Adult Attachment, Working Models, and Relationship Quality in Dating Couples

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Three studies were conducted to examine the correlates of adult attachment. In Study 1, an 18-item scale to measure adult attachment style dimensions was developed based on Hazan and Shaver's (1987) categorical measure. Factor analyses revealed three dimensions underlying this measure: the extent to which an individual is comfortable with closeness, feels he or she can depend on others, and is anxious or fearful about such things as being abandoned or unloved. Study 2 explored the relation between these attachment dimensions and working models of self and others. Attachment dimensions were found to be related to self-esteem, expressiveness, instrumentality, trust in others, beliefs about human nature, and styles of loving. Study 3 explored the role of attachment style dimensions in three aspects of ongoing dating relationships: partner matching on attachment dimensions; similarity between the attachment of one's partner and caregiving style of one's parents; and relationship quality, including communication, trust, and satisfaction. Evidence was obtained for partner matching and for similarity between one's partner and one's parents, particularly for one's opposite-sex parent. Dimensions of attachment style were strongly related to how each partner perceived the relationship, although the dimension of attachment that best predicted quality differed for men and women. For women, the extent to which their partner was comfortable with closeness was the best predictor of relationship quality, whereas the best predictor for men was the extent to which their partner was anxious about being abandoned or unloved.

It is generally believed that the nature and quality of one's close relationships in adulthood are strongly influenced by affective events that took place during childhood, particularly within the child–caretaker relationship. Yet, only recently have social psychologists begun to integrate work on adult love relationships with developmental theory and research on the nature and functioning of parent–child relations (Hartup & Rubin, 1986; Hazan & Shaver, 1987; Hinde, 1979; Hinde & Stevenson-Hinde, 1986; Shaver & Hazan, 1988; Shaver, Hazan, & Bradshaw, 1988; Shaver & Rubenstein, 1980; Weiss, 1982, 1986). Of particular interest has been the extent to which a child's early attachment relationships with caretakers shape important beliefs about the self and social world, which then guide relationships in adulthood.

Recently, Hazan and Shaver (1987) have used infant attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1982, 1973, 1980) as a framework for examining how adult love relationships are related to early parent–child interactions. The

present studies extend their work in several ways. First, we developed a multi-item scale to measure dimensions underlying adult attachment styles to replace Hazan and Shaver's discrete, categorical measure. Second, we explored the mechanisms that may underlie cross-age continuity by examining in greater detail the relations between adult attachment and beliefs about the self, the nature of romantic love, and the social world in general. Finally, we examined the role of attachment style dimensions and attachment history in one's choice of love partners and in the quality of dating relationships. We begin with a brief overview of attachment theory to provide a framework for the current work.

Attachment Theory and Research

Attachment theory is concerned with the bond that develops between child and caretaker and the consequences this has for the child's emerging self-concept and developing view of the social world. Bowlby's theory (1982, 1973, 1980), which was the first formal statement of attachment theory, is an evolutionary–ethological approach (Ainsworth et al., 1978). According to this view, infant attachment behaviors are controlled by a distinct, goal-corrected behavioral system, which has a "set goal" of maintaining proximity to a nurturing adult and a biological function of promoting the child's security and survival (Bowlby, 1982). More recently, attachment researchers have suggested that the set goal of the attachment system is not simply physical proximity but, more broadly, to maintain "felt security" (Bischof, 1975; Bretherton, 1985; Sroufe & Waters, 1977).

Bowlby's theory is also a model of social and personality development (1982, 1973). He argued that the attachment rela-

tionship has a profound impact on the child's developing personality, and that the nature and quality of this early relationship is largely determined by the caregiver's emotional availability and responsiveness to the child's needs (Bowlby, 1973). Through continued interaction, a child develops internal "working models" containing beliefs and expectations about whether the caretaker is someone who is caring and responsive, and also whether the self is worthy of care and attention. These working models are then carried forward into new relationships where they guide expectations, perception, and behavior (Bowlby, 1973). Thus, working models provide a mechanism for cross-age continuity in attachment style and are of particular importance in understanding the role that early relationships have in determining adult relationships.

An important addition to attachment theory was made by Ainsworth et al. (1978), who explored individual differences in attachment relationships. From observations of infants and caretakers, three distinct patterns or styles of attachment were identified: secure, anxious/avoidant, and anxious/ambivalent. And, consistent with Bowlby's theory, the three styles seem closely associated with differences in caretaker warmth and responsiveness (Ainsworth et al., 1978; Egeland & Farber, 1984). These individual differences in attachment styles are thought to reflect differences in the psychological organization of the attachment system, a central part of which is the child's perception of whether the caretaker will be available and responsive when needed. Main, Kaplan, and Cassidy (1985) suggested that individual differences in attachment styles can be viewed as "differences in the mental representation of the self in relation to attachment [and] the secure versus various types of insecure attachment organizations can best be understood as terms referring to particular types of internal working models of relationships, models that direct not only feelings and behavior but also attention, memory, and cognition" (p. 67).

Early Attachment and Later Social Relations

Attachment theory's emphasis on enduring cognitive models that are carried forward into new relationships is consistent with more general theories of personality (e.g., Epstein & Erskine, 1983; Sroufe & Fleeson, 1986) that view social, emotional, and personality development as inextricably linked to early social relations. Empirical support for these ideas is now being provided as a growing body of longitudinal research finds attachment style to be an important predictor of childhood social behavior through the early elementary school years (see Bretherton, 1985, for a review).

However, attachment behavior and the influence of early relationships should be central to social functioning well beyond the childhood years. Indeed, Bowlby argued that the nature of the early relationship becomes a model for later relationships, leading to expectations and beliefs about oneself and others that influence social competence and well-being throughout life (Skolnick, 1986). Recently, Hazan and Shaver (1987; Shaver & Hazan, 1988; Shaver et al., 1988) have used attachment theory as a framework for understanding adult love relationships. They suggest not only that early relationships have an impact on adult love relationships but that romantic love itself is a process of

becoming attached that shares important similarities with child-caretaker attachment.

Hazan and Shaver (1987) began by translating the typology developed by Ainsworth et al. (1978) into terms appropriate for adult relationships, resulting in three attachment descriptions. Respondents were asked to choose the description that best characterized them, thus categorizing themselves as secure, avoidant, or anxious. Adults with different styles differed predictably in the way they experienced love. For instance, secure lovers had relationships characterized by happiness, trust, and friendship, whereas anxious lovers had relationships marked by emotional highs and lows, jealousy, and obsessive preoccupation with their partner. Adult attachment was also related to reports of early parent–child relationships. For example, secure adults reported their parents to have been more respectful and more accepting than did avoidant or anxious adults. Finally, attachment style was related to beliefs about oneself and about social relationships. For instance, anxious adults had more self-doubts and felt misunderstood by others, whereas secure adults felt well liked and believed others to be generally well intentioned.

Hazan and Shaver's research is an important step toward exploring the relation between early attachment and adult love experiences. There are, however, many issues that require more extensive examination. First, as Hazan and Shaver acknowledged, further research in this area requires the development of a more sensitive instrument to measure adult attachment styles. Second, if mental models of self and others are indeed the mechanisms for cross-age continuity, we must examine in more detail the contents of these models and their relation with attachment style and attachment history. Finally, if attachment styles have important implications for behavior in relationships, they should have a role in one's choice of love partners and in the quality of one's romantic relationships.

This article reports three studies that we conducted to address these issues. In Study 1 we developed and evaluated a scale to measure dimensions underlying adult attachment styles. In Study 2 we explored specific aspects of working models by assessing beliefs about the self, the social world, and romantic love. Finally, in Study 3 we explored the relations among attachment-style dimensions, partner choice, and relationship quality in dating couples.

Study 1

As described, Hazan and Shaver (1987) translated the three infant attachment styles into terms appropriate for adult relationships. They then had subjects choose the one description that best characterized their feelings. Their measure is shown in Table 1.

Although these descriptions are reasonable translations of the infant attachment styles, there are limitations to this discrete measure. First, each description contains statements about more than one aspect of relationships (i.e., the "secure" description includes both being comfortable with closeness and being able to depend on others). Thus, respondents must accept an entire description that may not reflect their feelings on all dimensions. In addition, we are unable to assess the degree to which a style characterizes a person. Finally, the discrete measure assumes that there are three mutually exclusive styles of at-

Table 1

Hazan and Shaver's (1987) Attachment Style Measure

Question: Which of the following best describes your feelings?

1. *Secure*—I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don't often worry about being abandoned or about someone getting too close to me.
2. *Avoidant*—I am somewhat uncomfortable being close to others; I find it difficult to trust them, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being.
3. *Anxious/Ambivalent*—I find that others are reluctant to get as close as I would like. I often worry that my partner doesn't really love me or won't want to stay with me. I want to merge completely with another person, and this desire sometimes scares people away.

Note. From "Romantic Love Conceptualized as an Attachment Process" by C. Hazan and P. Shaver, 1987, *Journal of Personality and Social Psychology, 52,* p. 515, Table 2. Copyright 1987 by the American Psychological Association. Adapted by permission.

tachment. We are unable to examine possible relations among styles or evaluate whether three styles are the "best" or most valid description of adult attachment. The purpose of Study 1 was to develop a more sensitive scale to measure attachment and to gain a better understanding of the nature of adult attachment styles.

Method

Subjects

Participants were 406 undergraduates at the University of Southern California who participated for extra credit in their introductory psychology course. The sample included 206 women and 184 men (16 subjects did not report their sex), ranging in age from 17 to 37, with a mean of 18.8.

Materials and Procedure

An initial 21-item scale was developed based on Hazan and Shaver's (1987) adult attachment descriptions and additional characteristics of the three attachment styles as described in the developmental literature. First, Hazan and Shaver's paragraphs were broken down into their component statements, each forming one scale item. This resulted in 15 items, 5 for each attachment style.

On the basis of descriptions of infant attachment (Ainsworth, 1982; Ainsworth et al., 1978; Maccoby, 1980), there seem to be two important aspects of attachment not included in Hazan and Shaver's (1987) measure. The first concerns beliefs about whether the attachment figure will be available and responsive when needed, which is a primary dimension thought to underlie differences in attachment style. Therefore we developed three statements, each characterizing one of the styles with respect to confidence in the availability and dependability of others. The second aspect concerns reactions to separation from the caretaker, which is an important criterion for categorizing infants into styles. We developed three items, each characterizing one of the attachment styles with respect to separation and phrased in terms appropriate for adult relationships.

The scale contained a final pool of 21 items, 7 for each style. Subjects rated the extent to which each statement described their feelings on a scale ranging from *not at all characteristic* (1) to *very characteristic* (5). The scale, called the Adult Attachment Scale, was included in a packet of questionnaires that was given to students at the start of the semester in their introductory psychology class.

Results

Factor Analysis

The 21 scale items were factor analyzed using Statistical Package for the Social Sciences (SPSS). Initial orthogonal rotation produced a number of items that loaded on more than one factor, suggesting that the underlying dimensions might be correlated. This was supported by an oblique rotation which resulted in several moderately correlated factors and a much cleaner factor solution. Therefore, oblique rotation ($\delta = 0$) was used to obtain the final solution.

After rotation, the three items concerning responses to separation loaded on a single factor that had an eigenvalue less than 1 and did not account for substantial variance. When fewer factors were rotated, the three items loaded on more than one factor. Thus, they were deleted from further analyses, leaving 18 scale items. After joint consideration of Kaiser's eigenvalue criterion (retaining only factors with eigenvalues greater than 1) and a scree test, three factors were extracted for the final solution.

Factor loadings and variance accounted for after rotation are shown in Table 2. Only loadings of .3 or larger were interpreted as defining a factor (with the exception of Item 18, whose highest loading was .29). The first factor contained items concerning the extent to which subjects could trust others and depend on them to be available when needed. Factor 2 consisted of items reflecting anxiety in relationships, such as fear of being abandoned and not being loved. The third factor contained items regarding the extent to which subjects were comfortable with closeness and intimacy. On the basis of the items defining each factor, we labeled them Depend, Anxiety, and Close, respectively.

Factor 1 (Depend) and Factor 3 (Close) were moderately correlated (.41), suggesting that people who felt they could depend on others tended to be more comfortable with getting close. Factor 2 (Anxiety) was weakly correlated with Factor 1 (.18) and not at all related to Factor 3 (.01).

Internal Consistency

Cronbach's alpha for the Depend, Anxiety, and Close items were all reasonable: .75, .72, and .69 respectively. Thus, the six items defining each factor were summed to form three composites. Several items were recoded so that higher scores represented greater confidence in the dependability of others, higher anxiety, and more comfort with closeness. Consistent with the interfactor correlations, there was a moderate relation between the Close and Depend composites ($r = .38$) and weak relations between Anxiety and Close ($r = -.08$) and Anxiety and Depend ($r = -.24$). The composite scores were used in subsequent analyses.

Norms

The means and standard deviations for the Depend, Anxiety, and Close composites were 18.3 and 4.7, 16.2 and 5.1, and 21.2 and 4.8, respectively. Male subjects ($M = 22.0$) were more comfortable with getting close than were female subjects ($M = 20.6$), $F(1, 387) = 8.15, p < .01$. No other sex differences were found.

Table 2
Adult Attachment Scale Items and Factor Loadings

Item	Factor 1	Factor 2	Factor 3
Depend			
1. I find it difficult to allow myself to depend on others.[a] (Av)	.54	−.18	.06
2. People are never there when you need them.[a] (Av)	.48	.26	.09
3. I am comfortable depending on others. (S)	−.58	.24	−.09
4. I know that others will be there when I need them. (S)	−.66	−.18	.03
5. I find it difficult to trust others completely.[a] (Av)	.38	.13	.12
6. I am not sure that I can always depend on others to be there when I need them.[a] (Ax)	.71	.14	−.10
Anxiety			
7. I do not often worry about being abandoned.[a] (S)	.03	−.48	−.19
8. I often worry that my partner does not really love me. (Ax)	.09	.64	.21
9. I find others are reluctant to get as close as I would like. (Ax)	.10	.47	−.13
10. I often worry my partner will not want to stay with me. (Ax)	.10	.62	.15
11. I want to merge completely with another person. (Ax)	−.11	.49	−.14
12. My desire to merge sometimes scares people away. (Ax)	.05	.55	−.14
Close			
13. I find it relatively easy to get close to others. (S)	−.16	.02	−.45
14. I do not often worry about someone getting too close to me. (S)	.07	.01	−.46
15. I am somewhat uncomfortable being close to others.[a] (Av)	.05	.04	.71
16. I am nervous when anyone gets too close.[a] (Av)	−.02	.20	.77
17. I am comfortable having others depend on me. (S)	−.03	.08	−.40
18. Often, love partners want me to be more intimate than I feel comfortable being.[a] (Av)	.07	−.03	.29
Eigenvalue before rotation	3.49	1.80	1.01
Percentage of variance after rotation[b]	11.30	11.50	10.80

Note. (S) Indicates items that originated from the "secure" description; (Av), items that originated from the "avoidant" description; and (Ax), items that originated from the "anxious" description.
[a] Item was recoded when forming the composite scores. [b] Because oblique rotation was used, the percentage of variance accounted for after rotation is only approximate (Tabachnick & Fidell, 1983).

There were no age differences, although the age range of our sample was somewhat limited.

Test–Retest Reliability

A subset ($N = 101$) of our sample completed the attachment scale again about 2 months later. Test–retest correlations for Close, Depend, and Anxiety were .68, .71, and .52 respectively. Items on the Anxiety factor may have been more closely tied to a particular relationship than were the Close and Depend items, which may help account for the relatively lower stability of Anxiety scores. Overall, scores were fairly stable over a 2-month period.

Attachment Dimensions Versus Discrete Types

It is important to note that each factor was composed of items from more than one of the original attachment style descriptions. Factors 1 (Depend) and 3 (Close) contained items from both the secure and avoidant descriptions, and Factor 2 (Anxiety) had items from both the anxious and secure descriptions. Thus, the factor analysis did not provide three factors that directly correspond to the three discrete styles (secure, avoidant, and anxious) but, instead, appears to have revealed three dimensions (Close, Depend, and Anxiety) that underlie the styles. (In fact, obtaining three orthogonal factors that correspond to the three styles would have been highly unlikely. It

would have suggested, for instance, that a person could be simultaneously secure and avoidant. Because the attachment styles should be mutually exclusive, they were necessarily correlated.) As such, examining how the dimensions related to the discrete types would provide a better understanding and more precise definition of the attachment styles. That is, it may clarify what we mean when we say that someone has a secure or anxious style of attachment in adulthood. In addition, by translating the dimensions back into styles, we can more clearly integrate the current work with prior research and theory on attachment.

One way to accomplish this is to examine scores on the attachment scale for people who choose each of Hazan and Shaver's (1987) attachment descriptions (see Table 1). We had a subset ($n = 113$) of our sample complete this discrete measure about 2 weeks later: 63% classified themselves as secure, 27% as avoidant, and 10% as anxious. Mean scores on the attachment dimensions for each attachment style are shown in the top panel of Table 3.

To more systematically examine the relation between attachment dimensions and attachment styles, we performed a discriminant function analysis on scale scores using paragraph choice as the grouping variable. Two discriminant functions were calculated with a combined $\chi^2(6, N = 113) = 43.71, p < .001$. After removal of the first function, the second function still accounted for significant variance, $\chi^2(2, N = 113) = 13.59,$

Table 3

Mean Adult Attachment Scale Scores for the Three Attachment Types as Classified by Hazan and Shaver's (1987) Measure and a Discriminant Analysis: Study 1

Adult attachment scale dimension	Attachment style			F (2, 110)
	Secure	Avoidant	Anxious	
Hazan & Shaver's measure				
n	71	31	11	—
Close	22.28$_a$	17.77$_b$	22.36$_a$	14.31**
Depend	20.13$_a$	16.39$_b$	19.91$_a$	8.04**
Anxiety	14.44$_a$	15.52$_a$	20.00$_b$	6.62*
Discriminant analysis				
n	86	23	4	—
Close	22.49$_a$	15.17$_b$	23.00$_a$	47.26**
Depend	20.12$_a$	14.82$_b$	20.25$_a$	14.22**
Anxiety	14.36$_a$	17.00$_b$	26.00$_c$	15.38**

Note. Scores had a possible range of 6 to 30. Within each row, means with different subscripts differed significantly at $p < .05$ according to a Scheffé test.
* $p < .01$. ** $p < .001$.

Table 4

Standardized Discriminant Function Coefficients

Adult attachment scale	Function 1	Function 2
Close	.839	−.022
Depend	.348	.109
Anxiety	.077	1.101

$p < .001$. The two functions accounted for 70.57% and 29.43%, respectively, of the between-groups variability.

As shown in Figure 1, the first discriminant function separated the avoidant from the secure and anxious types. The second function discriminated the anxious from the secure and avoidant types.

Standardized discriminant function coefficients are presented in Table 4. For the first discriminant function, the primary variable distinguishing the avoidant style from the other two styles was feelings about closeness (Close) and, to a lesser extent, feelings about the dependability of others (Depend). On the second function, only feelings about being abandoned or unloved (Anxiety) discriminated the anxious type from the other two styles.

Using the discriminant weights and prior group membership probabilities, we correctly classified 73% of the total sample. However, accuracy rates among the separate styles varied considerably. Ninety-two percent of the secure group, 45% of the avoidants, and 27% of the anxious were correctly classified. The discriminant functions misclassified half of the avoidant subjects into the secure category and about one third of the anxious subjects as secure and another third as avoidant. Mean scores on Close, Depend, and Anxiety for each of the types as classified by the discriminant analysis are presented in the lower panel of Table 3. Comparison of these means with those in the upper panel, based on Hazan and Shaver's (1987) measure, shows very similar patterns.

The results in Table 3 indicate that a person with a secure attachment style was comfortable with closeness, able to depend on others, and not worried about being abandoned or unloved. An avoidant individual was uncomfortable with closeness and intimacy, not confident in others' availability, and not particularly worried about being abandoned. Finally, an anxious person was comfortable with closeness, fairly confident in the availability of others, but very worried about being abandoned and unloved.

Although the discriminant analysis is an important descriptive tool, it could not completely overcome the limitations of Hazan and Shaver's (1987) measure because it used that measure to assign people to groups. Of particular concern was that
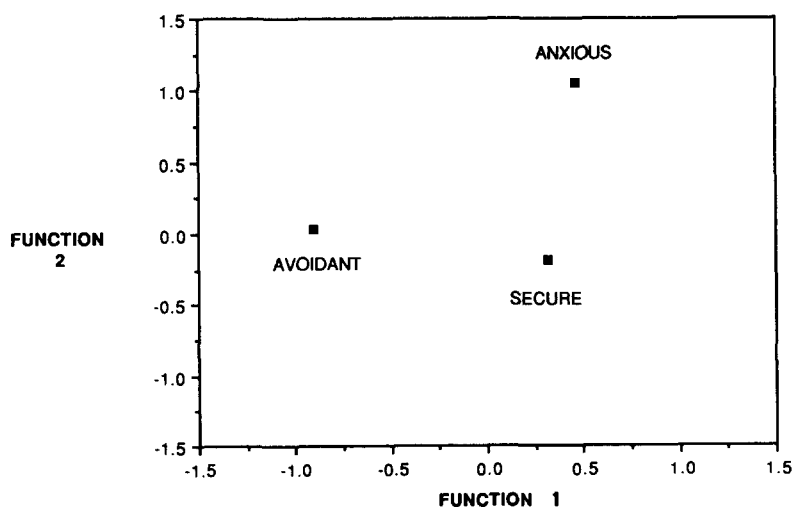

Figure 1. Three group centroids on two discriminant functions derived from the three Adult Attachment Scale dimensions.

we were still assuming there were three attachment styles and that by choosing one description adults could adequately assign themselves to a category. In addition, the attachment scale was based largely on Hazan and Shaver's (1987) original attachment measure, so using one to validate the other may be problematic.

One way to overcome these problems would be to use a clustering procedure to determine whether there are distinct clusters of people and whether the clusters differ in ways consistent with theoretical conceptions of the three attachment styles, independent of Hazan and Shaver's (1987) measure. Although cluster analysis is only an exploratory tool, if such clusters were found it would increase our confidence in the three styles as discrete types, and provide another mechanism for translating the dimensions into styles.

In order to compare results of the cluster analysis with those of the discriminant analysis, the same subsample of 113 subjects was examined. A cluster analysis using Ward's method and squared Euclidean distance was performed using the Cluster subprogram of SPSSX. Scores on the Close, Depend, and Anxiety scales were used as the clustering variables.

The first task was to determine the number of distinguishable clusters in the sample. Several heuristic techniques have been suggested for this. One procedure is to graph the number of clusters (on the Y axis) against the amalgamation coefficient (on the X axis), which represents the within-group variance or degree of similarity among cluster members (Aldenderfer & Blashfield, 1984). The curve is then examined for the point at which it flattens, suggesting that similarity among cluster members has been greatly reduced. This is similar to a scree test in factor analysis. From this, the curve began to flatten after the three-cluster solution and was basically flat at the two-cluster solution, implying three clusters in the data.

A second, related procedure is to examine the amalgamation coefficient for each of various cluster solutions (starting with the maximum number of clusters and working downward) to discover a significant jump in the value of the coefficient. A jump implies that two relatively dissimilar clusters have been merged, suggesting that the number of clusters prior to the merger is the most probable solution (Aldenderfer & Blashfield, 1984). On this basis, a jump was observed between the three- and two-cluster solutions, implying again that the three-cluster solution was appropriate. One of the limitations of this procedure is that it is difficult to determine what constitutes a large jump. In the present sample, the jump occurring between the two- and three-cluster solution was fairly large; however, there was a slightly smaller jump between the three- and four-cluster solution. This suggested that a four-cluster solution may be an appropriate description of the sample as well. However, in the absence of other evidence suggesting a four-cluster solution, we chose a three-cluster solution.

On the basis of these heuristic procedures, a three-cluster solution seemed an adequate representation of the data. Because these procedures are subjective, it was important to replicate the cluster solution with an independent sample. Therefore, a cluster analysis was performed on the Study 2 sample and three clusters were again obtained. Thus, although the heuristic procedures must be viewed with caution, the cross-validation increased our confidence in the three-cluster solution.

Next, we examined the mean scores on Close, Depend, and

Table 5
Mean Adult Attachment Scale Scores for Three Clusters: Study 1

Adult attachment scale dimension	Cluster			
	1 (Secure)	2 (Anxious)	3 (Avoidant)	$F(2, 110)$
n	53	43	17	—
Close	23.36ₐ	19.74_b	16.38_c	27.32*
Depend	21.28ₐ	17.45_b	16.00_b	14.92*
Anxiety	12.50ₐ	20.28_b	11.71ₐ	91.81*

Note. Scores had a possible range of 6 to 30. Within each row, means with different subscripts differed significantly at $p < .05$ according to a Scheffé test.
* $p < .001$.

Anxiety for subjects within each of the three clusters to see how they were characterized (see Table 5).

Differences between clusters on the attachment dimensions corresponded closely to the three attachment styles as defined earlier. Subjects assigned to Cluster 1, with high scores on Close and Depend coupled with low scores on Anxiety, appeared to have a secure attachment style. Cluster 2 revealed high scores on Anxiety coupled with moderate scores on Close and Depend, which fit well with an anxious attachment type. Finally, Cluster 3 had low scores on Close, Depend, and Anxiety, suggesting this may be an avoidant cluster.

Thus, the cluster analysis resulted in clusters that seemed to correspond to the three attachment styles. However, the percentage of subjects assigned to each style (or cluster) differed somewhat from that obtained by either Hazan and Shaver's (1987) measure or the discriminant analysis (see Table 4). The cluster analysis resulted in more people being identified as anxious, most of whom had been previously categorized as secure.[1] In addition, although the three methods of classifying resulted in the same pattern of group differences on the attachment style dimensions, the cluster analysis appeared to maximize these differences.

Discussion

The attachment system in adults is believed to function in much the same way as the infant system with the set goal of "felt security." The dimensions measured by Close, Depend, and

[1] As indicated previously, there was some evidence to suggest that a four-cluster solution may also be an appropriate description of our sample. To explore this further, we assigned people to one of four clusters and examined mean scores on the attachment dimensions for each cluster. People previously assigned to the secure and avoidant groups (based on the three-cluster solution) did not shift. However, people previously defined as anxious now split into two clusters: those in the first cluster had high scores on Close, Depend, and Anxiety, whereas those in the second cluster had high scores on Anxiety, but very low scores on Close and Depend. Thus, the four-cluster solution appeared to differentiate two groups of anxious people: those who were anxious but comfortable with closeness (anxious–secure) and those who were anxious and uncomfortable with closeness (anxious–avoidant).

Anxiety seem to capture fundamental aspects of adult attachment that have important conceptual links to those thought to be central to infant attachment. For instance, the most central theme underlying the nature of the infant–caretaker relationship is the child's expectation that the caretaker will be available and emotionally responsive when needed. Both the Depend and Anxiety scales measured aspects of these expectations for adults. Another important component of the attachment organization is the desire for close contact with the attachment figure and the child's response to that contact. This component was measured by the Close scale.

Further, these dimensions are conceptually similar to ones obtained by Ainsworth et al. (1978). These researchers observed infants with different attachment styles and rated them on a number of behavioral scales. Using discriminant analysis, they identified two dimensions that differentiated the three styles. The first dimension consisted of behaviors related to seeking and maintaining close physical contact with the caretaker, and it separated the avoidant from the secure and anxious/ambivalent groups. The second dimension reflected severe separation anxiety, and it differentiated the anxious/ambivalent from the secure and avoidant groups. It is particularly noteworthy that our discriminant analysis uncovered two conceptually similar dimensions that revealed the same pattern of differentiation among the three styles. Function 1 (made up of Close and Depend) separated the avoidant from the secure and anxious styles, and Function 2 (made up of Anxiety) differentiated the anxious from the secure and avoidant adults.

Thus, we believe that the dimensions measured by the Adult Attachment Scale capture much of the core structures that are thought to underlie differences in attachment styles. These dimensions can be seen as guiding principles that determine how the attachment system manifests itself in adult relationships. They concern beliefs and expectations that are fundamental to feelings of security in adulthood, such as whether a partner will be responsive and available when needed, whether one is comfortable with close contact and intimacy, and confidence about whether a partner will continue to be loving. And, like childhood attachment, beliefs and expectations about these security issues should have important implications for behavior in a wide range of relationships and situations.

Several considerations suggest that the Adult Attachment Scale offers practical and theoretical advantages over Hazan and Shaver's (1987) discrete measure. First, by measuring underlying dimensions, we obtained a more sensitive measure of adult attachment and more precise definition of the three styles. However, although the dimensions can be translated into styles, there often are advantages to a dimensional analysis. For instance, a limitation of discrete measures is that inevitably some members "better" represent the category than others. Without assessments of the dimensions that define category membership, we lose valuable information on differences among category members, which may weaken or distort differences between categories.

This may be one reason why assignment to types based on the cluster and discriminant analyses did not always match the assignment based on Hazan and Shaver's (1987) measure. For example, some people who classified themselves as secure by Hazan and Shaver's measure were later classified as anxious by

the cluster analysis. This may have been because in addition to high scores on Close and Depend, this group also had high scores on Anxiety. Similarly, the discriminant analysis classified some of the anxious (according to Hazan and Shaver's measure) into the avoidant category. Those who shifted tended to have high scores on Anxious and very low scores on Close and Depend. In general, the classification of the anxious group was relatively poor. These findings suggest there may be two types of anxious people, (see Footnote 1). More important, they demonstrate that assigning people to discrete categories may result in groups whose members share some features but differ considerably on other dimensions. A dimensional measure of attachment helps us detect these important individual differences.

Finally, when exploring relations between attachment and other variables of interest, a dimensional scale helps determine which component of attachment most strongly contributes to a particular relation. It is relatively easy to make the transition from dimensions to styles, both conceptually and statistically, but there is no way to separate out dimensions if we have only category assignments. Thus, the Adult Attachment Scale allows us to assess dimensions that underlie attachment styles without losing the important conceptual framework that ties them together.

Study 2

The purpose of Study 2 was to examine relations between adult attachment styles and general mental representations of oneself, others, and romantic relationships. Hazan and Shaver (1987) found that differences in adult attachment were related to different beliefs about oneself and others in ways consistent with attachment theory. Although their measures were somewhat limited (consisting of 15 true–false items), their work provided encouraging initial evidence for the link between adult attachment and working models. Because working models are central to understanding continuity in attachment styles, they must be explored in greater depth.

We began by specifying several broad aspects of working models that should be closely related to attachment experience. Then, as a first step, we relied on existing scales that should measure aspects of those working models. One set of scales focused on components of one's model of self, such as self-esteem, belief in one's ability to control the outcomes in one's life, and various interpersonal qualities such as expressiveness and responsiveness to others. A second set of scales assessed models of the social world in general, including aspects of trust and beliefs about human nature such as whether people are altruistic or difficult to understand. Finally, we measured beliefs and attitudes about romantic love by assessing love styles.

A second aim of this study was to explore the relation between working models and attachment history. We expected to find a direct association between beliefs about oneself and the social world in adulthood and reports of relationships with parents in childhood.

A final aim was to further evaluate the Adult Attachment Scale and compare results using this dimensional scale with results based on discrete styles. As in Study 1, discriminant and cluster analyses were performed and used to assign people to attachment styles. Because of space limitations, the details of

Table 6
Descriptions of Parental Caregiving Style

1. *Warm/Responsive*—She/he was generally warm and responsive; she/he was good at knowing when to be supportive and when to let me operate on my own; our relationship was almost always comfortable, and I have no major reservations or complaints about it.
2. *Cold/Rejecting*—She/he was fairly cold and distant, or rejecting, not very responsive; I wasn't her/his highest priority, her/his concerns were often elsewhere; it's possible that she/he would just as soon not have had me.
3. *Ambivalent/Inconsistent*—She/he was noticeably inconsistent in her/his reactions to me, sometimes warm and sometimes not; she/he had her/his own agendas which sometimes got in the way of her/his receptiveness and responsiveness to my needs; she/he definitely loved me but didn't always show it in the best way.

Note. From Hazan & Shaver's (1986) unpublished questionnaire. Reprinted by permission.

these results are presented in tables only. Our primary focus is on results based on the Adult Attachment Scale dimensions.

Method

Subjects

Subjects were 80 female and 38 male undergraduates at the University of Southern California who participated for extra credit in their introductory psychology class. Subjects ranged in age from 17 to 24, with a mean of 18.6.

Materials and Procedure

All measures were administered in a questionnaire. The first section obtained background information such as age, sex, race, and religious preference, as well as the 18-item Adult Attachment Scale described in Study 1. In addition, respondents were asked to rate on a 9-point scale the extent to which each of Hazan and Shaver's (1987) three attachment descriptions characterized them. To assess perceptions of attachment history with parents, we asked subjects to read three paragraphs describing the caregiving characteristics associated with a particular attachment style: One described a warm/responsive parent, a second described a cold/rejecting parent, and the third described an ambivalent/inconsistent parent. For each parent, subjects rated on a 9-point scale the extent to which each description characterized their relationship with this parent while they were growing up. These items were developed by Hazan and Shaver (1987) and are shown in Table 6.

Two measures of self-esteem were included: the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965), which focuses on general self-acceptance, and the Texas Social Behavior Inventory (TSBI; Helmreich & Stapp, 1974), which measures the extent to which a person feels self-assured in social situations. Next, subjects completed the Personal Attributes Questionnaire (PAQ; Spence & Helmreich, 1978), which contains two subscales of interest: Instrumentality and Expressiveness.[2] The Instrumentality scale measures agency and self-assertiveness, and the Expressiveness scale measures interpersonally oriented characteristics such as being kind and aware of others (Helmreich, Spence, & Wilhelm, 1981; Spence, 1983; Spence & Helmreich, 1980).

Next, subjects completed the Opener Scale (Miller, Berg, & Archer, 1983), which measures the extent to which people perceive themselves to be warm and responsive listeners, and able to get others to "open up" about themselves. Dion and Dion (1978, 1985) argued that response to another's self-disclosure is an important aspect of intimacy, and they

suggested that early attachment relationships may influence one's capacity for psychological intimacy.

The first scale used to assess models of the social world was the Rotter Trust Scale (Rotter, 1967), which measures three dimensions of trust (Stein, Soskin, & Korchin, 1974): belief in the integrity of social role agents (e.g., elected officials and the judiciary), belief in the trustworthiness of human motives, and belief in the dependability of others. Next, subjects completed Wrightsman's Philosophies of Human Nature Scale (PHN; Wrightsman, 1964). This 84-item scale is composed of six subscales measuring general beliefs about various aspects of human nature and social behavior: Trustworthiness, Altruism, Independence (the extent to which people maintain their convictions in the face of social pressures to conform), Strength of Will and Rationality (the extent to which people have control over the outcomes in their lives), Complexity of Human Nature, and Variability in Human Nature (the extent to which people are unique and able to adapt or change their basic nature over time or circumstances).

To assess beliefs about romantic love, we asked subjects to complete the revised Love Attitudes Scale (LAS; Hendrick & Hendrick, 1986), based on Lee's (1973, 1977) typology of love styles. Lee argued that people experience, show, and think about love differently, and he proposed six styles of loving: Eros (passionate love), Storge (friendship love), Ludus (game-playing love), Agape (selfless love), Mania (obsessive/dependent love), and Pragma (logical love). The LAS has six subscales, each measuring one love style. Subjects were asked to complete the scale with their current or most important romantic partner in mind. If they had never been in love, they were asked to answer in terms of what they thought their feelings would most likely be.

Subjects completed the questionnaire in small groups of 5 to 10. They were allowed as much time as they needed, and most finished within 1 hr. Because of the number of scales and the length of the questionnaire, the two self-esteem scales and the trust scale were included as part of another questionnaire study ($N = 118$). The two studies were conducted within 1 month of each other and used the same subject pool.

Results

Assigning Individuals to Attachment Styles

Two methods were used to assign people to attachment types. First, a discriminant analysis was performed using scores on Close, Depend, and Anxiety as the predictor variables and Hazan and Shaver's (1987) discrete measure as the grouping variable. (Because subjects rated each of Hazan and Shaver's three descriptions separately, they were assigned to the one category they rated the highest.) Results were very similar to those obtained in Study 1. Using the discriminant weights, and prior group membership probabilities, each person was classified as secure, avoidant, or anxious. Consistent with Study 1, two discriminant functions were obtained, combined $\chi^2(6, N = 118) = 73.74$, $p < .001$. After removal of the first function there was still significant discriminating power for the second function,

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[2] The two subscales of the Personal Attributes Questionnaire (PAQ) are more commonly known as Masculinity and Femininity. However, the authors of the PAQ have noted that the subscales do not measure a wide range of characteristics associated with being masculine or feminine. The scales are much more narrowly defined, and the authors urge users of the PAQ to treat them as measures of "expressiveness" and "instrumentality" and not traditional masculinity and femininity (Helmreich, Spence, & Wilhelm, 1981; Spence, 1983; Spence & Helmreich, 1980).

$\chi^2(2, N = 118) = 24.82, p < .001$. The two functions accounted for 69.11% and 30.89%, respectively, of the between-groups variability. Function 1 was defined by scores on Close and Depend and discriminated the secure and anxious types from the avoidant types. Function 2 was defined by scores on Anxiety and discriminated the secure and avoidant from the anxious types. Using the discriminant weights and prior group membership probabilities, we correctly classified 76% of the total sample. Within the three attachment categories, 85% of the secure, 65% of the avoidant, and 58% of the anxious subjects were classified correctly, which is an improvement over the classification match obtained in Study 1.

A cluster analysis was the second method used to assign people to attachment types, and, as in Study 1, two heuristic procedures were used to determine the optimal number of clusters. First, we graphed the number of clusters against the amalgamation coefficient. The curve began to flatten after the three-cluster solution and was basically flat after the two-cluster solution, suggesting three clusters in the data. Second, we examined the amalgamation coefficient and discovered a fairly large jump between the two- and three-cluster solution, again suggesting that the three-cluster solution was a good representation of the data. These results confirmed those of Study 1 and increased our confidence in the three-cluster solution. Attachment dimension scores for subjects within each cluster were then evaluated. Like Study 1, the clusters corresponded well to the three attachment styles. Each cluster was then labeled as one of the styles, thus categorizing subjects as secure, avoidant, or anxious. Mean scores on Close, Depend, and Anxiety for attachment styles, as classified by the two methods, are shown in Table 7.[3] Consistent with Study 1, both methods resulted in a similar pattern of mean differences, but the cluster analysis tended to maximize these differences. Therefore results related to the discrete types were based on the cluster analysis only.

Working Models of Self

Correlations between the Adult Attachment Scale and the RSE, the TSBI, PAQ, and Opener Scale are presented in the top

Table 7
Adult Attachment Scale Scores for the Three Attachment Types as Classified by Discriminant and Cluster Analyses: Study 2

Adult attachment scale dimension	Attachment style			$F(2, 116)$
	Secure	Avoidant	Anxious	
Discriminant analysis				
n	74	30	14	—
Close	23.21$_a$	16.03$_b$	19.92$_c$	85.65*
Depend	20.08$_a$	16.62$_b$	15.79$_b$	12.30*
Anxiety	13.68$_a$	14.93$_a$	21.86$_b$	28.87*
Cluster analysis				
n	39	31	49	—
Close	23.72$_a$	19.19$_b$	19.86$_b$	18.01*
Depend	23.38$_a$	16.90$_b$	15.96$_b$	94.09*
Anxiety	14.95$_a$	10.07$_a$	17.94$_b$	55.13*

Note. Scores had a possible range of 6 to 30. Within each row, means with different subscripts differed significantly at $p < .05$ according to a Scheffé test.
* $p < .001$.

Table 8
Correlations Between the Adult Attachment Scale Dimensions and Mental Models of Self and the Social World

Scale	Adult attachment scale		
	Close	Depend	Anxiety
Rosenberg Self Esteem Scale (Rosenberg, 1965)	.19**	.13	−.29****
Texas Social Behavior Inventory (Helmreich & Stapp, 1974)	.29***	.22**	−.30****
Personal Attributes Questionnaire (Spence & Helmreich, 1978)			
Instrumentality	.04	−.02	−.48****
Expressiveness	.38****	.31****	.01
Opener Scale (Miller, Berg, & Archer, 1983)	.15*	.13	−.06
Rotter Trust Scale (Rotter, 1967)			
Integrity of Social Agents	.20**	.20**	−.08
Trustworthiness of Human Motives	.14	.13	−.10
Dependability of People	.22**	.24***	.02
Philosophies of Human Nature (Wrightsman, 1964)			
Trust	.22**	.30****	−.16*
Altruism	.19**	.28***	−.27***
Independence	.30****	.40****	−.17*
Strength of Will	.19**	.35****	−.18**
Complexity	.11	.10	.30****
Variability	.20**	.18**	.07
Love Attitudes Scale (Hendrick & Hendrick, 1986)			
Eros	.05	.15*	−.02
Ludus	−.33****	−.16*	.03
Storge	−.24***	−.13	.02
Pragma	−.35****	−.15*	.05
Mania	−.15*	−.02	.52****
Agape	.20**	.09	.16*

Note. All p values are for two-tailed tests.
* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

section of Table 8. People who were comfortable with closeness and able to depend on others had greater feelings of self-worth and social confidence and were higher in expressiveness. Individuals who were high on the dimension of Anxiety had a lower sense of self-worth and social self-confidence, and were much lower in instrumentality.

Overall, these results suggest that subjects with a more secure attachment style (as indexed by high scores on Close and Depend and low scores on Anxiety) had a more positive view of themselves than did subjects who were either avoidant (low scores on Close, Depend, and Anxiety) or anxious (high scores on Anxiety). This was confirmed by results shown in Table 9,

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[3] There are several reasons why we did not use Hazan and Shaver's (1987) measure to assign people to categories. First, as described in Study 1, there are a number of problems with this measure on a theoretical level. Second, on a more practical level, compared with the other methods of classifying people, Hazan and Shaver's measure resulted in the smallest differences between groups on the attachment dimensions (Close, Depend, and Anxiety). Finally, because assignment from the discriminant analysis was so similar to that based on Hazan and Shaver's measure (76% classification match), presenting results for both would be largely redundant.

Table 9

Mean Differences on Mental Models Scales for Three Attachment Types as Classified by Cluster Analysis

Scale	Secure	Avoidant	Anxious	F
Rosenberg Self Esteem Scale (Rosenberg, 1965)	3.53$_a$	3.49	2.26$_b$	3.64**
Texas Social Behavior Inventory (Helmreich & Stapp, 1974)	3.75$_a$	3.46	3.38$_b$	5.01***
Personal Attributes Questionnaire (Spence & Helmreich, 1978)				
Instrumentality	30.08	31.74$_a$	27.67$_b$	6.78***
Expressiveness	33.36$_a$	30.32$_b$	31.80	3.72**
Opener Scale (Miller, Berg, & Archer, 1983)	4.08	4.01	3.95	ns
Rotter Trust Scale (Rotter, 1967)				
Integrity of Social Agents	2.78$_a$	2.40$_b$	2.63$_a$	5.48***
Trustworthiness of Human Motives	2.43$_a$	2.16$_b$	2.18$_b$	3.39**
Dependability of People	3.24$_a$	2.76$_b$	3.14$_a$	7.12****
Philosophies of Human Nature (Wrightsman, 1964)				
Trust	3.57	3.35	3.24	2.44*
Altruism	4.11$_a$	3.81	3.64$_b$	4.88***
Independence	4.27$_a$	3.86$_b$	3.71$_b$	8.32****
Strength of Will	4.84$_a$	4.50	4.35$_b$	6.22***
Complexity	4.36	4.00$_a$	4.40$_b$	4.15**
Variability	5.15	4.87	5.04	2.44*
Love Attitudes Scale (Hendrick & Hendrick, 1986)				
Eros	3.97	3.76	3.74	ns
Ludus	2.36	2.75	2.60	ns
Storge	3.67	3.82	3.97	2.70*
Pragma	2.60$_a$	3.15	3.01$_b$	4.63***
Mania	3.02$_a$	2.53$_b$	3.20$_a$	8.85***
Agape	3.62$_a$	3.26$_b$	3.66	3.71**

Note. Within each row, means with different subscripts differed at $p < .05$ according to a Scheffé test.
* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

which presents mean scores on our mental models items for the three attachment types as classified by the cluster analysis.

Working Models of the Social World

Correlations between the Adult Attachment Scale and the Rotter Trust Scale and PHN are shown in the middle section of Table 8. These results indicate that subjects who were comfortable with intimacy (Close) and felt others were available when needed (Depend) were more trusting in general and more likely to believe people are altruistic, willing to stand up for their beliefs (Independence), able to control the outcomes in their lives (Strength of Will), and able to adapt their behavior across situations or over time (Variability). In contrast, subjects who scored high on the Anxiety scale believed others to be less altruistic and more likely to conform to social pressures, and believed that human nature is complex and difficult to understand (Complexity).

Thus, subjects with a more secure attachment style (high scores on Close and Depend, and low scores on Anxiety) tended to have more positive views about the social world and about human nature in general, whereas avoidant and anxious subjects tended to have more negative and mistrusting views of others. This was confirmed by the results based on the discrete types, as shown in Table 9.

Working Models of Love

Correlations between the Adult Attachment Scale and the LAS are shown in the lower section of Table 8. Subjects com-

fortable with closeness were less likely to have a love style characterized as game playing (Ludus), friendship based (Storge), or logical (Pragma), and were more likely to be characterized by selfless love (Agape). The Depend scale was not significantly related to the LAS, but subjects who were worried about being abandoned or unloved were much more likely to exhibit an obsessive/dependent love style (Mania).

Overall, higher scores on the Close scale, which are associated with a more secure attachment style, were related to views of love that were more romantic and less practical, whereas scores on the Anxiety scale, which is associated with an anxious style, were strongly related to an obsessive/dependent love style. This was confirmed by results shown in Table 9.

Relations Between Parenting Style and Working Models

To assess the relation between attachment style dimensions and attachment history, we correlated items measuring perceptions of parents' caregiving style (Table 6) with scores on Close, Depend, and Anxiety. As shown in the upper section of Table 10, subjects who perceived their relationship with their mother and father as warm and not rejecting were more likely to feel that they could depend on others and less likely to be anxious about being abandoned or unloved. In addition, subjects who remembered their mother as being warm and responsive were more comfortable with closeness and intimacy. Finally, ambivalent/inconsistent mothering was associated with low scores on Depend and higher scores on Anxiety. Thus, consistent with

Table 10

Correlations Among Parents' Caregiving Style, Adult Attachment Scale Dimensions, and Mental Models Scales

Scale	Mother			Father		
	Warm	Cold	Inconsistent	Warm	Cold	Inconsistent
Adult Attachment Scale						
Close	.20**	−.07	−.15*	.09	−.06	−.08
Depend	.41****	−.26***	−.27***	.21**	−.23***	−.06
Anxiety	−.23***	.21**	.20**	−.20**	.18**	−.13
Mental models scales						
Rosenberg Self-Esteem Scale (Rosenberg, 1965)	.25***	−.19**	−.15*	.05	−.01	.03
Texas Social Behavior Inventory (Helmreich & Stapp, 1974)	.23***	−.28***	−.24***	.14	−.06	−.05
Personal Attributes Questionnaire (Spence & Helmreich, 1978)						
Instrumentality	.14	−.08	−.17*	.17*	−.11	−.13
Expressiveness	.21**	−.05	−.03	.18**	−.11	−.02
Rotter Trust Scale (Rotter, 1967)						
Integrity of Social Agents	.10	.05	.02	.10	−.18**	−.05
Trustworthiness of Human Motives	−.10	.14	.14	.07	−.07	−.09
Dependability of People	.32****	−.20**	−.12	.23***	−.26***	−.20**
Philosophies of Human Nature (Wrightsman, 1964)						
Trust	.17*	−.13	.07	.03	−.20**	−.03
Altruism	.18**	−.12	−.09	.11	−.23***	−.10
Independence	.17*	−.09	−.04	.06	−.25***	−.05
Strength of Will	.23***	−.15*	−.11	.18**	−.27***	−.20**
Complexity	.12	−.04	.10	−.06	.00	.04
Variability	−.03	−.02	.05	.03	−.15*	.00

Note. All p values are for two-tailed tests.
* $p < .10$. ** $p < .05$.   *** $p < .01$.   **** $p < .001$.

attachment theory, memories of relationships with parents were related to subjects' feelings about security in adulthood. In general, those with a more secure attachment style perceived their parents to have been warm and not rejecting, whereas those with an anxious attachment style reported their parents to have been cold or inconsistent.

Next, to assess the relation between working models and attachment history, we correlated items measuring perceptions of parents' caregiving style with measures of working models of self and the social world. As shown in the lower section of Table 10, subjects who rated their mothers as cold or inconsistent were lower in self-worth and social confidence, whereas those who rated their mothers as warm tended to be higher in self-esteem and expressiveness.

Correlations with the Rotter Trust Scale showed the strongest relation for the Dependability of People subscale. Consistent with Bowlby's theory, greater trust in the dependability of others was related to subjects' perceptions of their mothers and fathers as having been warm and responsive, whereas perceptions of rejecting or inconsistent parenting were associated with less confidence in others.

Examination of the PHN scale showed that subjects who perceived their fathers as cold and rejecting viewed people as less

trustworthy, altruistic, independent, and able to control the outcomes in their lives, whereas subjects who perceived their mothers as warm tended to view people more positively on these dimensions.

Sex Differences

Each of the preceding analyses was also conducted separately for men and women. The pattern of results for men and women was very similar, and few significant differences were obtained.

Discussion

Study 2 provides further evidence that differences in attachment are indeed linked to different patterns of beliefs about self and others, in ways consistent with attachment theory. For example, subjects who were comfortable with closeness and able to depend on others (a more secure attachment style) had a higher sense of self-worth, had greater social self-confidence, and were more expressive. Their beliefs about the social world were also positive; they viewed people as trustworthy and dependable, altruistic, willing to stand up for their beliefs, and having control over the outcomes in their lives. Finally, subjects

who were comfortable with closeness were less likely to have a love style characterized as game playing, obsessive, logical, or friendship based and more likely to have a style described as selfless. This is partially consistent with Levy and Davis's finding (1988) (using Hazan and Shaver's [1987] attachment measure), that subjects with a more secure attachment style were less game playing and more selfless in their love style.

Subjects with a more anxious attachment style (as indexed by higher scores on the Anxiety scale) demonstrated a very different pattern, consisting largely of negative beliefs about self and others. Greater anxiety in relationships was associated with a lower sense of self-worth and social self-confidence and lack of assertiveness or sense of control. In addition, higher Anxiety scores were associated with a view of people as less altruistic, unable to control the outcomes in their lives, and complex and difficult to understand. Finally, subjects who scored higher in anxiety were much more likely to have an obsessive, dependent love style. This is consistent with Levy and Davis's (1988) finding of a strong positive relation between anxious attachment and a manic love style.

In addition, evidence was obtained for the relation between attachment style dimensions and attachment history. In general, subjects who perceived their relationship with their parents as warm and not rejecting were more confident that they could depend on others and were less anxious about being abandoned or unloved. In contrast, those who remembered their parents as cold or inconsistent scored higher on Anxiety and lower on Depend. Moderate evidence was obtained for the link between working models and attachment history. Overall, subjects who perceived their parents to have been warm and responsive were more likely to have positive views of themselves and of human behavior, whereas unresponsive or inconsistent parenting was associated with a more negative self-image and more negative views of others. For example, subjects who perceived their parents as warm and responsive believed others to be trustworthy and dependable and believed that people have control over the events in their lives. Subjects who perceived their parents as rejecting had lower self-esteem and were less likely to view others as trustworthy or able to control the outcomes in their lives. Of course, caution must be used in interpreting these results because they are based on retrospective reports, which are subject to reconstructive errors and biases. Nevertheless, these findings are encouraging and suggest an area for future research.

Finally, results based on the attachment dimensions were very consistent with those based on discrete types. However, the attachment dimensions did reveal more significant findings (there were several cases in which the analysis by dimensions revealed a relation that was not obtained with the analysis by styles). Thus, the attachment scale provides a more sensitive measure of attachment. Further, the analysis by dimensions provides greater insight into the nature of the relations between attachment and other variables, which can be very important, as was seen even more clearly in Study 3.

The results of Study 2 provide added support for the Adult Attachment Scale and strong evidence that differences in adult attachment are related to working models of self and social relationships. These differences should have an important impact on interactions in all types of social encounters, and may be

particularly important in adult romantic relationships. To explore this further, in Study 3 we examined the relation of attachment style dimensions to the nature and quality of ongoing dating relationships. In discussing this study, we present results for the attachment dimensions only, because we believe that analysis by dimensions provides the most useful information, and analyzing by types and dimensions is largely redundant.[4]

Study 3

In Study 3 we investigated three hypotheses regarding the impact of attachment style dimensions on ongoing dating relationships. First, we explored the possibility that partners would have similar scores on these dimensions. Considerable research has found partner similarity on a variety of demographic and personality characteristics (see Buss, 1984; Buss & Barnes, 1986). Thus, there are reasons to anticipate similarity between partners in attachment style. For example, because attitude similarity is associated with attraction (Byrne, 1971), people may be attracted to others who have similar beliefs and expectations about love and who behave similarly in relationships.

However, the matching process may be much less direct. Attachment styles, and their associated working models, may result in matching through their organization of behavior and social perception. Working models about the nature of love and about oneself as a love object will influence how we respond to others, how we interpret others' actions, our expectations about what a partner should be like, and so on. For example, someone who is comfortable with closeness may be unwilling to tolerate a partner who avoids intimacy. In addition, because of differences in behavioral skills and interaction styles, it may be easier to deal with a partner who has a matching style.

We also suspected there would be similarity between the attachment style dimensions of a subject's partner and the caregiving style of the subject's parents, especially the opposite-sex parent. As suggested by attachment theory, the relation may be an indirect one resulting from expectations and beliefs about oneself and about relationships, which develop out of early parent–child interactions and are carried forward into later relationships. Parents teach us what relationships are like, what we are like as objects of care and affection, and what relationships between men and women are like. The opposite-sex parent in particular may serve as a model (or analogy) for heterosexual relationships. People may not only be more willing to tolerate

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[4] Although we do not present results for the discrete styles, a classification into styles was performed on the dating couples sample. We noted that, on the basis of Hazan and Shaver's (1987) measure, only 6 (2 men and 4 women) out of 142 subjects categorized themselves as anxious. This number was reduced to 5 (1 man and 4 women) when subjects were classified by a discriminant function analysis. As a result, an analysis by types would have forced us to eliminate the anxious group from our analyses. This would be an important loss of information because, as we shall see, the Anxiety dimension turned out to be an important predictor of relationship quality. This finding also suggests that people engaged in relationships may differ from those who are not. Consistent with this, Hendrick and Hendrick (1986, 1988), in their work on love styles, found differences between people who were "in love" and those who were not.

similar relationships but may also be more comfortable interacting in them. Sroufe and Fleeson (1986) suggested that people may seek to continue or reestablish relationships that are congruent with past relationships in order to maintain coherence and consistency within the self (see also Bowlby, 1973; Epstein, 1980; Swann, 1987; Swann & Read, 1981a, 1981b).

Finally, we predicted that attachment style dimensions would have a significant impact on relationship quality. We were concerned with three broad areas of relationship functioning: quality of communication, trust, and overall satisfaction. We further anticipated that subjects' attachment scale scores would be related to their own relationship experiences as well as the experiences and perceptions of their partner.

There are a number of reasons to suspect that attachment style dimensions would influence relationship characteristics. Most important, we believe these dimensions are primary organizing principles that guide a wide range of relational behaviors. For instance, a person who is comfortable with closeness and able to depend on others may be more willing to engage in behaviors that promote intimacy, such as self-disclosure. Some evidence for this was obtained in Study 2, which found that comfort with closeness was related to expressiveness, a quality that is likely to facilitate communication and intimacy. People who are anxious about being abandoned or unloved are likely to be less trusting of their partner, to experience jealousy, and to behave in ways that reflect their lack of confidence in themselves and in their relationship. Consistent with this, in Study 2 we found that anxiety was strongly negatively related to self-esteem, which has been shown to have important implications for relationship functioning (Dion & Dion, 1975, 1985), and to independence and self-assertiveness, which may affect one's ability to get needs met in a relationship. Study 2 also found that attachment dimensions were related to styles of loving, which have been shown to predict attitudes regarding relationships (Hendrick & Hendrick, 1987) and relationship quality in dating couples (Hendrick, Hendrick, & Adler, 1988; Levy & Davis, 1988).

In summary, Study 3 explored the role of attachment style dimensions in three aspects of ongoing dating relationships: partner matching on attachment dimensions; similarity between subjects' partner and parents, particularly the opposite-sex parent; and subjects' own and their partner's perceptions of relationship quality including communication, trust, and satisfaction.

Method

Subjects

Participants were 71 dating couples who were friends and acquaintances of members of an undergraduate research methods class at the University of Southern California. Couple members ranged in age from 18 to 44, with a mean age of 22. The sample was 61% White, 15% Black, 15% Asian, 1% Hispanic, and 8% other. The average relationship length was 17 months, ranging from 1 month to 5 years. Ninety-six percent of the couples were dating each other exclusively.

Materials

All measures were administered in a questionnaire. A cover letter described the purpose of the questionnaire and how responses would be kept confidential. First, we asked for age, sex, religious preference, ethnic background, length of relationship, and whether partners were dating each other exclusively. Next, attachment style dimensions were assessed with the Adult Attachment Scale, and perceptions of attachment history with parents were assessed with the parenting-style items described in Study 2 (see Table 6).

Subjects then rated several aspects of satisfaction with their relationship. Many items were adapted from the Dyadic Adjustment Scale (Spanier, 1976), a widely used measure of relationship satisfaction; others were developed specifically for the current purpose. Global satisfaction was measured by two items, one asking subjects to rate on a 9-point scale how happy they were in the relationship and the other asking how satisfied they were. Subjects' liking for their partner was rated on a 9-point scale ranging from not at all (1) to a great deal (9). Perceived conflict was measured by five items asking about frequency and severity of fights and arguments and the number of times either partner had left because of conflict. These items were standardized and summed into a single composite. Subjects rated perceived closeness on a single 9-point scale ranging from not at all close (1) to extremely close (9). Likelihood of marriage was measured by a single item asking subjects to rate on a 9-point scale how likely they were to marry their partner. Subjects also indicated on a 9-point scale the likelihood of leaving the relationship within the next 6 months. Finally, subjects indicated what percentage of their available free time they spent with their partner.

Subjects were then asked about the communication in their relationship. First, level of communication was measured by four items asking about such things as how good their partner was at communicating and how frequently they talked things over. These items were standardized and summed. Next, subjects indicated their perceptions of their partner's responsiveness to them by rating on a 9-point scale the extent to which each of nine items, such as "warm" or "responsive to my needs and feelings," fit their impression of their partner. Third, subjects filled out the Miller Topic Survey (Miller et al., 1983) to indicate both their own and their partner's tendency to disclose intimate information about themselves in the relationship. Finally, subjects filled out the Opener Scale (Miller et al., 1983), which measures the ability to get other people to open up and talk about intimate information.

Finally, several aspects of trust in one's partner were assessed. First, subjects filled out an 18-item scale developed by Rempel, Holmes, and Zanna (1985) to measure three components of trust in close relationships: predictability, dependability, and faith. Predictability is one's perceived ability to predict a partner's behaviors. Dependability is the extent to which one feels a partner can be relied on when needed. Faith measures belief that a partner will continue to be responsive and caring. Items were rated on a 7-point scale from strongly disagree (1) to strongly agree (7). Next, subjects judged the extent to which they had experienced or were likely to experience jealousy. Five items asked about the frequency with which they had engaged in five jealous behaviors, on a scale from never (1) to frequently (5). Next, five items described different social situations and asked subjects to indicate how jealous they would feel in such a situation, from not at all jealous (1) to very jealous (5). These items were adapted from Salovey and Rodin (1985a, 1985b). Reliabilities for measures with multiple items are shown in Table 11.

Procedure

Each member of a research methods class obtained 3 heterosexual dating couples among their friends and acquaintances who were dating steadily and were willing to fill out a questionnaire regarding their relationship. To promote honest responding, class members made sure that partners completed the questionnaires independently. To ensure confidentiality, partners were given a manila envelope and were told to seal the completed questionnaire in it. Also, they were given three options for returning the questionnaire: by campus mail addressed to the pro-

Table 11
Reliabilities of Relationship Measures: Study 3

Item	Cronbach's alpha
Satisfaction	.93
Conflict	.76
Partner predictable	.86
Partner dependable	.77
Faith in partner	.76
Jealous acts	.79
Jealous feelings	.91
Communication	.68
Opener Scale	.84
Partner responsive	.92
Self-disclosure—self	.86
Self-disclosure—partner	.89

fessor, by dropping it in the professor's departmental mail box, or by having their friend return it. Finally, questionnaires were identified by code numbers only.

Results

Matching Between Partners on Attachment Style Dimensions

First, to examine whether male and female partners differed overall on their scores on the three attachment dimensions, we compared the mean scores for men and women. Mean scores on Close, Depend, and Anxiety for men were 22.86, 20.07, and 12.43, respectively, and the mean scores for women were 23.04, 21.07, and 13.87, respectively (scores could range from 6 to 30). A multivariate analysis of variance comparing men and women on the three dimensions revealed a marginally significant multivariate effect, $F(3, 133) = 2.37$, $p = .09$. Univariate F tests for each dimension revealed nonsignificant effects for Close, $F(1, 135) = .056$, and Depend, $F(1, 135) = 1.44$, and a marginally significant effect for Anxiety, $F(1, 135) = 3.76$, $p = .07$. Thus, overall there were no differences between men and women, although there was a tendency for women to be somewhat higher in anxiety than were men.

Next, to examine similarities between partners, we correlated male and female partners' scores on the attachment dimensions. As shown in Table 12, correlations between partners' self-rated attachment style dimensions provided evidence for matching on certain of the dimensions (diagonal elements). Subjects who were comfortable getting close to others (high scores on Close) were more likely to be with a partner who was also comfortable with closeness, and those who felt they could depend on others (high scores on Depend) tended to be dating a partner who felt similarly, although this correlation was only marginally significant. There was no direct matching between the men and women on their fear of abandonment (Anxiety).

In addition to direct matching on certain dimensions, there were also relations between different attachment dimensions (off-diagonal elements). Men who were comfortable with closeness were more likely to be dating partners who felt they could depend on others and much less likely to be dating partners who were worried about abandonment. This same pattern was found

Table 12
Correlations Between Partners' Self-Reported Adult Attachment Scale Dimensions

Male	Female		
	Close	Depend	Anxiety
Close	.34***	.23**	−.36***
Depend	.21*	.19*	−.15
Anxiety	−.22*	−.22*	.04

Note. All p values are for two-tailed tests.
* $p < .10$. ** $p < .05$. *** $p < .01$.

for women who were comfortable with closeness, although these correlations were marginal.

Parent–Partner Matching

Women. As shown in Table 13, women who perceived their fathers as having been warm and responsive were more likely to be dating men who felt they could depend on others and tended to be more likely to date men who felt comfortable getting close, although this relation was marginal. On the other hand, women who saw their fathers as cold and distant or as inconsistent were less likely to be dating such men.

Men. Men who described their mother as cold or inconsistent were more likely to be dating women who were anxious. In addition, men who described their mothers as cold and distant were somewhat less likely to be dating a woman who felt she could

Table 13
Correlations Between Parents' Caregiving Style and Partner's Scores on Adult Attachment Scale Dimensions

Male partner's rating of parents	Female partner's attachment		
	Close	Depend	Anxiety
Mother			
Warm	.03	.12	−.21*
Cold	.00	−.20*	.33***
Inconsistent	.03	−.02	.25**
Father			
Warm	.11	−.05	.00
Cold	−.15	.02	.03
Inconsistent	−.08	−.02	.04

Female partner's rating of parents	Male partner's attachment		
	Close	Depend	Anxiety
Mother			
Warm	.12	.17	−.09
Cold	.11	−.06	−.05
Inconsistent	−.13	−.18	.11
Father			
Warm	.21*	.31***	−.07
Cold	−.26**	−.33***	.01
Inconsistent	−.16	−.23**	−.03

Note. All p values are for two-tailed tests.
* $p < .10$. ** $p < .05$. *** $p < .01$.

Table 14
Correlations Between Partner's Attachment Dimensions and
Subject's Own Relationship Experiences

Subject's own relationship experience	Male partner's attachment			Female partner's attachment		
	Close	Depend	Anxiety	Close	Depend	Anxiety
Satisfaction	.25**	.11	−.15	.12	.06	−.37****
Conflict	−.22*	−.03	−.03	−.13	−.17	.23**
Closeness	.33***	.05	−.05	.09	.14	−.32***
Like partner	.17	.04	−.02	.11	.03	−.36***
Marry	.13	.07	−.28**	.01	−.11	−.25***
Leave	−.02	−.17	.09	.10	.10	.10
Free time	.24**	.07	.01	−.02	.02	−.16
Predictable	.28**	.05	.07	.20*	.27**	−.22*
Dependable	.42****	.18	.12	.35***	.33***	−.24**
Faith	.39****	.15	.02	.27**	.16	−.42****
Jealous acts	−.28**	−.21*	.04	.03	.08	.00
Jealousy	−.23**	−.37****	−.02	−.12	−.21*	−.05
Communication	.33***	.16	.12	.27**	.05	−.37****
Partner responsive	.32***	−.08	.15	.21*	.04	−.17
Self as opener	.13	.08	.05	.07	−.02	−.28**
Own disclosure	.16	.03	.03	.25**	.09	−.31***
Partner self-disclosure	.23*	.03	.02	.26**	−.03	−.17

Note. All p values are for two-tailed tests.
$* p < .10.$ $** p < .05.$ $*** p < .01.$ $**** p < .001.$

depend on others, although this correlation was only marginal. Men's ratings of their father were not related to their partner's style.

Comparison of women and men. For both men and women, only descriptions of the opposite-sex parent predicted the attachment style dimensions of their partner. However, the component of attachment style that was predicted was different. For men, ratings of their mother mainly predicted whether their partner was worried about abandonment, whereas for women, ratings of their father predicted whether their partner was comfortable with closeness and thought he could depend on others.

Partner Attachment Style Dimensions and Subjects' Own Relationship Evaluation

Both men's and women's attachment style dimensions were related to their partner's evaluation of the relationship (see Table 14). However, the dimension of attachment that was most predictive differed for men and women. Men's degree of comfort with closeness (Close) was more consistently predictive of the women's evaluation of the relationship than were men's scores on Depend or Anxiety. In contrast, women's fears of abandonment (Anxiety) much more consistently predicted the men's evaluations than did the women's scores on Close or Depend.

Women's evaluation of the relationship. Women whose partners were comfortable with closeness (Close) were much more positive about their relationship overall. They were more satisfied, felt closer to their partner, and spent more of their free time with him. In addition, they tended to perceive less conflict in the relationship.

Women with partners who were high on Close also thought communication was better. They felt their partners were

warmer and more responsive to them, and they rated the general level of communication more highly. In addition, these women thought their partners self-disclosed to them more.

Finally, women seemed to be more trusting of partners who were comfortable with getting close. On the trust scale, women had more faith in their partner and thought he was more predictable and dependable when he was comfortable with closeness. Related to this, these women were less likely to engage in jealous behaviors and less likely to respond with jealous feelings in jealousy-evoking situations.

In contrast to the findings for men's Close scores, there were few significant relations with men's scores on the Depend and Anxiety scales. Women were less likely to report exhibiting jealous behaviors or feeling jealous when their partner felt he could depend on others. Finally, women thought they were less likely to marry men who were afraid of abandonment.

Men's evaluation of the relationship. Men's evaluations were related to how comfortable their partners were with getting close, although the relation was not as extensive as those for the women's evaluations. Women's comfort with closeness did not predict liking or satisfaction, but it did predict perceptions of trust and communication. Men with a partner who scored high on Close had more faith in their partner and thought she was more predictable and dependable. However, Close scores had no relation to jealousy. Men also perceived greater communication when their partner was comfortable with closeness. They rated the general level of communication as higher and tended to view their partner as warm and responsive. Further, these men reported that they self-disclosed more to their partner and that their partners disclosed more to them.

Although the woman's Depend score was not generally related to the man's evaluation, it was related to some aspects of

Table 15
Correlations Between Subject's Own Attachment Dimensions and Own Relationship Experiences

Subject's relationship experience	Female's own attachment			Male's own attachment		
	Close	Depend	Anxiety	Close	Depend	Anxiety
Satisfaction	.09	.11	−.25**	.32***	.18	.10
Conflict	−.24**	−.11	.17	−.06	.04	−.02
Closeness	−.01	.03	−.26**	.32***	.08	.01
Like partner	−.14	.04	−.12	.27**	.15	.03
Marry	−.01	.03	−.14	.24**	.12	.02
Leave	.00	−.10	.19*	−.19*	−.18	.03
Free time	.05	−.08	−.10	.21*	−.02	.11
Predictable	−.14	.04	−.12	.18	.22*	−.07
Dependable	.21*	.38****	−.31***	.20*	.09	−.22*
Faith	.14	.21*	−.50****	.40****	.21*	−.19*
Jealous acts	−.14	−.07	.27**	−.14	−.05	−.03
Jealousy	−.21*	−.09	.28**	−.18	−.26**	.09
Communication	.21*	.14	−.25**	.31***	.02	.09
Partner responsive	.13	.20*	−.25**	.11	.08	−.05
Self as opener	.36***	.13	−.19*	.27**	.00	.24**
Own disclosure	.20*	.19*	−.16	.34***	.12	−.07
Partner self-disclosure	.13	.13	−.22*	.15	−.05	−.04

Note. All p values are for two-tailed tests.
* $p < .10$. ** $p < .05$. *** $p < .01$. **** $p < .001$.

trust. Men with partners who felt they could depend on others thought their partner was more predictable and dependable. These men also tended to be less jealous.

The women's fear of abandonment was the strongest predictor of the men's responses. Men evaluated the relationship much more negatively when their partner was anxious. These men were less satisfied with the relationship, reported more conflict, felt less close to their partner, liked her less, and thought they were less likely to marry her. Men also trusted anxious partners less; they had less faith in their partner, and thought she was less predictable and dependable. However, there was no relation with jealousy.

Finally, men with anxious partners perceived communication problems. These men rated the general level of communication as lower and said that they self-disclosed less to their partner. Also, men with anxious partners were less likely to view themselves as the kind of person who can get others to talk about themselves (the Opener Scale).

Subjects' Own Attachment Dimensions and Relationship Evaluation

Interestingly, the dimensions of an individual's attachment style that predicted his or her partner's evaluation of the relationship also predicted the individual's own evaluation of the relationship (see Table 15).

Women. In general, women's comfort with closeness did not predict how positively they viewed the relationship, although women who were comfortable with being close did perceive less conflict. They also had a tendency to feel their partner was more dependable and to have fewer jealous feelings. Women who scored high on Close saw themselves as warm and responsive listeners, tended to rate the level of communication as higher, and reported greater self-disclosure.

Not surprisingly, women who said they felt they could depend on others thought their partner was more dependable and tended to have more faith in him. These women also tended to view themselves as disclosing more highly and viewed their partner as warm and responsive.

Just as women's Anxiety scores were the best predictor of their male partner's evaluation, women's fear of being abandoned or unloved was also the strongest predictor of their own relationship evaluations. Women who were afraid of being abandoned generally viewed their relationship more negatively. They reported lower general satisfaction and felt less close to their partner.

Women who were anxious also trusted their partners less; they had much less faith in their partner and thought he was less dependable. They were also more likely to act and feel jealous. Finally, anxious women perceived more communication problems. They rated the general level of communication as lower and their partner as less responsive. They also tended to think their partner self-disclosed less and tended to view themselves as less responsive listeners.

Men. Just as men's Close scores were the best predictor of the women's evaluation, men's Close scores were also the best predictor of their own evaluation. Men who were comfortable with closeness viewed their relationship more positively. They were more satisfied, felt closer to their partner, liked her more, and felt more likely to marry her. Men who were comfortable with closeness were also more trusting of their partner. They had much more faith in her and tended to feel she was more dependable.

Finally, men with high Close scores seemed to think their communication with their partner was better. They rated the general level of communication as higher and thought they disclosed more to their partner. These men also viewed themselves as being better at getting people to open up to them.

Although men's belief that they could depend on others was not related to a broad range of relationship characteristics, it was marginally related to trust. Men who scored high on Depend tended to have more faith in their partner, to think she was more predictable, and to be less jealous.

Finally, men who were anxious tended to have less faith in their partner and to feel she was less dependable. These men also viewed themselves as better able to get other people to open up.

Discussion

Study 3 explored the impact of adult attachment style dimensions on three aspects of ongoing dating relationships. Our first concern was whether partners were matched on these dimensions. Reasonable evidence for this was obtained. Individuals tended to be in relationships with partners who shared similar beliefs and feelings about becoming close and intimate with others and about the dependability of others. However, subjects did not simply choose partners who were similar on every dimension of attachment. For instance, men and women who were anxious did not seek partners who shared their worries about being abandoned and unloved. Rather, by choosing partners who were uncomfortable with getting close, they appeared to be in relationships that confirmed their expectations. Thus, as Weiss (1982) suggested, people may seek partners for whom their attachment system is already prepared to respond.

Caution must be used in interpreting these results because scores on the Adult Attachment Scale may have been influenced by the subject's current relationship. This may be particularly likely for Anxiety. For instance, people who are ordinarily secure may begin to worry about being abandoned if they think their partner is avoiding getting close. Nevertheless, if matching were due simply to the nature of the current relationship, we would not expect correspondence between a subject's partner and parents.

Our second goal was to examine the relation between the attachment style dimensions of a subject's partner and the perceived caregiving style of the subject's parents. Moderate evidence for this was obtained. For both men and women, descriptions of the opposite-sex parent predicted the attachment dimensions of their partner, but descriptions of the same-sex parent did not. However, the component of attachment that was predicted was different for men and women. For men, ratings of their mother mainly predicted whether their partner was anxious. For women, ratings of their father predicted whether their partner was comfortable with closeness and felt he could depend on others.

These findings suggest that the opposite-sex parent may be used as a model for what heterosexual relationships are like or should be like, and what a person should expect from a romantic partner. Thus, although both parents may contribute to a person's beliefs about him- or herself and the social world in general (as suggested by Study 2), the opposite-sex parent may play a special role in shaping beliefs and expectations central to heterosexual love relationships.

The correspondence between parents and partners, and the matching between partners, is consistent with Bowlby's view that individuals select and create their social environments in ways that confirm their working models and thus promote continuity in attachment patterns across the life span (see also Sroufe & Fleeson, 1986). However, because we studied couples in ongoing relationships, we cannot draw any firm conclusions regarding the active choices of partners in seeking their current mate. An important area for future research will be to examine the influence of attachment style and attachment history on the processes of mate selection and relationship development. In addition, an examination of relationship histories will help determine the extent to which people repeat relationship patterns.

Our final aim was to explore the role of attachment style dimensions in the quality of romantic relationships. The attachment style dimensions of a subject's partner were strong predictors of relationship quality, although the dimension of attachment that best predicted quality differed for men and women. Greater anxiety in women was related to more negative experiences and lower overall satisfaction for their male partners. In contrast, when men were comfortable with closeness and intimacy, their partners reported much more positive relationship experiences and greater overall satisfaction.

Why was the female's anxiety most predictive of male satisfaction and relationship perceptions? One possibility is suggested by the finding that anxious women were less trusting and more likely to behave jealously. Men may view a partner's insecurity and dependence as a restriction on their behavior and a threat to their freedom. This is consistent with Davis and Oathout's (1987) finding that female possessiveness was strongly negatively related to male satisfaction, but male possessiveness was much less predictive of female satisfaction. However, as noted earlier, we must be cautious in drawing conclusions about causality. In our sample, women who were anxious tended to have partners whom they perceived as less warm and responsive, and who were uncomfortable getting close and depending on others. As a result, the woman's anxiety may reflect the lack of commitment and intimacy within the relationship, rather than be the cause of it.

On the other hand, why was the best predictor of female satisfaction the male's degree of comfort with closeness? Because men are stereotyped as being less comfortable with intimacy, a man's willingness to become close and ability to communicate may be particularly valued. In our sample, men with high scores on Close rated themselves as high in disclosure and as warm, responsive listeners; their partners tended to perceive them this way as well. Consistent with our findings, Davis and Oathout (1987) found that good communication by the man (including disclosure and listening skills) strongly predicted the woman's satisfaction, but good communication by the woman did not predict the man's satisfaction. A similar pattern was obtained by White, Speisman, Jackson, Bartis, and Costos (1986), who found that for married couples, the husband's degree of "intimacy maturity" predicted the wife's marital adjustment, but the wife's intimacy maturity was unrelated to the husband's marital adjustment.

These sex differences are consistent with traditional stereotypes and may be due to differential socialization. Women are socialized to achieve emotional closeness, whereas men are socialized to develop an independent identity and to maintain their personal freedom (Hatfield, 1983). As a result, women may be particularly sensitive to their partner's depth of disclo-

sure, ability to listen attentively, and willingness to become close and intimate. In contrast, men may be particularly sensitive to their partner's dependency and attempts to restrict their freedom.

General Discussion

Three goals were addressed in these studies. First, in Study 1 a multi-item scale based on Hazan and Shaver's (1987) discrete measure was developed and evaluated. Analyses revealed three dimensions underlying this measure: (a) the extent to which an individual is comfortable with closeness and intimacy (Close), (b) the extent to which an individual believes others can be depended on to be available when needed (Depend), and (c) the extent to which an individual feels anxious about such things as being abandoned or unloved (Anxiety). Scores on Close and Depend were moderately positively correlated, and Anxiety was largely independent of the others. These dimensions capture many of the themes that should be central to an attachment system that has a goal of felt security, and they are conceptually similar to dimensions thought to underlie differences in childhood attachment styles.

Additional analyses demonstrated that these three dimensions could be used to more clearly define the three discrete attachment styles. For example, a person with a secure attachment style is comfortable with closeness, feels others are dependable and available when needed, and is not worried about being abandoned or unloved. However, although the Adult Attachment Scale can be used to retrieve the three discrete styles, we believe that often an analysis by dimensions has practical and theoretical advantages over an analysis by discrete types. In addition, in Study 2, when we compared results using the scale with results based on the discrete attachment types, the new scale resulted in somewhat stronger findings overall. Finally, Study 3 demonstrated the importance of measuring the dimensions when one's goal is to understand relations between attachment and other important variables.

Although the Adult Attachment Scale measures attachment style dimensions, we are not proposing that the concept of discrete attachment styles be abandoned, because it is important both conceptually and theoretically. Indeed, the scale is based largely on descriptions of three styles by Hazan and Shaver (1987), and there are several ways to recapture styles from dimensions. In addition, the cluster analyses provide evidence for discrete groups that differ in ways consistent with theoretical conceptions of the three styles. However, these analyses also offer tentative evidence that three groups may be too limited to describe adult attachment styles. In Ainsworth's infant typology, the three general styles are further broken down into eight substyles (see Main & Solomon, 1986, for discussion of a fourth general attachment style). We would not be surprised to find that an equally complicated category system was needed to adequately describe the full range of adult attachment styles. By specifying important underlying dimensions of attachment, and exploring configurations of these dimensions, we can begin to explore additional styles. The Adult Attachment Scale may provide a useful tool for this effort.

A second aim of our research was to explore relations between adult attachment dimensions and working models. Study 2 extended Hazan and Shaver's work by more systematically identifying and measuring aspects of working models that should be central to attachment. In addition, we found modest but encouraging evidence that these working models are related to perceptions of attachment with parents, which had not been examined previously.

Although the beliefs measured in our research are selected aspects of very complex cognitive models, even these limited fragments are likely to influence a wide range of social behaviors. Nevertheless, working models, or mental models, include much more than static beliefs. As Bowlby suggested, mental models are dynamic representations that may be altered in response to new information and can be mentally "run" to simulate the likely outcome of certain interactions or plans (see also Bretherton, 1985; Gentner & Stevens, 1983; Main et al., 1985; Miller & Read, in press; Read & Miller, 1989; Sroufe & Fleeson, 1986). Working models guide behavior, suggesting what and how things should be done. They enable us to predict the actions of others in order to plan or prepare for particular outcomes, and to interpret and explain the behavior of others so that we can understand our social world.

A promising area for future research will be developing techniques to examine in detail the contents and structure of individual models to further explore how they relate to attachment styles and account for differences in relationship experience. Because some aspects of working models may operate outside conscious awareness (Bretherton, 1985; Main et al., 1985), this may require a multimethod approach including in-depth interviews and such things as the analysis of problem-solving styles, simulated interactions, and social perception tasks that may reveal underlying models. We agree with Davis and Roberts (1985), who noted, "The time appears ripe for an exploration of how individual differences in conceptions of personal relationships determine the type of relations sought out and created by individuals . . . and the nature of the satisfactions gained in relationships" (pp. 155–156).

Additional work is also needed to understand the role of early relationships in the formation of working models. The attachment history measures we used are fairly simple assessments of what are surely very complex relationships between parents and children, and future research will benefit from richer, more sensitive measures. One such measure, the Adult Attachment Interview (George, Kaplan, & Main, 1984), is a long clinical interview that should be a valuable tool in this area. Using this interview with older adolescents, Kobak and Sceery (1988) found that affect regulation and representations of self and others were associated with the organization of memories concerning attachment relationships with parents.

Although people may bring stable patterns into relationships, these patterns are likely to be adapted in response to their partner's behavioral style. Read and Miller (1989) suggested that in addition to general models of self and others, people develop working models of specific partners and relationships (see also Bowlby, 1982, 1973). Hindy and Schwarz (1984, cited by Hazan & Shaver, 1987) gathered information on anxious attachments in more than one relationship and found evidence of both consistency and variation. Future research should focus not only on enduring styles of people, but on how two people

come together to form a unique relationship (Miller & Read, in press).

The final aim of our research was to explore the role of attachment style dimensions in dating relationships. The results of Study 3 suggest that scores on these dimensions are likely to influence who one chooses as a dating partner and may play an important role in organizing behaviors, perceptions, and expectations within dating relationships.

In conclusion, it seems time for social psychologists to begin integrating developmental theory and research into their study of adult love relationships. To fully understand adult relationships, we must learn how they are guided by the models we hold about ourselves and others and how these models are shaped by early experience. We believe that attachment theory can provide a useful framework for continuing this work.

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