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Rorschach Correlates of Self-Reported Attachment Dimensions: Dynamic Manifestations of Hyperactivating and Deactivating Strategies

Ety Berant and Mario Mikulincer

Department of Psychology
Bar-Ilan University

Phillip R. Shaver

Department of Psychology
University of California, Davis

Yaacov Segal

Department of Psychology
Bar-Ilan University

We examined associations between self-reported attachment anxiety and avoidance and responses to the Rorschach test. Seventy-two, nonpatient Israeli adults participated in a 2-session study. In the first session, they completed a self-report scale tapping the dimensions of attachment anxiety and attachment avoidance. In the second session, they completed the Rorschach test. The Rorschach was administered and coded according to Exner's (2001) Comprehensive System scoring. We found that self-reports of attachment anxiety were associated with Rorschach scores thought to indicate difficulties in regulating and controlling emotions and self-perceptions of being relatively helpless and unworthy. Self-reports of attachment avoidance were associated with Rorschach scores thought to reflect lack of acknowledgment of need states and maintenance of a grandiose self. We discuss the findings in terms of implicit psychodynamic processes inherent in attachment-system functioning.

In recent years, individual differences in attachment-related anxiety and avoidance (Hazan & Shaver, 1987; Shaver & Hazan, 1993) assessed by self-report measures have been empirically linked to cognition, affect, and behavior in interpersonal settings (for reviews, see Mikulincer & Shaver, 2003, and Shaver & Mikulincer, 2002). In a recent integrative model, Mikulincer and Shaver (2003) summarized and integrated scores of research findings in terms of two affect-regulation strategies (hyperactivating and deactivating strategies) thought to underlie the two major attachment-style dimensions. Most of the studies published to date, however, have focused on explicit, conscious manifestations of the strategies rather than the implicit, unconscious processes theorized to be part of the operation of what Bowlby (1969/1982) called the "attachment behavioral system." As a result, there has been

continuing controversy about the ability of self-report, attachment-style measures to capture differences in underlying unconscious processes. The study we report here begins to fill this gap by examining associations between self-reports of attachment-related anxiety and avoidance on one hand and responses to the Rorschach (1921/1942) inkblot test—the most frequently used clinical instrument for assessing unconscious psychodynamic processes.

ATTACHMENT THEORY AND RESEARCH ON ADULT ATTACHMENT STYLE

One of the basic assumptions of Bowlby's (1973, 1980, 1969/1982) theory is that interactions with significant others are internalized in the form of internal working models of

self and others. These models include strategies and procedures that affect close relationships and affect regulation throughout life (Shaver & Mikulincer, 2002). To summarize the theory briefly, interactions with relationship partners who are available and supportive in times of need lead to the formation of both a sense of attachment security and internal working models of self and others that are generally positive. These models and the associated sense of security provide an important foundation for mental health. When close relationship partners ("attachment figures" in Bowlby's, YEAR, terms) are rejecting or unavailable in times of need, however, the sense of attachment security is undermined, secondary defensive strategies (hyperactivating and deactivating strategies) are adopted, negative models of self and others are formed, and the likelihood of good mental health decreases.

When examining these theoretical ideas in studies of adults, most researchers have focused on a person's *attachment style*—the systematic pattern of relational expectations, emotions, and behaviors that results from internalization of a particular history of attachment experiences (Fraley & Shaver, 2000). Initially, adult attachment research was based on Ainsworth, Blehar, Waters, and Wall's (1978) typology of attachment styles in infancy—which included categories labeled secure, anxious, and avoidant—and on Hazan and Shaver's (1987) conceptualization of parallel adult styles in the romantic and marital domains. Subsequent studies (e.g., Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998) have revealed, however, that typological, categorical measures of attachment style did not provide an optimally precise characterization of attachment organization and that a person's attachment style could be better represented as a region in a two-dimensional space, which conceptually parallels the space defined by two discriminant functions in Ainsworth et al.'s (1978) early summary of research on infant–mother attachment (see Ainsworth et al.'s, 1978, Figure 10, p. 102).

In 1998, Brennan et al. conducted a factor analysis of all existing English-language self-report measures of attachment style and discovered that all of them could be reduced to two orthogonal dimensions. The two dimensions defining the space are now generally called *attachment anxiety,* defined by items tapping fear of rejection, separation, and abandonment, and *attachment avoidance,* defined by items tapping discomfort with intimacy and dependency. (For a similar analysis of individual differences among infants in Ainsworth et al.'s [1978] "strange situation" assessment procedure, see Fraley & Spieker, 2003.)

In this two-dimensional space, what was formerly called a "secure attachment style" is associated with the region in which both anxiety and avoidance are low. This region is defined by confidence in a partner's love and supportiveness and by comfort with closeness and interdependence. What was called the "anxious attachment style" refers to a region in which the fear of separation and abandonment (attachment anxiety) is high and avoidance is low. What was called the

"avoidant attachment style" refers to a region in which discomfort with intimacy and dependency (attachment avoidance) is high. In Ainsworth et al.'s (1978) original diagram of the two-dimensional space, avoidant infants occupied mainly the region in which avoidance was high and anxiety was low. In adult attachment research, Bartholomew and Horowitz (1991) drew a distinction between "dismissing avoidance" (high avoidance and low anxiety) and "fearful avoidance" (high scores on both the avoidance and anxiety dimensions.)

According to research based on the two-dimensional model of attachment styles, a person's style can be determined by having him or her complete self-report measures of attachment-related anxiety and avoidance (Brennan et al., 1998). These scales, which are parts of the Experience in Close Relationships Scale (ECR; Brennan et al., 1998), are highly reliable in both the internal consistency and test–retest senses, and their construct, predictive, and discriminant validity have been repeatedly demonstrated. (For a review of measurement issues, see Crowell, Fraley, & Shaver, 1999 and for a review of substantive studies, Mikulincer & Shaver, 2003.) The two scales were conceptualized as independent and like the two discriminant functions reported by Ainsworth et al. (1978) have in fact been uncorrelated in most studies (e.g., Brennan et al., 1998; Mikulincer & Florian, 2000; Mikulincer & Shaver, 2001.) A person can score low on the two dimensions (being confident of a partner's love and comfortable with closeness), high on a single dimension, or high on both dimensions (expressing both fear of rejection and discomfort with closeness). In the study reported here, we assessed participants' scores on the continuous dimensions of attachment-related anxiety and avoidance without assigning participants to discrete attachment categories.

In formulating their model of attachment-related psychodynamics in adulthood, Mikulincer and Shaver (2003) theorized that individual differences on self-report scales of attachment anxiety and avoidance reflect the underlying action of what Main (1990) and Cassidy and Kobak (1988) called secondary attachment strategies. The primary strategy is to seek comfort and support from a person who is recognized as a reliably available attachment figure, whereas the secondary strategies are attempts to deal with attachment-figure unavailability and the resulting sense of insecurity. The secondary strategies have broad intrapsychic and interpersonal implications and are manifested in a person's psychological responses to attachment- and threat-related events.

According to Mikulincer and Shaver (2003), the hyperactivating strategies (Cassidy & Kobak, 1988) are characteristic of people who score high on measures of attachment anxiety. The main goal of these strategies is to force a relationship partner, perceived as insufficiently available and responsive, to pay greater attention and provide better protection and support. The basic means for attaining this goal is to maintain the attachment system in an activated state (e.g., by searching, pleading, demanding, intruding) until a partner is perceived to be adequately available and a

sense of at least temporarily increased security is attained. Hyperactivating strategies include very energetic and insistent attempts to elicit a partner's involvement, care, and support through noisy, demanding, clinging actions and cognitive efforts to minimize perceived distance from the partner (Shaver & Hazan, 1993). These strategies encourage overdependence on relationship partners (Shaver & Hazan, 1993) and foster perceptions of oneself as relatively helpless and unable to regulate affect (Mikulincer & Florian, 1998).

In their model, Mikulincer and Shaver (2003) summarized the major cognitive and affective implications of hyperactivating strategies. These strategies result in a tendency to detect threats in nearly every interpersonal transaction and to exaggerate the potential negative consequences of these threats because cues to threat are highly relevant to needing and seeking security. Hyperactivating strategies intensify emotional responses to attachment- and threat-related events and encourage rumination on attachment- and threat-related concerns, keeping them active in working memory. Hyperactivating strategies also produce a self-amplifying cycle of distress in which chronic attachment-system activation interferes with engagement in nonattachment-related activities and increases the likelihood that new sources of distress will mingle with old ones. In support of this view, research has shown that self-reports of attachment anxiety are associated with intense emotional reactions, chronic distress, negative views of self, and rumination on threat-related experiences (e.g., Bartholomew & Horowitz, 1991; Mikulincer, 1995; Mikulincer & Florian, 1998). In addition, Mikulincer and Orbach (1995) found that people who score high on attachment anxiety maintain ready access to painful memories and exhibit an automatic spread of negative emotion from one remembered incident to another.

According to Mikulincer and Shaver (2003), deactivating strategies are characteristic of people who score high on attachment avoidance. These strategies stem from appraising proximity seeking as a faulty or dangerous means of dealing with attachment insecurity, which leads to inhibition of support seeking and commitment to handling distress alone (a stance that Bowlby, 1969/1982, called "compulsive self-reliance"). The goal of deactivating strategies is to keep the attachment system down regulated to avoid the frustration and pain associated with attachment-figure unavailability. Pursuing this goal leads to denial of attachment needs; avoidance of intimacy and dependence in close relationships; maximization of cognitive, emotional, and physical distance from others; and striving for self-reliance and independence. In addition, deactivating strategies foster personal disengagement and detachment from challenging and demanding social interactions, which are viewed as potential sources of threat that can reactivate the attachment system. Deactivating strategies favor dismissal of the personal value and challenging aspects of person–environment transactions (Mikulincer & Shaver, 2003). In addition, because personal weaknesses threaten a self-reliant individual's only source of

protection and lead to reactivation of the attachment system, deactivating strategies motivate a person to deny personal imperfections and vulnerabilities and to maintain an overly positive, narcissistic self-façade (Mikulincer, 1995).

Extensive evidence links avoidant attachment with deactivating strategies. Self-reports of attachment-related avoidance are associated with low levels of intimacy and emotional investment in close relationships, dismissal of the benefits and challenges of social interaction, suppression of attachment-related thoughts, lack of cognitive access to negative self-representations, and projection of negative self-traits onto others (e.g., Collins & Read, 1990; Fraley & Shaver, 1997; Mikulincer, 1995, Mikulincer & Horesh, 1999; Pietromonaco & Feldman Barrett, 1997). Mikulincer (1998) reported that people who scored high on attachment avoidance exhibited defensive self-enhancement following threats. Mikulincer (1998) exposed research participants to threatening or neutral situations and found that avoidant people made more positive self-appraisals following threatening as compared with neutral situations.

The intrapersonal and interpersonal manifestations of hyperactivating and deactivating strategies have been documented not only in studies using self-report measures but also in studies relying on observational and cognitive experimental techniques (e.g., Baldwin, Fehr, Keedian, & Seidel, 1993; Collins & Feeney, 2000; Fraley & Shaver, 1997, 1998; Simpson, Rholes, & Nelligan, 1992). Nonetheless, with the exception of a few recent studies (Mikulincer, Birnbaum, Woodis, & Nachmias, 2000; Mikulincer, Gillath, & Shaver, 2002), most such studies have focused on explicit, conscious aspects of behavior, cognition, and emotion. As a result, these studies have not generally tapped the less explicit, less conscious aspects of affect regulation, motivation, cognitive processing, and mental representations of self and others. We therefore cannot be sure that self-reports of attachment anxiety and avoidance actually capture what Mikulincer and Shaver (2003) described as the underlying dynamics of hyperactivating and deactivating strategies.

This limitation is important not only for general reasons (e.g., the desirability of illuminating important mental processes) but also because some attachment researchers believe that self-report measures of adult attachment style cannot plumb the psychodynamic depths addressed by attachment theory (e.g., Crowell & Treboux, 1995; Hesse, 1999; Jacobvitz, Curran, & Mollen, 2002). Such researchers seem to have assumed that because self-report measures involve conscious, deliberate answers to explicit questions, they are limited to capturing only superficial, conscious mental processes. On this assumption, such researchers have reached the conclusion that self-report measures are unlikely to relate to the psychodynamic processes of interest to Bowlby (1969/1982) and other clinicians, especially those with a psychoanalytic orientation. Many of these critics have preferred to use the Adult Attachment Interview (Main, Kaplan, & Cassidy, 1985), which they believe is a measure of uncon-

scious processes aroused when a person discusses childhood attachment experiences (Hesse, 1999).

The main goal of this study was to deal with these doubts and criticisms by determining whether self-reports of attachment anxiety and avoidance provide reliable and valid information about the underlying dynamics of the attachment system. Specifically, we wanted to extend adult attachment research into the realms assessed by the well-known Rorschach (1921/1942) inkblot test—the most frequently used clinical instrument for assessing a person's implicit cognitive representations, unconscious motives, and underlying mental organization (Exner, 2003)—by determining whether self-reports of attachment anxiety and avoidance are associated with theoretically coherent constellations of Rorschach responses. That is, we wanted to examine whether the motivational, cognitive, and affective manifestations of attachment anxiety and avoidance, as described by Mikulincer and Shaver (2003), are manifested in a person's Rorschach responses.

THIS STUDY

In the study we report here, we asked participants to complete self-report measures of attachment anxiety and avoidance. We then administered the Rorschach test and coded and interpreted participants' responses using Exner's (1995, 2001) Comprehensive System (CS) scoring. This system rests on three methodological pillars: standardized administration, objective and reliable coding, and a normative database (Weiner, 1998). It enables the integration of the objective aspects of the test with its projective and dynamic aspects in scientifically controlled ways. In this study, we focused on a subset of Rorschach scores that can be theoretically associated with the cognitive and affective manifestations of attachment-related hyperactivating and deactivating strategies. In so doing, we heeded Block's (2002) assertion that

> It is not enough … simply to enumerate a list of variables that, in the view of the propounder, should prove empirically to be important. … [How] can we be sure that a given set of variables truly "carves nature at its joints" and is not simply one of the many possible descriptive schemes? The sufficiency of a suggested set of variables cannot be tested without some additional theoretical assertions about the relations existing among the proposed variables. Failing this, alternative sets of important variables can be and have been proposed without end. (p. 34)

That is, based on Exner's (2000) system and Mikulincer and Shaver's (2003) model of attachment psychodynamics, we selected a subset of Rorschach scores that are theoretically sound markers of hyperactivating and deactivating strategies. We then asked whether these markers converge empirically with self-reports of attachment anxiety and avoidance.

Our main hypothesis is that individual differences in self-reports of attachment anxiety and avoidance will be asso-

ciated with specific constellations of Rorschach scores. Specifically, we propose that a constellation of seven Rorschach scores (Afr, CF, ColShdBld, Y, m, MOR, Food) represents the underlying affective and cognitive processes associated with hyperactivating strategies and that this constellation will therefore be correlated with attachment anxiety. According to Mikulincer and Shaver (2003), high scores on the attachment anxiety are associated with hyperactivation of emotional experiences, difficulties in emotion regulation, rumination on threat- and distress-related thoughts, negative models of the self, and strong dependence needs. Therefore, attachment anxiety is expected to be associated with Rorschach scores that according to Exner's (2000) system reflect attraction to emotional situations (Afr), problems in emotion regulation (CF), and intrusion of negative affect (Color Shading Blends). High attachment anxiety should also be associated with Rorschach scores theorized to reflect the experience of situational stressors (m), a sense of helplessness (Y), failure to maintain a positive self-image (MOR), and adoption of a dependent relational position (Food).

Furthermore, we propose that a constellation of four Rorschach scores (low FM and high L, Fr + rF, and Cg scores) coherently represents the underlying affective and cognitive processes involved in deactivating strategies, and we therefore predicted that this constellation would be associated with avoidant attachment.[1] According to Mikulincer and Shaver (2003), high scores on the avoidant attachment reflect denial and repression of basic needs for proximity and security, personal disengagement from challenging and demanding person–environment transactions, and a narcissistic self-façade. Therefore, avoidance is expected to be associated with Rorschach scores that according to Exner's (2000) system seem to indicate lack of acknowledgment and expression of one's primary needs (low FM), a disengaged attitude toward reality (L), and a tendency to hide behind a façade (Cg) and maintain a grandiose, inflated self-representation (Fr + rF).

Given our theoretical analysis, we expected each set of Rorschach responses, one associated with each dimension of attachment insecurity, to be intercorrelated. This led us to formulate the following two hypotheses. First, the seven

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[1]Another Rorschach marker of attachment avoidance might be lack of T responses because this response is theorized to reflect the capacity for attachments to other people. As Weiner (1998) explained, "the texture (T) determinant has implications literally for interest in reaching out and touching someone, whether physically or psychologically" (p. 164). Unfortunately, we could not include this Rorschach marker in the statistical analyses due to the low incidence of T responses (only 9 of 72 participants produced such a response). However, examination of these 9 participants revealed that all of them were below the median of the distribution of avoidance scores. Furthermore, a t test revealed that participants who produced a T response scored lower on self-reported avoidance ($M = 2.84$) than the remaining participants ($M = 3.57$), $t(70) = 2.18$, $p < .05$, Cohen's $d = .788$.

Rorschach scores associated theoretically with hyperactivating strategies will be associated with each other and will load on a single latent factor that correlates with self-reported attachment anxiety. Second, the four Rorschach scores associated theoretically with deactivating strategies will be intercorrelated and will load on a single latent factor associated with self-reported avoidant attachment. In addition, because anxiety and avoidance are conceptualized as orthogonal dimensions defining a two-dimensional, attachment-style space (Brennan et al., 1998), we predicted only nonsignificant associations between (a) the Rorschach constellation associated with hyperactivating strategies and the Rorschach constellation associated with deactivating strategies, (b) the hyperactivating Rorschach constellation and the self-report measure of avoidant attachment, and (c) the deactivating Rorschach constellation and the self-report measure of anxious attachment.

METHOD

Participants

Seventy-two nonpatient citizens of Israel (57 women and 15 men ranging in age from 19 to 57, median = 23) participated in this study without monetary reward. Most (74%) were university students, and 88% were single. None reported having suffered a major medical illness in the previous 6 months or ever having been hospitalized psychiatrically, treated in an outpatient clinic, convicted of a felony, or tested clinically. None of the participants, according to their reports, were using drugs at the time of the study or imbibing alcoholic beverages excessively. None reported suffering a major stressful life event in the previous year; 12 mentioned that the most significant event in the last year was moving out of their parents' home. All of the Rorschach protocols had R > 13, and no participant demonstrated Rorschach signs indicating questionable validity.

Materials and Procedure

The study was run in two sessions. The first, in which participants were tested in small groups, involved completing Mikulincer, Florian, and Tolmacz's (1990) 10-item, Hebrew-language scale measuring attachment anxiety and avoidance in close relationships. This scale includes 5 items tapping avoidant attachment (e.g., "I am somewhat uncomfortable being close to others"; "I find it difficult to trust others in close relationships") and 5 items tapping anxious attachment (e.g., "I often worry that my partner doesn't love me"; "I find that others are reluctant to get as close as I would like"). Items were constructed based on Hazan and Shaver's (1987) prototypical descriptions of attachment styles and were highly similar to the English-language ECR scales (Brennan et al., 1998).

Participants were asked to think about their close relationships without focusing on a specific partner and to rate the extent to which each item described them in these relationships on a 7-point scale ranging from 1 (*not at all*) to 7 (*very much*). Previous studies have found this scale to be reliable, valid, and correlated with other adult attachment scales (e.g., Mikulincer & Florian, 2000). In our sample, Cronbach alphas were adequate for brief measures of anxiety and avoidance (.75 and .79, respectively). We computed a single score for each dimension by averaging scores on the relevant items. Pearson correlations revealed a near-zero, nonsignificant association between anxiety and avoidance scores (.03), supporting the theoretical independence of the two attachment-style dimensions (Ainsworth et al., 1978; Brennan et al., 1998). As can be seen in Table 1, the anxiety and avoidance scores distributed normally in this sample with means of 3.34 and 3.48 and standard deviations of 1.10 and 0.96, respectively. Scores ranged from 1 to 6.2, suggesting a full range of attachment security–insecurity in our sample.

The second session was conducted 1 month later by research assistants different from those who had administered

TABLE 1
Descriptive Statistics for the Assessed Variables

Variable	Frequency	M	Mdn	Mode	SD	Minimum	Maximum
Self-Report attachment scores							
Anxiety	72	3.34	3.2	3.2	1.10	1	6
Avoidance	72	3.48	3.6	3.5	0.96	1.8	6.2
Attachment anxiety Rorschach constellation							
Afr	72	0.56	0.55	0.4	0.21	0.25	1.08
CF	41	1.35	1	0	1.58	0	5
ColShdBld	22	0.33	0	0	0.53	0	2
Y	32	0.87	0	0	1.40	0	6
m	54	1.51	1	1	1.31	0	6
MOR	52	1.46	1	1	1.32	0	5
Food	22	0.36	0	0	0.59	0	2
Attachment avoidance Rorschach constellation							
FM	65	2.89	2.5	2	1.94	0	8
L	72	0.79	0.65	0.80	0.66	0.06	3.50
Fr + rF	21	0.35	0	0	0.58	0	2
Cg	42	1.46	1	0	1.56	0	5

the attachment scales. Participants were run on an individual basis and were asked to complete the Rorschach test. The examiners (two senior graduate students from the clinical psychology program at Bar-Ilan University) had taken three basic and advanced courses in psychodiagnostics; were familiar with administering, coding, and analyzing the Rorschach according to Exner's (1995, 2001) CS system; and were unaware of the participants' attachment scores. Before conducting the study, the examiners underwent an additional 6 hr of specific training to insure standardization of administration, coding, and scoring with Ety Berant. During the study, especially in its initial stages, they were subject to close supervision by Berant. The examiners were not acquainted with any participant they tested.

The Rorschach was administered and coded according to Exner's (1995, 2001) CS system. All records were coded by one of the examiners, and Berant and Yaacov Segal then independently recoded each of the records. All coders were blind to participants' attachment scores. Interrater reliability was estimated for 25 of the 72 records (35% of the protocols, 474 percepts) by comparing the codes assigned by Berant and Segal and calculating kappa coefficients (Cohen, 1988). For the sake of brevity, we present here only total configuration agreement, but interrater reliability information for all of the CS codes is available on request from the authors. The κ coefficients were .99 for Location and Space, .82 for Determinants, .95 for Contents, and .83 for Special Scores, indicating nearly perfect interrater agreement (Landis & Koch, 1977). Based on these findings, we used the codes assigned by the most experienced coder, Berant. Table 1 presents descriptive statistics for the Rorschach scores used in this study.[2]

RESULTS

The main hypotheses were tested using two statistical methods. First, the hypothesized associations between self-report and Rorschach scores were examined using Campbell and Fiske's (1959) multitrait-multimethod (MTMM) analysis. According to our hypotheses, significant convergent correlations should be found between a particular self-report attachment score and the various Rorschach markers of the associated affect regulation and need-gratifying strategy. There should also be only weak, nonsignificant correlations between a particular self-report attachment dimension and Rorschach markers of the other attachment dimension, supporting the independence of the two dimensions. In a second

approach to data analysis, we used confirmatory factor analysis (CFA) to determine whether the self-report attachment dimensions and the various Rorschach scores were organized by two latent factors, each representing a different attachment dimension.

Multitrait-Multimethod Correlations

We followed Campbell and Fiske's (1959) recommendations for evaluating the zero-order correlations among participants' self-reports of attachment anxiety and avoidance and the Rorschach markers of attachment anxiety (Afr, CF, ColShdBld, Y, m, MOR, Food) and attachment avoidance (low FM,[3] L, Fr + rF, Cg). Table 2 presents the MTMM Pearson correlations among the self-report and Rorschach scores.[4]

Campbell and Fiske (1959) discussed four desiderata for MTMM correlations, all of which were satisfied by the correlations in Table 2. First, consider our hypotheses about convergent correlations between self-report attachment dimensions and theoretically associated Rorschach scores (the monotrait-heteromethod correlations in Campbell and Fiske's terms). As can be seen in Table 2, all of the correlations between self-reports of attachment anxiety and the seven Rorschach markers of attachment anxiety were positive and statistically significant. Six of the correlations were significant at the $p < .01$ level and one was significant at $p < .05$ ($M r = .40$). That is, all of the appropriate Rorschach scores exhibited adequate convergent correlations with self-reported attachment anxiety. Similarly, all of the correlations between self-reported avoidant attachment and the four Rorschach markers of avoidance were positive and statistically significant. Three of them were significant at the $p < .01$ level and one was significant at $p < .05$ ($M r = .36$). These findings are strong evidence for convergence among different kinds of indicators of the two attachment-style constructs.

Second, consider our hypothesis concerning correlations among multiple Rorschach markers of an attachment dimension (monotrait-monomethod correlations in Campbell and Fiske's, 1959, terminology). As can be see in Table 2, in 20 of the 21 correlations among the seven Rorschach markers of attachment anxiety, all but the positive nonsignificant correlation between Afr and m (.10) were positive and statistically significant ($M r = .34$). That is, all of the Rorschach scores in the set appeared to tap a single underlying construct. Similarly, all of the correlations among the four markers of attach-

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[2]Examination of the Rorschach score distributions revealed three values (one in the Y variable, one in the M variable, and one in the L variable) exceeding 3.3 SDs from the mean. We assigned these outliers a value 1% higher than the next highest nonextreme value to decrease the influence of extreme values. This procedure did not change the rank order of scores because there was only one extreme value per variable.

[3]Because we hypothesized that low FM scores would be associated with avoidant attachment, we reversed the FM score in all statistical analyses.

[4]Because many of the Rorschach markers of attachment anxiety might be associated with the extratensive Rorschach score, we partialed this score from the correlations reported in Table 2. The resulting partial correlations were virtually identical to the Pearson correlations reported in Table 2, implying that the extratensive score failed to explain the convergence of self-report and Rorschach scores.

TABLE 2
Multitrait-Multimethod Pearson Correlations Among the Assessed Scores

Measures	1	2	3	4	5	6	7	8	9	10	11	12
Self-report												
1. Anxiety												
2. Avoidance	.03											
Rorschach												
Anxiety												
3. Afr	.48**	−.01										
4. CF	.47**	−.05	.40**									
5. ColShdBld	.36**	−.02	.29**	.45**								
6. Y	.46**	−.01	.33**	.60**	.61**							
7. m	.36**	.13	.10	.38**	.26*	.32**						
8. MOR	.26*	.11	.36**	.30**	.25*	.26*	.29**					
9. Food	.42**	−.12	.37**	.31**	.28**	.40**	.26*	.29**				
Avoidance												
10. Low FM[a]	−.09	.44**	−.09	−.09	.01	−.05	−.11	−.16	−.11			
11. L	−.14	.42**	.06	−.14	−.22	−.26*	−.11	−.13	−.15	.39**		
12. Fr + rF	−.14	.33**	−.09	−.01	.17	.08	.06	.15	−.06	.32**	.28**	
13. Cg	−.03	.26*	−.04	−.15	−.02	.05	.03	.01	−.06	.29**	.35**	.31**

Note. Convergent correlations are underlined.
[a]Because we hypothesized that low FM scores would be associated with avoidant attachment, we reversed the FM score in all statistical analyses.
*p < .05. **p < .01.

ment avoidance were positive and significant (*M r* = .32). Hence, the four Rorschach markers seemed, as expected, to tap a single construct.

Third, consider our hypothesis about weak and nonsignificant correlations between the two attachment dimensions (anxiety and avoidance) measured by different methods (self-report scale, Rorschach test)—the heterotrait-heteromethod correlations. The MTMM correlations in Table 2 entirely support this hypothesis. None of the seven Rorschach markers of attachment anxiety were significantly correlated with self-reported avoidant attachment (*M r* = .06).[5] In fact, all of the convergent correlations between these seven Rorschach scores and self-reported attachment anxiety were higher than the correlations between these markers and self-reported attachment avoidance (see Table 2). Similarly, none of the four Rorschach markers of avoidant attachment were significantly correlated with self-reported attachment anxiety (*M r* = .10); and once again, all of the convergent correlations between self-reported avoidant attachment and the Rorschach indicators of avoidance were higher than the corresponding correlations between those indicators and self-reported attachment anxiety (see Table 2).

Fourth, consider our hypothesis about weak and nonsignificant correlations between different attachment dimensions (anxiety and avoidance) measured by the same method (self-report scales, Rorschach test)—the heterotrait-monomethod correlations. As evident in Table 2, the correlation between self-reported attachment anxiety and

self-reported attachment avoidance was nonsignificant and near zero (*r* = .03). Moreover, most of the correlations between the seven Rorschach markers of attachment anxiety and the four Rorschach markers of attachment avoidance, with the exception of an inverse correlation between Y and L (−.25), were nonsignificant (*M r* = .09). Of course, these heterotrait-monomethod correlations were notably smaller than the convergent intercorrelations of Rorschach markers of attachment anxiety (*M r* = .34) and the convergent intercorrelations of Rorschach markers of attachment avoidance (*M r* = .32). Thus, the MTMM correlations provide strong support for our hypotheses about the pattern of associations between self-reports and Rorschach markers of attachment anxiety and attachment avoidance.

CFA

To further examine convergence between self-reports and Rorschach markers of the two distinct attachment dimensions, we tested a model in which the self-report and Rorschach scores loaded on one of two uncorrelated latent factors. One latent factor represented the attachment anxiety dimension and included self-reports of attachment anxiety and the seven Rorschach markers of this attachment dimension. The other latent factor represented the attachment avoidance dimension and included self-reports of attachment avoidance and the corresponding four Rorschach markers. The two latent factors were left uncorrelated because attachment theory and research suggest that the two attachment dimensions are orthogonal, and evidence from the MTMM correlations reported previously generally corroborated this expectation. This CFA model is thus a good representation of Brennan et al.'s (1998) two-dimensional, attachment-style space.

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[5]Mean correlations between scores (both self-reports and Rorschach scores) of attachment anxiety and attachment avoidance are given in absolute-value terms because they included both positive and inverse associations. The absolute values correctly indicate the magnitude of the association.

A variety of statistics are available to evaluate the fit of a CFA model to data: the chi-square test, the standardized root mean squared residual (SRMR; Bentler, 1995), the incremental fit index (IFI; Bollen, 1989), and the comparative fit index (CFI; Bentler, 1992). The chi-square statistic has several problems such as being strongly influenced by sample size. SRMR values represent the difference between the observed correlation matrix and the reproduced correlation matrix, with small values (values approaching zero) indicating good fit. IFI and CFI values range (roughly) between zero and 1.0, with values approaching 1.0 indicating good fit. Hu and Bentler (1998) extensively evaluated a host of fit indexes and recommended a two-index strategy in which researchers present the SRMR along with either the IFI or CFI. In addition, Hu and Bentler suggested that an SRMR equal to or less than .09 is generally indicative of good fit in combination with values of .95 or higher for the IFI and CFI. In this study, we report the SRMR, IFI, and CFI for the two-factor model. This model was fit using maximum likelihood estimation procedures.

The two-factor model provided a fairly good overall fit to the data. The IFI and CFI approached .95 (.942 and .945) and the SRMR was below .09 (.074). Table 3 presents the parameter estimates of each self-report and Rorschach score for this two-factor model. These parameter estimates generally reiterate the correlational findings. As can be seen in Table 3, participants' self-reported attachment anxiety score and the seven Rorschach markers of attachment anxiety had strong and significant parameter estimates associated with the same latent factor (parameters > .50, $ps < .05$). Similarly, participants' self-reported attachment avoidance score and the four Rorschach markers of attachment avoidance had strong and significant parameter estimates associated with the second latent factor (parameters > .50, $ps < .05$). Again, these findings suggest that the assessed Rorschach scores converged with self-reports of the corresponding attachment dimensions.

TABLE 3
Parameter Estimates for the Two-Factor Model

Measure	Latent Anxiety Factor	Latent Avoidance Factor
Anxiety self-report score	.72	
Afr Rorschach score	.59	
CF Rorschach score	.76	
ColShdBld Rorschach score	.68	
Y Rorschach score	.79	
m Rorschach score	.56	
MOR Rorschach score	.56	
Food Rorschach score	.60	
Avoidance Self-report score		.75
Low FM Rorschach score		.71
L Rorschach score		.67
Fr + rF Rorschach score		.65
Cg Rorschach score		.62

DISCUSSION

The major goal of our study was to examine convergent associations between self-reported attachment anxiety and avoidance on one hand and theoretically selected markers of these attachment dimensions from the Rorschach test on the other. The study was intended to fill an empirical gap in the literature on adult attachment by determining whether individual differences assessed with self-report attachment scales reflect the implicit, underlying action of hyperactivating and deactivating strategies of affect regulation. Examining Rorschach responses is one way to find out whether self-report attachment measures can plumb the psychodynamic depths discussed by Bowlby (e.g., 1973) and targeted by Mikulincer and Shaver's (2003) model of attachment psychodynamics in adulthood.

Our results clearly indicate that self-report measures of attachment anxiety and avoidance were coherently associated with theoretically chosen Rorschach markers, and that cross-construct correlations were weak and nonsignificant. Moreover, the various Rorschach markers of a particular attachment dimension were correlated with each other but not with Rorschach markers of the other attachment dimension. These findings support the contention that self-reports of attachment anxiety and avoidance are associated with theoretically predictable implicit aspects of attachment psychodynamics. They also support the conceptualization of attachment anxiety and avoidance as independent dimensions with unique explicit and implicit manifestations.

Beyond achieving these research goals, our findings illustrate the advantages of relying on a psychodynamic perspective for interpreting Rorschach variables when examining predictions derived from attachment theory. They also call into question recent criticisms of the Rorschach test as empirically invalid (Wood, Nezworski, Lilienfeld, & Garb, 2003). Because we generally use self-report attachment measures in our research, we were primarily interested in examining implicit psychodynamic correlates of these measures. Yet, to the extent that the body of empirical findings based on our attachment measures is large, coherent, and based on very diverse methods—and that extent is great (Mikulincer & Shaver, 2003)—our results also support the validity, theoretical relevance, and utility of the Rorschach.

Our findings indicate that self-reports of attachment anxiety are, as expected, associated with Rorschach scores thought to indicate a tendency to react with strong emotions to person–environment transactions; difficulties in regulating emotional experience; distress; and perception of oneself as helpless, weak, and unworthy. With regard to the emotional domain, our findings revealed three differentiated but coherently related implicit concomitants of attachment anxiety. First, high scores on attachment anxiety were significantly associated with the Afr Rorschach score, which is theorized to reflect an intense attraction to emotional situations (Weiner, 1998). Second, attachment anxiety was significantly associated with the Rorschach score thought to indicate difficulties

in emotion regulation (CF; Weiner, 1998). Third, people who scored high on attachment anxiety gave more Rorschach responses involving Blends and Color Shading Blends. Weiner (1998) viewed these responses as signs of a complex, ambivalent, and confused emotional world, one in which negative emotions crowd out positive feelings.

This pattern of Rorschach responses implies that people who score high on attachment anxiety are loaded with emotion, highly attracted to emotional situations, and marked by a complex and rich network of emotional memories and associations. This intense and rich emotional life may be a liability, however, because of the difficulties anxious individuals have in controlling and modulating their emotions and inhibiting or soothing negative emotional states. Underregulated but intense and complex negative emotional states may increase the likelihood of nonoptimal coping with stress, volatile interpersonal relations, psychological difficulties, and decreased well-being.

Adding to this picture is anxiously attached individuals' tendency to give Color Shading Blend responses to the Rorschach, which are thought to indicate the intrusion of negative feelings into positive emotional states, thereby increasing emotional uncertainty and confusion (Weiner, 1998). Previous studies have found that this Rorschach score is associated with depression and suicidal tendencies (Appelbaum & Colson, 1968; Appelbaum & Holzman, 1962; Exner, 2000; Weiner, 1998). This fits with Mikulincer and Shaver's (2003) claim, based on other kinds of empirical studies, that hyperactivating attachment strategies produce a chaotic mental architecture pervaded by unregulated negative affect. Mikulincer and Shaver (2003) summarized evidence indicating that hyperactivating strategies favor the spread of negative affect throughout working memory, which can even result from what was intended to be a positive-affect induction (Mikulincer & Sheffi, 2000). Following a positive mood induction, anxiously attached individuals seem to become reminded of the downside of previous positive experiences (especially in attachment relationships) that somehow ended painfully. Once attuned to negative memories and possibilities, the anxious mind suffers from a spread of negative associations that precludes the sustained experience and psychological benefits of positive affect. Anxiously attached individuals seem attracted to emotionally intense experiences, somewhat like a moth to flames, even though such experiences often contribute to confusion, helplessness, and disappointment.

In evaluating anxiously attached individuals' affective Rorschach responses, it is important to consider Overton's (2000) interpretation of the meaning of CF responses in relational terms. Following Schachtel's (1943) theory, Overton (2000) claimed that CF responses represent an immature method of relating to others manifested in difficulties differentiating between the self and others and accurately perceiving others' traits, attitudes, beliefs, and responses. Overton (2000) contended that the dominant attitude of people who display CF is very subjective and mainly based on emotional experiences. This contention fits with research indicating that people who score high on attachment anxiety tend to minimize cognitive distance from others by creating an illusion of consensus (Mikulincer, Orbach, & Iavnieli, 1998) and projecting their own self-traits onto others (Mikulincer & Horesh, 1999).

Self-reports of attachment anxiety converge with Rorschach scores thought to reflect current experience of situational stressors (m) and a sense of helplessness (Y; Weiner, 1998). It is important to note that participants in our study did not report any specific major stressor in recent months, yet those who scored high on self-reported attachment anxiety gave Rorschach responses thought to reflect current stress. These findings are consistent with Mikulincer and Shaver's (2003) claim that anxiously attached individuals are frequently overwhelmed by feelings of distress, vulnerability, and helplessness. According to Mikulincer (1998), this sense of helplessness was not only an unwanted reflection of difficulties in emotion regulation but also an instrumental means of eliciting others' love and support—the main goal of an anxious person's hyperactivating strategies. This line of theorizing is supported by the observed tendency in this study for anxiously attached participants to give Rorschach responses related to food. According to Exner (2000), these responses characterized people who chronically wanted others to be tolerant of and compliant with their needs and demands.

The Rorschach test successfully revealed anxiously attached participants' vulnerable self-image: High scores on the attachment anxiety scale were significantly associated with Rorschach scores thought to reflect a pessimistic view of the self (MOR; Weiner, 1998). This pattern of Rorschach scores fits with previous findings concerning anxiously attached individuals' descriptions of their self-traits. Such people tend to describe themselves in negative terms, report low levels of self-esteem, and dismiss positive self-traits (e.g., Bartholomew & Horowitz, 1991; Mikulincer, 1995). As already mentioned, Mikulincer and Shaver (2003) suggested that this overly negative self-characterization is sometimes an attempt to elicit other people's compassion and support.

We also found that self-reports of attachment-related avoidance, which are thought to reflect deactivation of attachment needs, dismissal of challenging and demanding person–environment transactions, and defensive maintenance of self-esteem (Shaver & Mikulincer, 2002), were associated with Rorschach scores theorized to reflect lack of acknowledgment of need states, a disengaged orientation to the world, and maintenance of a grandiose self-façade. Once again the Rorschach, a measure designed to tap unconscious processes and frequently used in clinical settings, produced results highly compatible with both attachment theory and the validity of self-report measures of attachment style.

A significant association was found between high scores on the avoidance scale and relatively low FM scores on the Rorschach. According to Exner (2000), low FM scores indicated

that primary need states are not being experienced in typical ways. According to Weiner (1998), persons having low FM scores seldom experienced intense needs, rarely entertain hopes and dreams, and remain bland and unconcerned. This disengaged attitude was also evident in the observed association between self-reports of attachment avoidance and L scores on the Rorschach. These findings fit with Tidwell, Reis, and Shaver's (1996) finding, in a week-long diary study, that avoidant adults often felt bored and distant in their daily interactions with friends and romantic partners. The findings also fit with recent studies that revealed avoidant individuals' relative imperviousness to experimental inductions of either positive or negative affect (Mikulincer & Sheffi, 2000). We interpret this pattern of constrained feelings as reflecting the main goal of deactivating strategies—to keep the attachment system down regulated so as to avoid acute pain and distress caused by potentially demanding or threatening person–environment transactions.

High scores on attachment avoidance were also associated with high Fr + rF and Cg Rorschach scores, which are thought to reflect an exaggerated sense of self-worth, the use of narcissistic defenses, and a tendency to maintain a façade (Exner, 2000). These findings support Mikulincer and Shaver's (2003) claim that avoidant individuals' perceptions of themselves as competent and powerful was a defensive façade that helped them handle distress and convince others that they do not need help or support. Mikulincer (1998) found that avoidant individuals reacted to threatening situations by inflating their positive self-views and that this defensive response was a means for convincing others of their self-reliance. Interestingly, Weiner (1998) suggested that Cg responses also represent suspiciousness about others' good will, which causes a person to be less likely to reveal weaknesses to others. This approach to the meaning of Cg responses fits with previous research that has shown that people who score high on attachment avoidance hold a negative view of others and report lack of trust in others' good intentions (e.g., Bartholomew & Horowitz, 1991; Collins & Read, 1990).

Overall, our study sheds light on the dynamics underlying self-reports of attachment anxiety and avoidance. Rorschach scores illuminated the complex emotional world of anxiously attached persons—the pain caused by reliance on hyperactivating strategies together with the "secondary gains" of eliciting others' compassion. Rorschach scores also highlighted the split in avoidant persons' mental representations—showing an arrogant face, harboring self-degrading feelings, and never allowing oneself to feel needy or personally involved with others. These findings are especially interesting and important because they were obtained by a method, the Rorschach test, which is presumably less influenced than self-reports by social desirability and other self-report biases. Moreover, participants were not primed by a questionnaire dealing with attachment issues before being administered the Rorschach; in fact, the attachment measures were administered weeks before the Rorschach. Therefore,

participants' Rorschach responses presumably reflected their usual inner thoughts and motives rather than a just-completed questionnaire.

Beyond considering the interesting associations between self-report attachment scores and Rorschach markers, we also consider the low observed frequency of T Rorschach responses in our sample. This finding seems to be at odds with Weiner's (1998) contention that "consistent with the expectation that normally functioning people have the capacity to form attachments to other people, almost all nonpatient subjects have some T in their record" (p. 164). Thus, the low rate of T responses might be taken as an indication of problems in scoring T or disruptions in the attachment histories of our participants (e.g., histories including multiple caretakers or experiences with foster care). However, a detailed analysis of our Rorschach protocols revealed no problem in scoring T responses. Moreover, there was no evidence of notable disruptions in attachment relationships: All of the participants reported that their parents were living at the time of the study and the vast majority reported that they grew up in intact families. Interestingly, the low incidence of T responses was also found in a normative sample of Israeli adults (Berant, 2005), implying that a relative absence of T is normal in Israel. Further research is needed to examine the meaning of T responses, their relevance to attachment organization, and the cultural factors that affect their incidence.

Before ending this discussion, we should note that our study is an important but nevertheless preliminary step in examining the convergence between implicit and explicit markers of attachment constructs. Bornstein (2002) delineated three steps in determining convergence between implicit and explicit measures of psychological processes: (a) providing evidence that the measures are moderately correlated, (b) demonstrating that both explicit and implicit measures actually predict the behaviors with which they are theoretically expected to be associated, and (c) identifying moderating variables that affect scores on one kind of measure but not the other. Our study provided systematic evidence that self-report measures of attachment anxiety and avoidance were moderately correlated with implicit manifestations of these dimensions in the Rorschach test. Further studies should examine whether variations in these Rorschach markers and self-report scores actually predict similar interpersonal behaviors in close relationships and how theoretically relevant variables (e.g., exposure to threatening events) moderate the self-report and Rorschach scores. Many such studies have already been conducted using self-report attachment measures (Mikulincer & Shaver, 2003), but they did not include the Rorschach.

Further studies should also examine the uniqueness of the observed associations between self-report attachment scores and Rorschach markers. Our study revealed significant associations between these two sets of variables, but it did not determine whether the constellations of Rorschach scores on which we focused were uniquely related to attachment scores or could have been implicit markers of

more global personality traits. In several other studies (reviewed by Mikulincer & Shaver, 2003), researchers have shown that relations between attachment-dimension scores and a host of experimental outcomes cannot be explained by, for example, self-esteem, general anxiety, or neuroticism. However, these studies did not include the Rorschach. Future studies connecting Rorschach responses with attachment dimensions should include measures of important personality traits that might offer alternative explanations of the findings reported in this article.

It is also important to note that although our findings provide important information about the implicit attachment-related strategies associated with attachment anxiety and avoidance in adulthood, we do not mean to prejudge the question of whether these strategies can be traced empirically to attachment experiences in infancy, for example, in the infant–mother relationship. Bowlby (1969/1982) and Ainsworth et al. (1978) focused on infancy, but more recent studies have addressed determinants of attachment behavior in other age periods (e.g., Mikulincer & Shaver, 2003). Longitudinal studies need to be conducted to discover the childhood and adolescent antecedents of the adult attachment patterns we study. However, even after good longitudinal studies have been done, we do not expect to find that the developmental trajectory of attachment orientations is linear or in any other way simple. We suspect that attachment orientations in adulthood are not based only on social experiences in infancy or early childhood. Adult attachment dynamics are likely to be affected by a broad array of historical forces, innate temperamental tendencies, and contextual factors that moderate or even override the effects of past experiences (Mikulincer & Shaver, 2003).

Our findings were based on the more objective Rorschach scores. It might prove beneficial, however, to go further and analyze qualitative Rorschach variables such as specific object-relations scales and defense mechanism scales (Masling, 2002). We should also remind readers that our study focused on a particular age and cultural group—Israeli undergraduates. Future studies should include additional cultural and age groups. In addition, our sample consisted of healthy young adults who did not suffer from serious attachment disorders. Further research with samples of psychiatric patients should evaluate the relevance of Rorschach markers for attachment disorders. The main goal of our study was to examine implicit correlates of self-reported attachment styles, not the psychodynamics of severe attachment disorders.

Despite the restricted focus of our study, the findings enrich attachment research, deepen attachment theory's empirical base, and provide important information about the unconscious dynamics underlying self-reports of attachment orientations in adulthood. They fit well with findings obtained with other methods, in different societies, and encourage us to continue searching for a more complete picture of attachment phenomena using both self-report questionnaires and measures of implicit, unconscious processes.

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Ety Berant
Department of Psychology
Bar-Ilan University
Ramat Gan 52900 Israel
Email: berante@mail.biu.ac.il