter, 1999; Shaver & Clark, 1994; Swanson & Mallinckrodt, 2001). There is also evidence that heightened reports of attachment insecurity in adulthood are related to the occurrence of

childhood experiences that are theoretically expected to have a long-term disturbing effect on the development of attachment security, such as parental drinking problems (Brennan, Shaver, & Tobey, 1991), parental death (Brennan & Shaver, 1998), and parental divorce (Brennan & Shaver, 1998; Lopez, Melendez, & Rice, 2000). However, other studies have failed to find an association between parental divorce and self-reported attachment style in adulthood (e.g., Brennan & Shaver, 1993; Tayler, Parker, & Roy, 1995).

Studies conducted in Mikulincer's laboratory in Israel revealed that young adults who experienced the death of their father or the divorce of their parents before age 4 reported higher attachment anxiety and avoidance than young adults who grew up in intact families or whose parents divorced after age of 4 (see Table 2). In addition, young adults who were raised with communal sleeping arrangements in Israeli kibbutzim – an ecological factor that was found to disrupt secure attachment in childhood (Sagi et al., 1994) – scored higher on scales of attachment anxiety and avoidance than young adults who grew up in Kibbutzim where family sleeping arrangements were the norm (see Table 2). A similar pattern of findings was recently reported in a study of young Israeli women (Sharabany, Mayseless, Edri, & Lulav, 2001).

These studies are not sufficient to make a strong case for continuity, change, or developmental origins of self-reports of adult attachment patterns. They suggest, however, that prospective studies would turn up theoretically meaningful childhood antecedents of adult patterns. Nevertheless, even when good longitudinal studies have traced self-reports of attachment anxiety and avoidance back to childhood experiences, we do not expect the developmental trajectory of these self-reports to be simple. In our view, adult attachment patterns are affected by childhood experiences, adolescent experiences, recent experiences in adult relationships, and a broad array of contextual factors that can moderate or even override the effects of internalized representations of past experiences. In fact, Bowlby (1988) claimed that working models can be updated throughout life and that attachment relationships in adulthood can affect the organization and functioning of the attachment system. If this were not the case, psychotherapy – including the therapy conducted by Bowlby (1988) himself – would be useless.

Concluding Remarks

There is substantial and growing evidence that criticisms of self-report attachment measures raised by researchers from the AAI tradition are invalid. Our review of empirical data indicates that self-report measures are reasonably accurate indicators of (a) unconscious, implicit attachment-relevant processes, (b) dismissing and preoccupied strategies of information processing, and (c) thematic and structural properties of a person's narratives concerning attachment experiences and relationships. Our review also reveals that individual differences in self-report attachment scores are associated with observable interpersonal behavior, cannot be explained by alternative constructs and theories unrelated to the organization and functioning of the attachment system, and are related to relevant childhood experiences (e.g., abuse, losses). These findings add to the construct validity of self-report attachment measures and bolster our confidence in these measures as suitable instruments for exploring the psychodynamics and interpersonal processes addressed by attachment theory.

Despite the lack of empirical grounds for dismissing the self-report approach, further work is still needed to improve self-report measures. First, there is still some debate about the underlying dimensions of self-report attachment measures. Whereas most adult attachment studies are based on a two-dimensional model of anxiety (or model of self) and avoidance (or model of other), other studies suggest that it might be useful to rotate the axes of the measurement space and assess individual variations in security-insecurity and anxiety-avoidance (e.g., Asendorf, Banse, Wilpers, & Neyer, 1997; Banse, in press; Elitzur & Mintzer, in press). For example, Asendorf et al. (1997) consistently found for various samples, including married couples, that the data followed a model with a primary secure-fearful dimension and a secondary anxiety-avoidance dimension. In this model, all of the insecure styles correlate negatively with the secure style. This 45-degree rotation of the measurement axes fits well with the process model proposed by Shaver and Mikulincer (2002), a model in which the appraisal of threat, attachment figure availability, and feasibility of hyperactivating and deactivating strategies occur

in sequence. The rotated axes are also congruent with Kobak et al.'s (1993) and Fyffe and Waters's (1997) two-dimensional scoring systems for the AAI.

Second, in future studies it would be useful to assess both relationship-specific and generalized self-reports of attachment style and then examine associations between these two levels of assessment in different relational, age, and cultural contexts. At present, we know relatively little about the hierarchical arrangement of attachment working models first delineated by Collins and Read (1994). We also know little about the effects of different instructions in self-report measures of attachment. Should such measures refer to a specific relationship, to one's history of romantic relationships, to all close relationships? Some of our studies show that attachment style can be meaningfully measured at a fairly abstract level, with the resulting scores relating predictably to intergroup tolerance, responses to others' needs, and interpersonal behavior (e.g., Mikulincer & Nachshon, 1991; Mikulincer et al., 2001; Mikulincer & Shaver, 2001). Thus, secure and insecure attachment orientations are relevant to much more than primary attachment relationships.

Third, researchers should attempt to extend the use of self-report attachment measures to different age groups (children, elderly adults) and cultures and to adapt existing measures for use in different cultures. The applicability of infant-parent attachment theory to non-Western cultures has been documented and debated (e.g., Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000; van Ijzendoorn & Sagi, 1999), but cross-cultural studies of adult attachment are relatively rare.

Finally, researchers should look more carefully at detailed relations between AAI scores, including coder rating scales and secure-insecure and avoidance-anxiety dimension scores, on the one hand, and self-report avoidance and anxiety scores, on the other. Moreover, relations between these two kinds of measures and other experimental, physiological, and behavioral measures should be examined together and compared. In this way, we will learn more about the dynamics and functioning of the attachment system and the way it is mapped by various kinds of measures.

References

Armsden, G. C., & Greenberg, M. T. (1987). The Inventory of Parent and Peer Attachment: Relationships to well-being in adolescence. *Journal of Youth and Adolescence, 16*, 427-454.

Asendorf, J. B., Banse, R., Wilpers, S., & Neyer, F. J. (1997). Relationship-specific attachment scales for adults and their validation with network and diary procedures. *Diagnostica, 43*, 289-313. (in German).

Baldwin, M. W., Fehr, B., Keedian, E., & Seidel, M. (1993). An exploration of the relational schemata underlying attachment styles: Self-report and lexical decision approaches. *Personality and Social Psychology Bulletin, 19*, 746-754.

Baldwin, M. W., & Meunier, J. (1999). The cued activation of attachment relational schemas. *Social Cognition, 17*, 209-227.

Banai, E., Weller, A., & Mikulincer, M. (1998). Interjudge agreement in evaluation of adult attachment style: The impact of acquaintanceship. *British Journal of Social Psychology, 37*, 95-109.

Banse, R. (in press). Adult attachment and marital satisfaction: Evidence for dyadic configuration effects. *Journal of Social and Personal Relationships*.

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.

Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment: Do they converge? In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25-45). New York: Guilford Press.

Belsky, J. Developmental origins of attachment styles. *Attachment and Human Development, 4*, 166-170.

Bernier, A., & Dozier, M. (2002). Assessing adult attachment: Empirical sophistication and conceptual bases. *Attachment and Human Development, 4*, 171-179.

Blatt, S. J., Chevron, S. E., Quinlan, D. M., Schaffer, C. E., & Wein, S. (1992). *The assessment of qualitative and structural dimensions of object representations*. Unpublished Manuscript, Yale University.

Bowlby, J. (1982/1969). Attachment and loss: Vol. 1. Attachment (2nd ed.). New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.

Bowlby, J. (1988). *A secure base: Clinical applications of attachment theory*. London: Routledge.

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 Press.

Brennan, K. A., & Shaver, P. R. (1993). Attachment styles and parental divorce. *Journal of Divorce and Remarriage, 21,* 161-175.

Brennan, K. A., & Shaver, P. R. (1998). Attachment styles and personality disorders: Their connections to each other and to parental divorce, parental death, and perceptions of parental caregiving. *Journal of Personality, 66,* 835-878.

Brennan, K. A., Shaver, P. R., & Tobey, A. E. (1991). Attachment styles, gender, and parental problem drinking. *Journal of Social and Personal Relationships, 8,* 451-466.

Carnelley, K. B., Pietromonaco, P. R., & Jaffe, K. (1994). Depression, working models of others, and relationship functioning. *Journal of Personality and Social Psychology, 66*, 127-140.

Carpenter, E.M., & Kirkpatrick, L. A. (1996). Attachment style and presence of a romantic partner as moderators of psychophysiological responses to a stressful laboratory situation. *Personal Relationships, 3*, 351-367.

Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. *Monographs of the Society for Research in Child Development, 59*, 228-283.

Chartrand, T. L., & Bargh, J. A. (2002). Nonconscious motivations: Their activation, operation, and consequences. In A. Tesser & D. A. Stapel (Eds.), *Self and motivation: Emerging psychological perspectives* (pp. 13-41). Washington, DC: American Psychological Association.

Collins, N. L., Cooper, M. L., Albino, A., & Allard, L. (2002). Psychosocial vulnerability from adolescence to adulthood: A prospective study of attachment style differences in relationship functioning and partner choice. *Journal of Personality, 70*, 965-1008.

Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology, 78*, 1053-1073.

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58*, 644-663.

Collins, N. L., & Read, S. J. (1994). Cognitive representations of attachment: The structure and function of working models. In K. Bartholomew & D. Perlman (Eds.), *Attachment processes in adulthood* (pp. 53-92). London: Jessica Kingsley.

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*, 281-302.

Crowell, J. A., Fraley, R. C., & Shaver, P. R. (1999). Measurement of adult attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 434-465). New York: Guilford Press.

Crowell, J. A., & Treboux, D. (1995). A review of adult attachment measures: Implications for theory and research. *Social Development, 4,* 294-327.

Crowell, J. A., Treboux, D., Gao, Y., Fyffe, C., Pan, H., & Waters, E. (2002). Assessing secure base behavior in adulthood: Development of a measure, links to adult attachment representations, and relations to couples' communication and reports of relationships. *Developmental Psychology, 38*, 679-693.

Crowell, J. A., Treboux, D., & Waters, E. (1999). The Adult Attachment Interview and the Relationship Questionnaire: Relations to reports of mothers and partners**.** *Personal Relationships, 6*, 1-18.

Crowell, J. A., Treboux, D., & Waters, E. (2002). Stability of attachment representations: The transition to marriage. *Developmental Psychology, 38*, 467-479.

Davila, J., Burge, D., & Hammen, C. (1997). Why does attachment style change? *Journal of Personality and Social Psychology, 73*, 826-838.

Dolev, T. (2001). *Adult attachment style and the suppression of separation-related thoughts in the Stroop task: The moderating effects of cognitive load*. Unpublished Master's Thesis, Bar-Ilan University.

Elizur, Y., & Mintzer, A. (in press). Gay males' intimate relationship quality: The roles of attachment security, gay identity, and social support. *Personal Relationships*.

Exner, J. E., Jr (1993). *The Rorschach: A comprehensive system, Vol. 1: Basic foundations* (3rd ed.). Oxford, England: John Wiley and Sons.

Feeney, B. C., & Collins, N. L. (2001). Predictors of caregiving in adult intimate relationships: An attachment theoretical perspective. *Journal of Personality and Social Psychology, 80,* 972-994.

Feeney, B. C., & Kirkpatrick, L. A. (1996). Effects of adult attachment and presence of romantic partners on physiological responses to stress. *Journal of Personality and Social Psychology, 70*, 255-270.

Feeney, J. A. (1998). Adult attachment and relationship-centered anxiety: Responses to physical and emotional distancing. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 189-218). New York: Guilford Press.

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 Press.

Feeney, J. A., & Hohaus, L. (2001). Attachment and spousal caregiving. *Personal Relationships, 8*, 21-39.

Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. *Journal of Personality and Social Psychology, 58*, 281-291.

Feeney, J. A., & Noller, P. (1991). Attachment style and verbal descriptions of romantic partners. *Journal of Social and Personal Relationships, 8*, 187-215.

Feeney, J. A., Noller, P., & Hanrahan, M. (1994). Assessing adult attachment: Developments in the conceptualization of security and insecurity. In M. B. Sperling & W. H. Berman (Eds.), *Attachment in adults: Clinical and developmental perspectives* (pp. 128-152). New York: Guilford Press.

Feeney, J. A., & Ryan, S. M. (1994). Attachment style and affect regulation: Relationships with health behavior and family experiences of illness in a student sample. *Health Psychology, 13*, 334-345.

Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review, 6*, 123-151.

Fraley, R. C., Garner, J. P., & Shaver, P. R. (2000). Adult attachment and the defensive regulation of attention and memory: Examining the role of preemptive and postemptive defensive processes. *Journal of Personality and Social Psychology, 79*, 816-826.

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. (1998). Airport separations: A naturalistic study of adult attachment dynamics in separating couples. *Journal of Personality and Social Psychology, 75*, 1198-1212.

Funder, D. C., & Colvin, C. R. (1988). Friends and strangers: Acquaintanceship, agreement, and the accuracy of personality judgment. *Journal of Personality and Social Psychology, 55*, 149-158.

Fyffe, C., & Waters, E. (1997, April). *Empirical classification of adult attachment status: Predicting group membership.* Poster presented at the biennial meeting of the Society for Research in Child Development, Washington, DC.

Gal, Y. (2002). *Emotional and cognitive manifestations of adult attachment styles in the Rorschach test*. Unpublished Master's Thesis, Bar-Ilan University.

George, C., Kaplan, N., & Main, M. (1985). *The Adult Attachment Interview*. Unpublished manuscript, University of California, Berkeley.

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 Press.

Gilad, G. (2002). *The integration of object relations theory and attachment theory: Object representations in the Thematic Apperception Test*. Unpublished Master's Thesis, Bar-Ilan University.

Grabill, C. M., & Kerns, K. A. (2000). Attachment style and intimacy in friendship. *Personal Relationships, 7*, 363-378.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*, 1464-1480.

Griffin, D. W., & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology, 67*, 430-445.

Guerrero, L. K. (1996). Attachment-style differences in intimacy and involvement: A test of the four-category model. *Communication Monographs, 63*, 269-292.

Hamilton, C. (2000). Continuity and discontinuity of attachment from infancy to adolescence. *Child Development, 71*, 690-694.

Hazan, C., & Shaver, P. R. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524.

Hesse, E. (1999). The Adult Attachment Interview: Historical and current perspectives. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 395-433). New York: Guilford Press.

Jacobvitz, D., Curran, M., & Moller, N. (2002). Measurement of adult attachment: The place of self-report and interview methodologies. *Attachment and Human Development, 4*, 207-215.

Jones, J. T., & Cunningham, J. D. (1996). Attachment styles and other predictors of relationship satisfaction in dating couples. *Personal Relationships, 3*, 387-399.

Kirkpatrick, L. A., & Hazan, C. (1994). Attachment styles and close relationships: A four-year prospective study. *Personal Relationships, 1*, 123-142.

Klohnen, E. C., & Bera, S. (1998). Behavioral and experiential patterns of avoidantly and securely attached women across adulthood: A 31-year longitudinal perspective. *Journal of Personality and Social Psychology, 74*, 211-223.

Kobak, R. R., Cole, H. E., Ferenz-Gillies, R., Fleming, W. S., & Gamble, W. (1993). Attachment and emotion regulation during mother-teen problem solving: A control theory analysis. *Child Development, 64*, 231-245.

Levy, K. N., Blatt, S. J., & Shaver, P. R. (1998). Attachment styles and parental representations. *Journal of Personality and Social Psychology, 74*, 407-419.

Lopez, F. G., Melendez, M. C., & Rice, K. G. (2000). Parental divorce, parent-child bonds, and adult attachment orientations among college students: A comparison of three racial/ethnic groups. *Journal of Counseling Psychology, 47*, 177-186.

Luborsky, L., & Chris-Christoph, P. (1998). *Understanding transference: The CCRT method*. Washington, DC: American Psychological Association.

Lyons-Ruth, K., & Jacobvitz, D. (1999). Attachment disorganization: Unresolved loss, relational violence, and lapses in behavioral and attentional strategies. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 520-554). New York: Guilford Press.

Main, M. (1991). Metacognitive knowledge, metacognitive monitoring, and singular (coherent) vs. multiple (incoherent) models of attachment: Findings and directions for future research. In C. M. Parkes, J.Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the life cycle* (pp. 127-159). London: Routledge.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. *Monographs of the Society for Research in Child Development, 50*, 66-104.

Mallinckrodt, B., McCreary, B. A., & Robertson, A. K. (1995). Co-occurrence of eating disorders and incest: The role of attachment, family environment, and social competencies. *Journal of Counseling Psychology, 42*, 178-186.

Mathews, A., & MacLeod, C. (1985). Selective processing of threat cues in anxiety states. *Behavior Research and Therapy, 23,* 563-569.

Mayseless, O., Danieli, R., & Sharabany, R. (1996). Adults' attachment patterns: Coping with separations. *Journal of Youth and Adolescence, 25*, 667-690.

Meyer, D., & Schvaneveldt, R. W. (1971). Facilitation in recognizing pairs of words: Evidence of dependence between retrieval operations. *Journal of Experimental Psychology, 90*, 227-234.

Mikulincer, M. (1998a). Attachment working models and the sense of trust: An exploration of interaction goals and affect regulation. *Journal of Personality and Social Psychology, 74,* 1209-1224.

Mikulincer, M. (1998b). Adult attachment style and individual differences in functional versus dysfunctional experiences of anger. *Journal of Personality and Social Psychology, 74,* 513-524.

Mikulincer, M., Birnbaum, G., Woddis, D., & Nachmias, O. (2000). Stress and accessibility of proximity-related thoughts: Exploring the normative and intraindividual components of attachment theory. *Journal of Personality and Social Psychology, 78,* 509-523.

Mikulincer, M., Florian, V., & Hirschberger, G. (2002, January). *The dynamic interplay of global, relationship-specific, and contextual representations of attachment security*. Paper presented at the annual meetings of the Society for Personality and Social Psychology conference, Savannah, GA.

Mikulincer, M., Florian, V., & Tolmacz, R. (1990). Attachment styles and fear of personal death: A case study of affect regulation. *Journal of Personality and Social Psychology, 58,* 273-280.

Mikulincer, M., Gillath, O., Halevy, V., Avihou, N., Avidan, S., & Eshkoli, N. (2001). Attachment theory and reactions to others' needs: Evidence that activation of the sense of attachment security promotes empathic responses. *Journal of Personality and Social Psychology, 81,* 1205-1224.

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.

Mikulincer, M., & Nachshon, O. (1991). Attachment styles and patterns of self-disclosure. *Journal of Personality and Social Psychology, 61,* 321-331.

Mikulincer, M., & Orbach, I. (1995). Attachment styles and repressive defensiveness: The accessibility and architecture of affective memories. *Journal of Personality and Social Psychology, 68,* 917-925.

Mikulincer, M., & Shaver, P. R. (2001). Attachment theory and intergroup bias: Evidence that priming the secure base schema attenuates negative reactions to out-groups. *Journal of Personality and Social Psychology, 81,* 97-115.

Mikulincer, M, & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology (*Vol. *35)*. New York: Academic Press.

Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological Inquiry, 12*, 177-196.

Onishi, M., Gjerde, P. F., & Block, J. (2001). Personality implications of romantic attachment patterns in young adults: A multi-method, multi-informant study. *Personality and Social Psychology Bulletin, 27*, 1097-1110.

Pottharst, K. (ed.) (1990). *Explorations in adult attachment*. New York: Peter Lang.

Priel, B., & Besser, A. (2001). Bridging the gap between attachment and object relations theories: A study of the transition to motherhood. *British Journal of Medical Psychology, 74*, 85-100.

Raz, A. (2002). *Personality, core relationship themes, and interpersonal competence among young adults experiencing difficulties in establishing long-term relationships*. Unpublished PhD dissertation, Haifa University.

Rholes, W. S., Simpson, J. A., & Orina, M. M. (1999). Attachment and anger in an anxiety-provoking situation. *Journal of Personality and Social Psychology, 76*, 940-957.

Roche, D. N., Runtz, M. G., & Hunter, M. A. (1999). Adult attachment: A mediator between child sexual abuse and later psychological adjustment. *Journal of Interpersonal Violence, 14*, 184-207.

Rom, E., & Mikulincer, M. (in press). Attachment theory and group processes: The association between attachment style and group-related representations, goals, memories, and functioning. *Journal of Personality and Social Psychology.*

Rorschach, H. (1942). [*Psychodiagnostics: A diagnostic test based on perception*]. (P. Lenkau & B. Kroneberg, Tran.) New York: Grune & Stratton.

Rothbaum, F., Weisz, J., Pott, M., Miyake, K., & Morelli, G. (2000). Attachment and culture: Security in the United States and Japan. *American Psychologist, 55*, 1093-1104.

Sagi, A., van IJzendoorn, M. H., Aviezer, O., & Donnell, F. (1994). Sleeping out of home in a kibbutz communal arrangement: It makes a difference for infant-mother attachment. *Child Development, 65*, 992-1004.

Sharabany, R., Mayseless, O., Edri, G., & Lulav, D. (2001). Ecology, childhood experiences, and adult attachment styles of women in the kibbutz. *International Journal of Behavioral Development, 25*, 214-225.

Shaver, P. R., Belsky, J., & Brennan, K.A. (2000). The adult attachment interview and self-reports of romantic attachment: Associations across domains and methods. *Personal Relationships, 7*, 25-43.

Shaver, P. R., & Brennan, K. A. (1992). Attachment styles and the "big five" personality traits: Their connections with each other and with romantic relationship outcomes. *Personality and Social Psychology Bulletin, 18,* 536-545.

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.

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment and Human Development, 4*, 133-161.

Simpson, J. A. (1990). 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.

Simpson, J. A., Rholes, W. S., Orina, M. M., & Grich, J. (2002). Working models of attachment, support giving, and support seeking in a stressful situation. *Personality and Social Psychology Bulletin, 28*, 598-608.

Simpson, J. A., Rholes, W. S., & Phillips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology, 71*, 899-914.

Stroop, J. R. (1938). Factors affecting speed in serial verbal reactions. *Psychological Monographs, 50,* 38-48

Swanson, B., & Mallinckrodt, B. (2001). Family environment, love withdrawal, childhood sexual abuse, and adult attachment. *Psychotherapy Research, 11*, 455-472.

Tayler, L., Parker, G., & Roy, K. (1995). Parental divorce and its effects on the quality of intimate relationships in adulthood. *Journal of Divorce and Remarriage, 24*, 181-202.

van IJzendoorn, M. H. (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin, 117*, 387-403.

Van IJzendoorn, M. H., & Sagi, A. (1999). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 713-734). New York: Guilford Press.

Waters, E., Crowell, J.A., Elliott, M., Corcoran, D., & Treboux, D. (2002). Bowlby's secure base theory and the social/personality psychology of attachment styles: Work(s) in progress. *Attachment and Human Development, 4*, 230-242.

Waters, E., Merrick, S., Treboux, D., Crowell, J., & Albersheim, L. (2000). Attachment stability in infancy and early adulthood: A 20-year longitudinal study. *Child Development, 71*, 684-689.

Wegner, D. M., & Smart, L. (1997). Deep cognitive activation: A new approach to the unconscious. *Journal of Consulting and Clinical Psychology, 65*, 984-995.

Weinfield, N., Sroufe, L. A., & Egeland, B. (2000). Attachment from infancy to early adulthood in a high-risk sample: Continuity, discontinuity, and their correlates. *Child Development, 71*, 695-702.

West, M. L., Sheldon, A. E. R., & Reiffer, L. (1987). An approach to the delineation of adult attachment: Scale development and reliability. *Journal of Nervous and Mental Disease, 175*, 738-741.

Westen, D. (1991). Clinical assessment of object relations using the TAT. *Journal of Personality Assessment, 56*, 56-74.

Whisman, M. A., & Allan, L. E. (1996). Attachment and social cognition theories of romantic relationships: Convergent or complementary perspectives? *Journal of Social and Personal Relationships, 13*, 263-278.

Woike, B. A., Osier, T. J., & Candela, K. (1996). Attachment styles and violent imagery in thematic stories about relationships. *Personality and Social Psychology Bulletin, 22*, 1030-1034.

Zayas, V., Shoda, Y., & Ayduk, O. N. (2002). Personality in context: An interpersonal systems perspective. *Journal of Personality, 70*, 851-900.

Table 1

Pearson Correlations between Self-Report Attachment Scores and the Description of Relationship with Mother during Childhood

Description of Relationship with Mother during Childhood	Attachment Avoidance	Attachment Anxiety
Positivity of semantic description	-.08	-.31*
Positivity of narrative description	-.38**	-.33**
Discrepancy of semantic-narrative levels	.39**	.09
Time for retrieving episodic memories	.36**	-.05

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

Table 2

Means and SDs of Self-Report Attachment Scores According to Study Groups

		Attachment Avoidance		Attachment Anxiety	
Study Groups	N	M	SD	M	SD
Paternal Death Study					
Father death before child's age 4	50	3.76	1.24	3.87	1.25
Intact Family	50	3.02	1.27	3.09	1.24
F (1, 98)		8.57**		9.79**	
Parental Divorce Study					
Divorce before child's age 4	40	3.89	1.29	3.96	1.38
Divorce between ages 4 and 9	40	3.01	0.97	3.27	1.31
Divorce after age 10	40	2.88	1.20	3.18	1.32
Intact Family	40	3.05	1.26	3.13	1.25
F (3, 156)		6.02**		3.53*	
Sleeping Arrangement Study					
Communal sleeping arrangement	55	3.58	1.32	3.79	1.17
Family sleeping arrangement	55	2.94	1.23	3.16	1.15
F (1, 108)		6.80*		8.12*	

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