Attachment Styles Among Young Adults: A Test of a Four-Category Model

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A new 4-group model of attachment styles in adulthood is proposed. Four prototypic attachment patterns are defined using combinations of a person's self-image (positive or negative) and image of others (positive or negative). In Study 1, an interview was developed to yield continuous and categorical ratings of the 4 attachment styles. Intercorrelations of the attachment ratings were consistent with the proposed model. Attachment ratings were validated by self-report measures of self-concept and interpersonal functioning. Each style was associated with a distinct profile of interpersonal problems, according to both self- and friend-reports. In Study 2, attachment styles within the family of origin and with peers were assessed independently. Results of Study 1 were replicated. The proposed model was shown to be applicable to representations of family relations; Ss' attachment styles with peers were correlated with family attachment ratings.

This article describes a new model of attachment styles in adulthood. Drawing on the theory of Bowlby (1973, 1980, 1982a), two types of internal working models are postulated—an internal model of the self and an internal model of others. Each internal model can be dichotomized as positive or negative to yield four theoretical attachment styles. This article summarizes the relevant childhood attachment literature, reviews recent work on adult attachment, describes the new model, and then presents two empirical studies designed to validate the proposed model.

Childhood Attachment and Internal Models

Attachment theory conceptualizes "the propensity of human beings to make strong affectional bonds to particular others" (Bowlby, 1977, p. 201). Bowlby hypothesizes that an attachment system evolved to maintain proximity between infants and their caretakers under conditions of danger or threat. More recent formulations view the attachment system as functioning continuously to provide children with a sense of "felt security" which facilitates exploration by the child (Ainsworth, Blehar, Waters, & Wall, 1978; Sroufe & Waters, 1977). The quality of early attachment relationships is thus rooted in the degree to which the infant has come to rely on the attachment figure as a source of security (Ainsworth et al., 1978).

On the basis of infants' responses to separation from and reunion with caretakers in a structured laboratory procedure, Ainsworth identified three distinct patterns of infant attachment: secure, anxious–resistant, and avoidant. Children classified as securely attached welcome their caretaker's return after a separation and, if distressed, seek proximity and are readily comforted. Infants classified as anxious–resistant show ambivalent behavior toward caregivers and an inability to be comforted on reunion. Infants classified as avoidant avoid proximity or interaction with the caretaker on reunion. Continuity in infant attachment patterns seems to be mediated largely by continuity in the quality of primary attachment relationships (see Lamb, Thompson, Gardner, Charnov, & Estes, 1985).

According to Bowlby's theory, children, over time, internalize experiences with caretakers in such a way that early attachment relations come to form a prototype for later relationships outside the family. Bowlby (1973) identifies two key features of these internal representations or working models of attachment: "(a) whether or not the attachment figure is judged to be the sort of person who in general responds to calls for support and protection; [and] (b) whether or not the self is judged to be the sort of person towards whom anyone, and the attachment figure in particular, is likely to respond in a helpful way" (p. 204). The first concerns the child's image of other people; the second concerns the child's image of the self. Recent research has examined the nature of internal working models in relation to children's earlier attachment styles. The data show, for example, that children classified as ambivalent hold negative views of themselves, but the data are not as consistent with respect to children classified as avoidant (Cassidy, 1988; Kaplan & Main, 1985; Main, Kaplan, & Cassidy, 1985). A considerable body of research also links the child's attachment style at 12 or 18 months to the child's social and emotional adjustment through early childhood (see Bretherton, 1985).

Attachment in Adulthood

A basic principle of attachment theory is that attachment relationships continue to be important throughout the life span (Ainsworth, 1982, 1989; Bowlby, 1977, 1980, 1982b). Although

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evidence exists documenting the continuity of attachment-related behaviors (see Belsky & Pensky, 1988; Bowlby, 1973, 1980; Ricks, 1985; Rutter, 1988), investigators have only recently examined the relationship between working models of attachment and social and emotional adaptation in adults. Main has developed an Adult Attachment Interview (George, Kaplan, & Main, 1987; Main & Goldwyn, 1988) that explores adults' representations of childhood attachment relations. On the basis of these interviews, mothers have been classified into attachment groups that parallel the three childhood attachment patterns described above and are predictive of the quality of the mother's interaction with her own child and the security of the child's attachment (Crowell & Feldman, 1987; Grossmann, Fremmer-Bombik, Rudolf, & Grossmann, 1988; Main et al., 1985). Kobak and Sceery (1988) used this procedure to examine young adults' self- and other-representations, providing some evidence that secure subjects view themselves as relatively undistressed and others as supportive, that dismissive (avoidant) subjects view the self as undistressed and others as unsupportive, and that preoccupied subjects (corresponding to anxious–resistant children) view the self as distressed and others as supportive. (They did not discuss a category of people who might exhibit a negative view of both the self and others.)

Hazan and Shaver (1987) conceptualized romantic love as an attachment process and developed a self-report procedure to classify adults into three categories that correspond to the three attachment styles of childhood. In contrast to Main's procedure, these investigators relied on respondents' self-reports rather than on inferences from a semi-structured interview. Their results showed that compared with the secure group, the two insecure groups reported more negative experiences and beliefs about love, had a history of shorter romantic relationships, and provided less favorable descriptions of their childhood relationships with parents (see also Collins & Read, 1990). Subjects in the two insecure groups also reported more self-doubt and less acceptability to others than did those endorsing a secure self-description (see also Feeney & Noller, 1990).

These two approaches differed both in the particular attachment relationships focused on (parent–child versus love relationships) and in the methodology used for classifying subjects (interview versus self-report). Whereas the interview method identified avoidant adults as people who denied experiencing subjective distress and downplayed the importance of attachment needs, the self-report method identified people who reported feeling subjective distress and discomfort when they become close to others. Thus, a single avoidant–detached category may obscure conceptually separable patterns of avoidance in adulthood. Moreover, although Bowlby (1973) suggested that working models differ in terms of images of self and others, no study has considered all four categories that are logically derived by combining the two levels of self-image (positive vs. negative) with the two levels of image of others (positive vs. negative). The present research examined all four of these categories and assessed subjects through an interview as well as through subjects' own self-reports.

A Model of Adult Attachment

The model of the self and the model of the other as conceptualized by Bowlby can be combined to describe prototypic forms of adult attachment (Bartholomew, 1990). If a person's abstract image of the self is dichotomized as positive or negative (the self as worthy of love and support or not) and if the person's abstracted image of the other is also dichotomized as positive or negative (other people are seen as trustworthy and available vs. unreliable and rejecting), then four combinations can be conceptualized. Figure 1 shows the four attachment patterns that are derived from a combination of the two dimensions. Each cell represents a theoretical ideal, or prototype (Cantor, Smith, French, & Mezzich, 1980; Horowitz, Wright, Lowenstein, & Parad, 1981; Rosch, 1978), that different people might approximate to different degrees.

Cell I indicates a sense of worthiness (lovability) plus an expectation that other people are generally accepting and responsive. Because this cell corresponds conceptually to categories that investigators call securely attached (e.g., Hazan & Shaver, 1987; Main et al., 1985), we labeled it secure. Cell II indicates a sense of unworthiness (unlovability) combined with a positive evaluation of others. This combination of characteristics would lead the person to strive for self-acceptance by gaining the acceptance of valued others. This pattern corresponds conceptually to Hazan and Shaver's ambivalent group (Hazan & Shaver, 1987) and to Main's enmeshed or preoccupied with attachment pattern (Main et al., 1985) and is referred to as preoccupied. Cell III indicates a sense of unworthiness (unlovability) combined with an expectation that others will be negatively disposed (untrustworthy and rejecting). By avoiding close involvement with others, this style enables people to protect themselves against anticipated rejection by others. Although not explicitly discussed in previous work in adult attachment, this style may correspond in part to the avoidant style described by Hazan and Shaver (1987). We therefore labeled it fearful-avoidant. Finally, Cell IV indicates a sense of love–worthiness combined with a negative disposition toward other people. Such people protect themselves against disappointment by avoiding close relationships and maintaining a sense of independence and invulnerability. This style corresponds conceptually to the detached or dismissing of attachment attitude described by Main et al. (1985), so we labeled it dismissive-avoidant.

The dimensions in Figure 1 can also be conceptualized in

MODEL OF SELF
(Dependence)

	Positive (Low)	Negative (High)
Positive (Low) MODEL OF OTHER (Avoidance)	CELL I **SECURE** Comfortable with intimacy and autonomy	CELL II **PREOCCUPIED** Preoccupied with relationships
Negative (High)	CELL IV **DISMISSING** Dismissing of intimacy Counter-dependent	CELL III **FEARFUL** Fearful of intimacy Socially avoidant

Figure 1. Model of adult attachment.

terms of dependency on the horizontal axis and the avoidance of intimacy on the vertical axis (see labels in parentheses). Dependency can vary from low (a positive self-regard is established internally and does not require external validation) to high (positive self-regard can only be maintained by others' ongoing acceptance). Avoidance of intimacy reflects the degree to which people avoid close contact with others as a result of their expectations of aversive consequences. The *dismissing* and *fearful* styles are alike in that both reflect the avoidance of intimacy; they differ, however, in the person's need for others' acceptance to maintain a positive self-regard. Similarly, the *preoccupied* and *fearful* groups are alike in that both exhibit strong dependency on others to maintain a positive self-regard, but they differ in their readiness to become involved in close relationships. Whereas the *preoccupied* cell implies a reaching out to others in an attempt to fulfill dependency needs, the *fearful* cell implies an avoidance of closeness to minimize eventual disappointment. Therefore, cells in adjoining quadrants of Figure 1 are more similar conceptually than those in opposite quadrants.

Study 1

We administered a semi-structured interview asking subjects to describe their friendship patterns; the subjects' responses were used to assess the degree to which each person approximated each of the four styles in Figure 1. We also obtained self-report and friends' ratings of each attachment style, so the three sources of data could be compared. Additional questionnaires were administered to subjects and their friends to test hypotheses implied by the model. In particular, self-reports of self-concept, sociability, and interpersonal problems were obtained, and self-reports of interpersonal problems were corroborated by the judgments of close friends.

The study tested three specific hypotheses. First, multidimensional scalings of each set of ratings (by raters, subjects, and friends) were expected to reproduce the organization of Figure 1 across all three sources of data (interview, self-report, and friend-report). Second, self-concept measures were expected to differentiate groups with a positive model of the self (*secure* and *dismissing*) from those with a negative model of the self (*preoccupied* and *fearful*), whereas a sociability measure was expected to differentiate groups with a positive model of others (*secure* and *preoccupied*) from those with a negative model of others (*fearful* and *dismissing*). Third, the groups were expected to differ from each other in their interpersonal problems. The groups with a negative image of self (*preoccupied* and *fearful*) were expected to exhibit problems with passivity and unassertiveness, whereas those with a negative image of others (*fearful* and *dismissing*) were expected to describe problems with socializing and intimacy. Problems described by the *secure* group were not expected to be distinctive in content.

Method

Subjects

Forty female and 37 male students from an introductory psychology class constituted the target sample. They ranged in age from 18 to 22 ($M = 19.6$); 67% were White, 16% Asian, 5% Hispanic, 8% Black, and

4% other. An equal number of same-sex friends constituted the friend sample. The friends' age ranged from 18 to 23 ($M = 19.8$); 65% were White, 13% Asian, 13% Hispanic, 4% Black, and 5% other.

Procedure

Equal numbers of men and women were randomly selected from the subject pool and contacted by telephone. First-year undergraduate students were excluded to ensure that subjects had been at college long enough to make close friends. Potential subjects were invited to participate with a friend in "a study of friendship and how well people know each other." Friends were required to be close, same-sex, nonromantic friends whom subjects had known for at least 6 months. Subjects received course credit for participation, and their accompanying friends were paid $5.

Subjects were tested in groups of two to four friendship pairs. Subjects and their friends completed two sets of questionnaires, one requesting demographic and personality information about themselves and the other asking the same questions of their partner. Instructions were given for participants to answer the second set of questions "according to your perceptions and knowledge of your friend's character, feelings or behavior, and not according to how you think your friend may be likely to answer them." Then each subject and friend were separated to complete the questionnaires. To avoid contrast effects, target subjects completed the self-report questionnaires first, and their friend completed the friend-report first. A second session was then scheduled for subjects to receive the interview.

Measures

Attachment interview. The first author administered a semi-structured interview, which lasted approximately 60 min, to subjects in the target sample. Each interview was tape recorded. The interviewer asked subjects to describe their friendships, romantic relationships, and feelings about the importance of close relationships. If subjects had not been involved in a romantic relationship, they were asked the reasons. They were asked about loneliness, shyness, their degree of trust of others, their impressions of other people's evaluations of themselves, and their hopes for any changes in their social lives.

On the basis of the interview audio recordings, three raters independently rated each subject on four 9-point scales describing the subject's degree of correspondence with each of the four prototypes. The raters comprised two advanced female undergraduate psychology majors and one female graduate student; they were blind to all other measures in the study. A set of criteria (available from the first author) described each prototype, and the rater was instructed to judge how well a subject's responses matched each of the prototypic descriptions. The four prototypes can be briefly summarized as follows. The *secure* prototype is characterized by a valuing of intimate friendships, the capacity to maintain close relationships without losing personal autonomy, and a coherence and thoughtfulness in discussing relationships and related issues. The *dismissing* prototype is characterized by a downplaying of the importance of close relationships, restricted emotionality, an emphasis on independence and self-reliance, and a lack of clarity or credibility in discussing relationships. The *preoccupied* prototype is characterized by an overinvolvement in close relationships, a dependence on other people's acceptance for a sense of personal well-being, a tendency to idealize other people, and incoherence and exaggerated emotionality in discussing relationships. The *fearful* prototype is characterized by an avoidance of close relationships because of a fear of rejection, a sense of personal insecurity, and a distrust of others. Alpha coefficients were computed to assess the reliability of the prototype ratings. The reliabilities ranged from .87 to .95. The ratings were averaged, and the highest of the four average ratings was considered to be the best-fitting

category for that subject. From this procedure, 47% of the sample was classified as *secure*, 18% as *dismissing*, 14% as *preoccupied*, and 21% as *fearful*. In addition, the raters were asked to rate each interview along 15 dimensions of relevance to adult attachment (see Appendix A for definitions of the dimensions).

Self- and friend-reports. All subjects completed demographics and friendship questionnaires, two self-concept measures, and a sociability measure. In addition, the subjects completed the Relationship Questionnaire and the Inventory of Interpersonal Problems twice, once to describe themselves and once to describe their friend. The friend's version of these questionnaires was identical to the standard self-report version, with the exception of wording: Instead of "I try to please other people too much," for example, the friend's version read "F[your friend] tries to please other people too much." The following questionnaires were used:

1. *The Demographics Questionnaire* included family information (e.g., marital status of parents, number of siblings) and personal activities (e.g., exercise, religious observance). Seven-point items assessed the degree of experienced depression, anxiety, and happiness (with reversed scoring). These three items were combined into a composite measure of subjective distress (α = .68).

2. *The Friendship Questionnaire* contained equivalent demographic, factual, and personal questions about the friend. One item assessed the duration of the friendship, and five items assessed the nature of the friendship (e.g., "Compared with close friendships you've had in the past, how close is your friendship with F?"). The latter five items were combined into a friendship closeness scale (target sample α = .80; friend sample α = .86).

3. *The Rosenberg Self-Esteem Inventory* (Rosenberg, 1965) is a 10-item scale that measures global self-esteem. A sample item is "I certainly feel useless at times" (reverse scored; coefficient α = .85).

4. *The Fey Self-Acceptance Scale* (Fey, 1955) is a 20-item measure of self-acceptance. A representative item is "I'm pretty satisfied with the way I am" (coefficient α = .86).

5. *The Sociability Scale* (Cheek & Buss, 1981) is a 5-item measure that assesses the degree to which people like to socialize with others. A sample item is "I like to be with people" (self-report coefficient α = .74; friend-report coefficient = .78).

6. *The Relationship Questionnaire* is an adaptation of the attachment measure developed by Hazan and Shaver (1987). This measure consists of four short paragraphs describing the four attachment styles (see Appendix B). Each respondent is asked to make ratings on a 7-point scale of the degree to which they (or their friend) resemble each of the four styles. These ratings are referred to as the self-report and friend-report attachment ratings.

7. *The Inventory of Interpersonal Problems* (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988; Horowitz, Rosenberg, Ureno, Kalehzan, & O'Halloran, 1989) is a 127-item inventory designed to assess interpersonal difficulties in a broad cross-section of interpersonal domains. Subjects are asked to describe the amount of distress that they have experienced from each interpersonal problem on a 5-point scale ranging from *not at all* (0) to *extremely* (4). The IIP has demonstrated acceptable reliability, validity, and sensitivity to changes that occur during psychotherapy (Horowitz et al., 1988; 1989). Responses on this inventory were scored using a circumplex procedure that locates subjects' responses within a two-dimensional interpersonal space (defined by the dimensions of warmth and dominance) that can be divided into eight octants (Kiesler, 1983; Wiggins, 1979). Separate subscales describe distress in each of these octants (Alden, Wiggins, & Pincus, 1990). Starting with the region of greatest dominance (neutral on warmth) and moving counterclockwise, the eight octants are labeled *overly autocratic* (e.g., "I try to control other people too much"), *overly competitive* (e.g., "I fight with other people too much"), *overly cold* (e.g., "I keep other people at a distance too much"), *overly*

introverted (e.g., "I feel embarrassed in front of other people too much"), *overly subassertive* (e.g., "It is hard for me to be assertive with another person"), *overly exploitable* (e.g., "I let other people take advantage of me too much"), *overly nurturant* (e.g., "I put other people's needs before my own too much"), and *overly expressive* (e.g., "I want to be noticed too much"). (Self-report subscales coefficient α = .66 to .88; friend-report subscales = .71 to .89.)

Results

Description of Attachment Groups

The 15 dimensions rated in the attachment interview were used to identify a profile of correlates for each of the four attachment prototypes. Because the prototype ratings were based, in part, on subjects' dimension scores, these data should be regarded as primarily descriptive. Table 1 shows mean ratings on each of the 15 dimensions rated in the attachment interview for subjects classified according to their highest prototype rating, as well as the results of one-way analyses of variance and Newman-Keuls comparisons for each dimension. Significant group differences existed for each of the 15 dimensions. Correlations between each dimension and each of the four continuous prototype ratings were also calculated.

As shown in Table 1, the *secure* group obtained uniquely high ratings on the coherence of their interviews and the degree of intimacy of their friendships. They also received high ratings on warmth, balance of control in friendships, and level of involvement in romantic relationships. Correspondingly, the *secure* prototype correlated highly with ratings of coherence, $r(75)$ = .78, $p < .001$, intimacy, $r(75)$ = .77, $p < .001$, balance of control in friendships, $r(75)$ = .29, $p < .01$, level of involvement in romantic relationships, $r(75)$ = .40, $p < .001$, self-confidence, $r(75)$ = .41, $p < .001$, and warmth, $r(75)$ = .59, $p < .001$.

The *dismissing* group scored uniquely high on self-confidence and uniquely low on emotional expressiveness, frequency of crying, and warmth. They scored lower than the *secure* and *preoccupied* on all scales reflecting closeness in personal relationships: self-disclosure, intimacy, level of romantic involvements, capacity to rely on others, and use of others as a secure base. They were also rated as being low on elaboration and caregiving and as being more in control than their social partners in both friendships and romantic relationships. Continuous ratings of the *dismissing* prototype correspondingly correlated positively with self-confidence, $r(75)$ = .52, $p < .001$, and negatively with elaboration, $r(75)$ = −.43, $p < .001$, emotional expressiveness, $r(75)$ = −.69, $p < .001$, frequency of crying, $r(75)$ = −.55, $p < .001$, warmth, $r(75)$ = −.68, $p < .001$, caregiving, $r(75)$ = −.37, $p < .001$, and with all scales signifying involvement in close relationships—self-disclosure, $r(75)$ = −.45, $p < .001$, intimacy, $r(75)$ = −.33, $p < .01$, level of romantic involvements, $r(75)$ = −.35, $p < .001$, reliance on others, $r(75)$ = −.57, $p < .001$, and use of others as a secure base, $r(75)$ = −.57, $p < .001$. Consistent with the group results, the *dismissing* rating was also positively associated with the balance of control scales, $r(75)$ = .40, $p < .001$, and $r(75)$ = .39, $p < .001$ for friendships and for romantic relationships, respectively.

The profile shown by the *preoccupied* group was opposite to that of the *dismissing* in almost every respect; the means of the two groups differed significantly on each of the 15 rating

Table 1
Mean Interview Ratings Across Attachment Groups

Model	Secure	Dismissing	Preoccupied	Fearful	$F(3, 76)$
Self	Positive	Positive	Negative	Negative	
Other	Positive	Negative	Positive	Negative	
n	36	14	11	16	

Measure

	Secure	Dismissing	Preoccupied	Fearful	$F(3, 76)$
General					
Elaboration	6.84_b	5.74_a	7.95_c	$6.23_{a,b}$	6.90*
Coherence	6.08_c	5.45_b	4.76_a	$5.00_{a,b}$	16.54*
Friendships					
Self-disclosure	4.00_b	3.33_a	5.12_c	3.05_a	19.40*
Intimacy	5.09_c	4.10_a	4.54_b	3.79_a	23.12*
Balance of control	2.94_c	3.10_c	2.62_a	2.60_a	7.94*
Romantic relationships					
Highest level involvement	3.61_c	2.60_a	3.61_c	2.60_a	6.06*
Balance of control	3.29_b	3.73_c	$2.91_{a,b}$	2.72_a	8.50*
Personal characteristics					
Self-confidence	3.54_c	3.93_d	2.86_b	2.24_a	27.77*
Emotional expressiveness	3.76_b	2.60_a	5.20_c	3.39_b	12.32*
Crying frequency	2.52_b	1.45_a	3.32_c	2.17_b	5.75*
Interpersonal characteristics					
Warmth	3.13_c	2.21_a	$2.94_{b,c}$	2.70_b	11.77*
Reliance on others	4.25_b	3.26_a	5.15_c	3.46_a	14.65*
Others as secure base	3.34_b	2.43_a	4.12_c	2.61_a	21.09*
Nonsocial vs social crying	2.50_b	2.17_b	3.70_c	1.75_b	7.60*
Caregiving	4.25_b	3.79_a	4.80_c	$4.25_{a,b}$	6.51*

Note. Means with different subscripts differ significantly at $p < .05$ according to Newman-Keuls pairwise comparisons.
* $p < .001$.

scales. The *preoccupied* group scored uniquely high on elaboration, self-disclosure (showing a tendency to disclose inappropriately), emotional expressiveness, frequency of crying, reliance on others, use of others as a secure base, crying in the presence of others, and caregiving. They were also rated high on level of romantic involvement and low on coherence and balance of control in friendships. Continuous ratings of the *preoccupied* prototype correlated positively with the presence of elaboration, $r(75) = .61$, $p < .001$, emotional expressiveness, $r(75) = .78$, $p < .001$, level of romantic involvements, $r(75) = .34$, $p < .01$, disclosure, $r(75) = .60$, $p < .001$, the tendency to rely on others, $r(75) = .64$, $p < .001$, use others as a secure base, $r(75) = .60$, $p < .001$, and caregiving, $r(75) = .38$, $p < .001$. The *preoccupied* rating was also positively correlated with the tendency to cry frequently, $r(75) = .61$, $p < .001$, and in the company of others, $r(75) = .45$, $p < .001$, and negatively correlated with the balance of control in friendships, $r(75) = -.35$, $p < .01$, coherence, $r(75) = -.39$, $p < .001$, and self-confidence, $r(75) = -.33$, $p < .001$.

Finally, the *fearful* group was rated significantly lower than the *secure* and *preoccupied* on self-disclosure, intimacy, level of romantic involvement, reliance on others, and use of others as a secure base when upset. They were also rated as uniquely low in self-confidence and as low on both balance-of-control scales. Continuous ratings of the *fearful* prototype showed negative correlations with self-confidence, $r(75) = -.70$, $p < .001$, and

coherence, $r(75) = -.35$, $p < .01$, and with all measures indicating closeness of relationships—including self-disclosure, $r(75) = -.43$, $p < .001$, intimacy, $r(75) = -.52$, $p < .001$, level of involvement in romantic relationships, $r(75) = -.36$, $p < .01$, capacity to rely on others, $r(75) = -.30$, $p < .01$, and use of others as a secure base, $r(75) = -.33$, $p < .01$. The *fearful* rating was also negatively correlated with the balance of control measures for both friends, $r(75) = -.40$, $p < .001$, and romantic relationships, $r(75) = -.32$, $p < .01$, indicating a tendency to assume a subservient role in close relationships.

A discriminant analysis was performed to assess the degree to which the various interview ratings accounted for the overall discrimination between the four attachment groups. The analysis (using a stepwise method with minimization of Wilks's lambda as the selection criterion) resulted in three significant discriminant functions, which correctly classified 92% of the sample—including 86% of the *secure* group, 94% of the *fearful* group, and 100% of both the *preoccupied* and *dismissing* groups. Twelve of the 15 interview rating scales independently contributed significant variance to the final functions, confirming that the group distinctions are multiply determined.

Sex Differences in Attachment Ratings

Female subjects received significantly higher ratings than male subjects on the interview-based *preoccupied* rating

(women's $M = 3.10$, men's $M = 2.00$), $t(75) = 2.88$, $p < .01$; male subjects received significantly higher ratings than female subjects on the interview-based *dismissing* rating (women's $M = 3.10$, men's $M = 4.01$), $t(75) = 2.70$, $p < .01$. To control for these sex differences, sex of subject was included as a covariate in all correlational and group analyses.

Depth of Friendships

On average, the pairs of friends reported reasonably close friendships of 1 to 2 years' duration. The four groups did not differ significantly in the length of the friendships according to either subjects, $F(3, 72) = 1.22$, *ns*, or their accompanying friend, $F(3, 72) = 0.75$, *ns*. In addition, there were no group differences in the composite measure of closeness of friendships according to either subjects, $F(3, 72) = 1.82$, *ns*, or friends, $F(3, 72) = 0.37$, *ns*. Therefore, the group differences reported below cannot be explained by a difference in either the length or the closeness of the friendships.

Intercorrelations of Attachment Styles

The pattern of correlations among the four attachment ratings for each method was hypothesized to be consistent with the model presented in Figure 1. Interview attachment ratings in opposing positions were negatively correlated: Between the *secure* and *fearful* ratings, $r(75) = -.55$, $p < .001$; between the *preoccupied* and *dismissing* ratings, $r(75) = -.50$, $p < .001$. The correlations between styles in adjacent positions showed nonsignificant or low negative correlations with one another (range $= -.26$ to $-.14$). Similar patterns were found for the self-report and friend-report attachment ratings (on the Relationship Questionnaire): The *secure* and *fearful* ratings were negatively correlated (respective $rs = -.65$ and $-.69$, $ps < .001$), and the *preoccupied* and *dismissing* ratings were negatively correlated (respective $rs = -.37$ and $-.41$, $ps < .001$). For both self- and friend-reports, the styles in adjacent positions showed nonsignificant or negative correlations with one another with one exception: Friend ratings of the *fearful* and *dismissing* styles were positively correlated, $r(75) = .27$, $p < .05$.

Multidimensional scalings were performed to determine if the dimensional structure underlying the intercorrelations of the attachment ratings were consistent with the proposed model. Intercorrelations among the four continuous attachment ratings were used as measures of proximity. A separate correlation matrix was prepared for each set of attachment ratings—interview ratings, the subjects' own ratings of their match to each attachment style (on the Relationship Questionnaire), and the friends' ratings of subjects on each attachment style (on the friend version of the Relationship Questionnaire). Each matrix was then subjected to a nonmetric multidimensional analysis using the program KYST (Kruskal, Young, & Seery, 1973). The one-dimensional solutions yielded stress values from .38 to .50 (Stress Formula 2; Kruskal & Wish, 1978), whereas the two-dimensional solutions yielded a stress value of .00 in each case. To facilitate comparisons with the theoretical model, the axes were rotated so that the *secure* placement was in the upper left quadrant at 45° from each axis. As indicated in

Figure 2, each set of data yielded a configuration roughly corresponding to the structure proposed in Figure 1.

In addition, a factor analysis was performed to examine the convergence of interview ratings, the subjects' self-ratings, and the friends' ratings. Figure 3 shows the results of a principal-components analysis with varimax rotation of the intercorrelations of the three sets of attachment ratings (with axes rotated to facilitate interpretation). The two factors accounted for 47% of the variance.[1]

Self-Concept Measures

Subjects in the two groups that were theoretically expected to reflect a negative self-image were hypothesized to exhibit lower scores on measures of self-concept than subjects in the two groups that were theoretically expected to reflect a positive self-image. Using subject classifications derived from the interview-based attachment ratings, a 2 (positive vs. negative self-image) × 2 (positive vs. negative other-image) multivariate analysis of covariance (MANCOVA; using sex as a covariate) was therefore performed on the three self-concept measures: self-esteem, self-acceptance, and subjective distress. The results showed a significant main effect for the self factor only, as hypothesized, $F(3, 70) = 7.11$, $p < .001$. Follow-up univariate analyses showed significant effects for the self factor for each of the three measures (all $ps < .001$; see Table 2 for group means). No other main effect or interaction was significant.

Correlational analyses confirmed this pattern of results. Ratings of the degree to which subjects matched the *secure* and *dismissing* prototypes were positively correlated with measures of self-concept (partial correlations, controlling for sex, ranged from .20 to .41, all $ps < .05$), whereas ratings of the degree to which subjects matched the *fearful* and *preoccupied* prototypes were negatively correlated with measures of self-concept (partial correlations ranged from $-.18$ to $-.49$, all $ps < .06$).

Sociability Measure

On the other hand, the model implies that subjects in the two groups that were expected to reflect a positive image of others would exhibit higher scores on the measure of sociability than subjects in the two groups expected to reflect a negative image of others. Therefore, a 2 (positive vs. negative self-image) × 2 (positive vs. negative other-image) analysis of covariance (ANCOVA) was performed on the sociability measure (with sex as a covariate). The results showed a significant main effect for the other factor only, as hypothesized, $F(1, 72) = 19.96$, $p < .001$ (see Table 2 for group means). Correspondingly, sociability was positively correlated (controlling for sex) with the *secure* and *preoccupied* prototype ratings, $r(74) = .36$, $p < .001$, and $r(74) = .24$, $p < .05$, and negatively correlated with the *fearful* and *dismissing* prototype ratings, $r(74) = -.41$, $p < .001$, and $r(74) = -.20$, $p < .05$.

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[1] Although the different sources of attachment ratings tended to converge, the correlations between specific attachment ratings across methods were not high. The average correlation between corresponding ratings across interview and self-reports was .34; the average correlation across interview and friend-reports was .25.
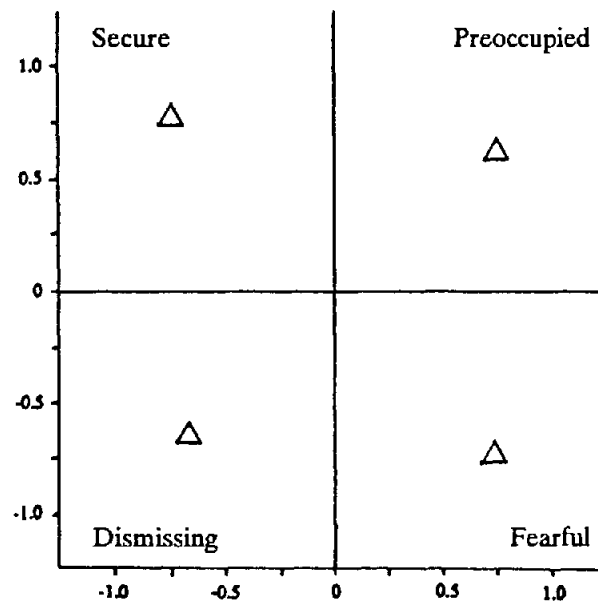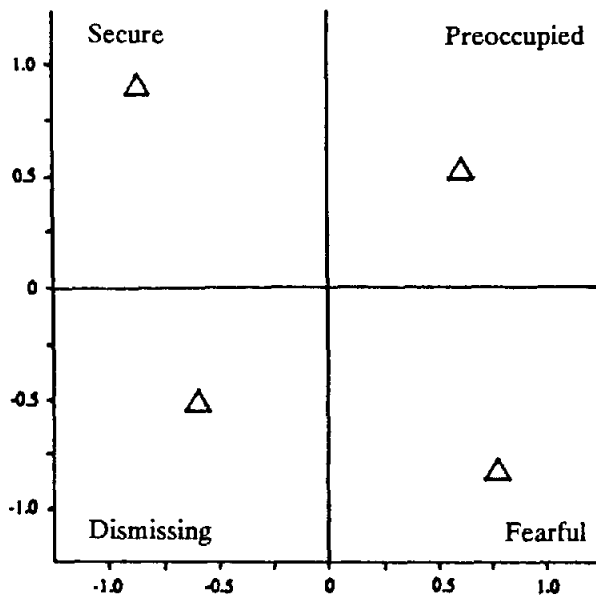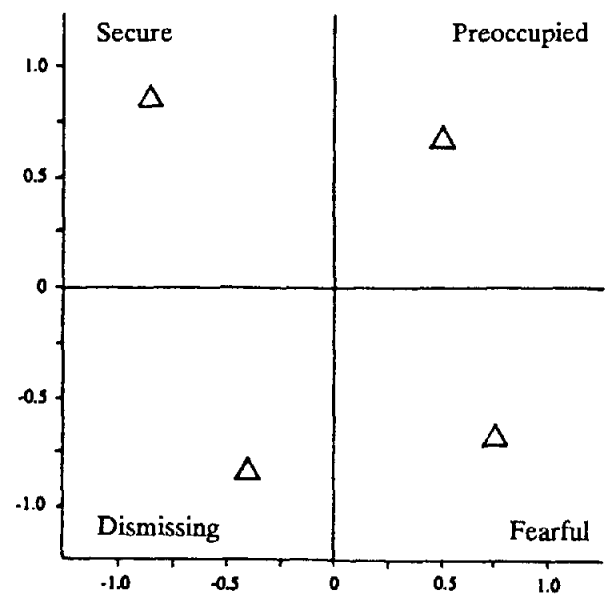
Figure 2. Multidimensional scalings of interview, self-report, and friend-report attachment ratings.
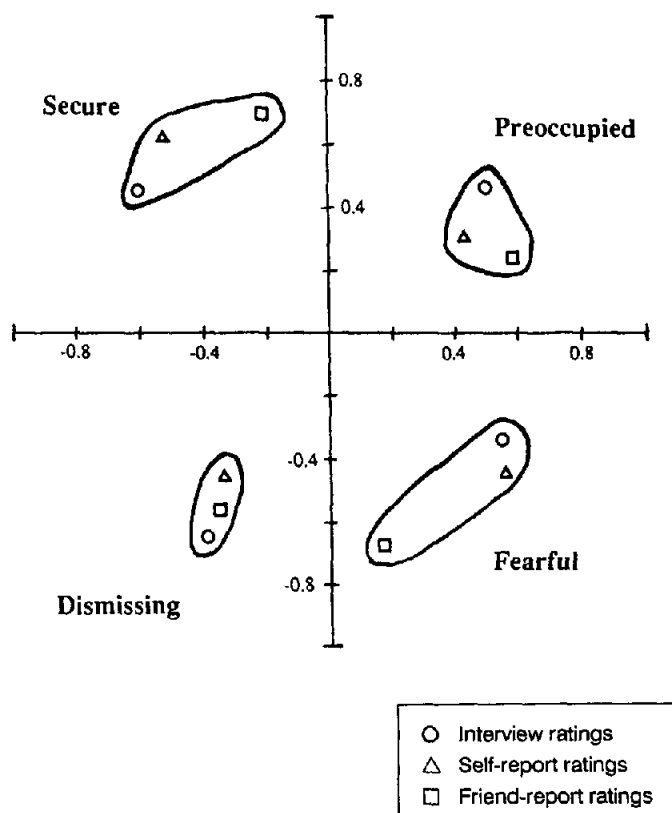
Figure 3. Factor analysis of interview, self-report, and friend-report attachment ratings.

Self-report ratings of sociability were corroborated by friend-reports. The main effect for positivity of other models was replicated, $F(1, 72) = 7.08$, $p < .001$, but there was also a significant effect for the self model factor, $F(1, 72) = 3.12$, $p < .05$. Inspection of means (see Table 2) indicated that friends tended to see the *dismissing* group as especially low on sociability: Follow-up Newman-Keuls comparisons indicated that the mean of the *dismissing* group was significantly lower than that of each of the other attachment groups.

Interpersonal Problems

Finally, we examined the location within the two-dimensional interpersonal space of subjects' interpersonal problems, as reported on the IIP. First, each subject's mean response across all problems was examined. A two-way ANCOVA revealed a significant main effect for the self factor only, $F(1, 72) = 11.82$, $p < .001$. The two groups with a negative self-image reported higher levels of interpersonal problems overall than the groups with a positive self-image. Parallel analyses with friends' reports revealed a trend for groups with negative self models to be judged to experience higher mean levels of interpersonal problems, $F(1, 71) = 2.93$, $p < .10$. Therefore, in the following analyses, each subject's score on each of the eight subscales (for both self- and friend-reports) was converted to an "ipsative score." That is, each subject's subscale scores were expressed as a

deviation from that subject's overall mean, thereby reflecting the extent to which that group of problems was more or less problematic for that particular person.[2] Each subscale score was then expressed as a z score using the mean and standard deviation of that subscale for the entire sample.

Each of the eight subscale scores was correlated with each prototype rating, and the mean of each subscale was also computed for each prototype group. Group means on the circumplex subscales, for self- and friend-reports, are shown graphically in Figure 4. Significant group differences were found on six of the eight subscales for both self-reports and friend-reports. Correlational analyses for self-reports and friend-reports are contained in Table 3. All of the self-report and friend-report problem subscales were significantly correlated with at least one of the attachment ratings.

As shown in Figure 4, the *secure* group's profile of means was elevated on the warm side of the interpersonal space according to both self- and friend-reports. However, no one subscale score was extreme: The largest standardized mean scores were on the order of 0.25. Correlations between *secure* ratings and the self-report circumplex subscales revealed significant, although modest, positive correlations with the overly expressive and autocratic scales, as well as negative correlations with the cold and introverted scales. The friends' reports showed positive correlations with the exploitable and nurturant scales and negative correlations with the cold and introverted scales.

The *dismissing* group showed a self-reported profile centered on the hostile side of the interpersonal space. Correlational analyses indicated that the cold subscale is most highly correlated with this attachment style. The friends generally confirmed this pattern, although friends' reports tended to show the *dismissing* style as more strongly associated with introversion than self-reports did. Also, the *dismissing* rating was negatively correlated with both self- and friend-ratings of the nurturant and expressive scales and with self-ratings of the subassertive and exploitable scales.

The self-report profile of the *preoccupied* group showed an elevation on the overly expressive scale, with the correlational analyses confirming this location of interpersonal problems. Friends' reports also described these subjects as highest on the

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[2] When a personality inventory has many subscales, it is sometimes necessary to *ipsatize* subjects' subscale scores. This procedure has been shown to be particularly important for the IIP because a principal-components analysis of the IIP items typically yields a large general first factor that reflects differences among people in their readiness to endorse complaints (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988). That factor may be considered a complaint factor, an acquiescence factor, or an intensity factor, and as shown by Wiggins, Steiger, and Gaelick (1981, p. 283), it reflects individual differences in the use of the response format, rather than differences in important aspects of interpersonal functioning. Therefore, the person's average response level must be treated separately from the circumplex components per se. The preferred way to control for individual differences in people's average response level is to ipsatize the subscale scores by expressing each score as a deviation from the subject's own mean across all subscales (Cronbach, 1949; Horowitz et al., 1988; Strack, 1987; Wiggins & Pincus, 1989). The ipsatizing procedure has been shown to improve the circumplex properties of interpersonal measures (Paddock & Nowicki, 1986; Rinn, 1965; Wiggins et al., 1981).

Table 2

Means of Self-Report Self-Concept Measures and Self- and Friend-Report Sociability Across Attachment Groups

Model	Secure	Dismissing	Preoccupied	Fearful
Self	Positive	Positive	Negative	Negative
Other	Positive	Negative	Positive	Negative
n	36	14	11	16
Measure				
Self-concept				
Distress	3.34	3.00	4.30	4.19
Self-esteem	35.28	36.50	32.21	30.69
Self-acceptance	3.75	3.87	3.39	3.19
Sociability				
Self-report	3.62	3.07	3.87	2.91
Friend-report	3.48	2.63	3.71	3.31

Note. Higher numbers reflect higher distress, self-esteem, self-acceptance, and sociability.

overly expressive scale, but the friends' means were also elevated in other octants reflecting dominance (i.e., the autocratic and competitive scales). Correspondingly, the *preoccupied* rating was positively associated with friend-ratings of the expressive, autocratic, and competitive subscales. That is, the friends' descriptions of the subjects' problems revealed less overall warmth and more overall dominance than the subjects' self-reports revealed. *Preoccupied* ratings were also negatively correlated with self-ratings on the cold scale and friend-ratings on the introverted and exploitable scales.

Finally, the *fearful* group reported relatively more problems reflecting a lack of assertiveness and social inhibition (introversion). The corresponding friends' reports confirmed this general pattern of results, as did the correlational analyses for both sets of data. Also, the *fearful* rating was negatively correlated with both self- and friend-ratings of the autocratic scale and with self-ratings of the competitive and expressive scales.

Conclusions

This study demonstrated that a semi-structured interview can be used to assess the degree to which subjects approximate each of the four hypothesized attachment styles. An additional 15 interview rating scales demonstrated the distinctiveness of each of the four styles. The internal structures of the interview ratings, the self-report ratings, and the friend-report ratings of the four attachment styles were consistent with the proposed model. Thus, a two-dimensional structure spatially reproduced the hypothesized relationships among the four styles, and the three sets of ratings independently produced similar results. The data also supported the hypothesis that the two groups theoretically described as having a positive self-model would differ on measures of self-concept from the two groups theoretically described as having a negative self-model. Also as hypothesized, the two groups theoretically described as having a positive model of others differed on a measure of sociability from the two groups described as having a negative model of others.

Taken together, the results supported the implication of Bowlby's theory that four different attachment styles can be identified.

The circumplex analyses confirmed the hypothesis that each style is associated with a distinct pattern of interpersonal problems. *Fearful* subjects were most likely to report interpersonal problems in the overly passive region of the interpersonal space (the lower quadrants), whereas *dismissing* subjects were more likely to report problems related to a lack of warmth in social interactions. The one group whose problems did not conform to the original hypothesis was the *preoccupied* group. Whereas their negative self-image and positive other-image were expected to reflect problems in being overly warm and passive (the lower right quadrant), their problems reflected a greater degree of warmth-dominance (the upper right quadrant). Examples of items falling in this region of the interpersonal space are "I want to be noticed too much" and "it is hard for me to stay out of other people's business." These findings suggest that although *preoccupied* people are highly dependent on others to maintain positive self-regard, they attempt to achieve this aim though a controlling (overly dominating) interpersonal style. Finally, the data also showed that self- and friend-reports of interpersonal problems were generally consistent across the four attachment styles.

Study 2

Study 1 examined ratings of the attachment styles that were based on the subjects' descriptions of their close friendships and romantic relationships, and these assessments were shown to predict important aspects of subjects' personalities and interpersonal functioning. Study 2 was designed (a) to replicate the circumplex analyses of Study 1, (b) to extend the proposed model of attachment to representations of relationships within the family of origin, and (c) to investigate the relationships between family and peer attachment representations. To examine these questions, the subjects of Study 2 were interviewed about
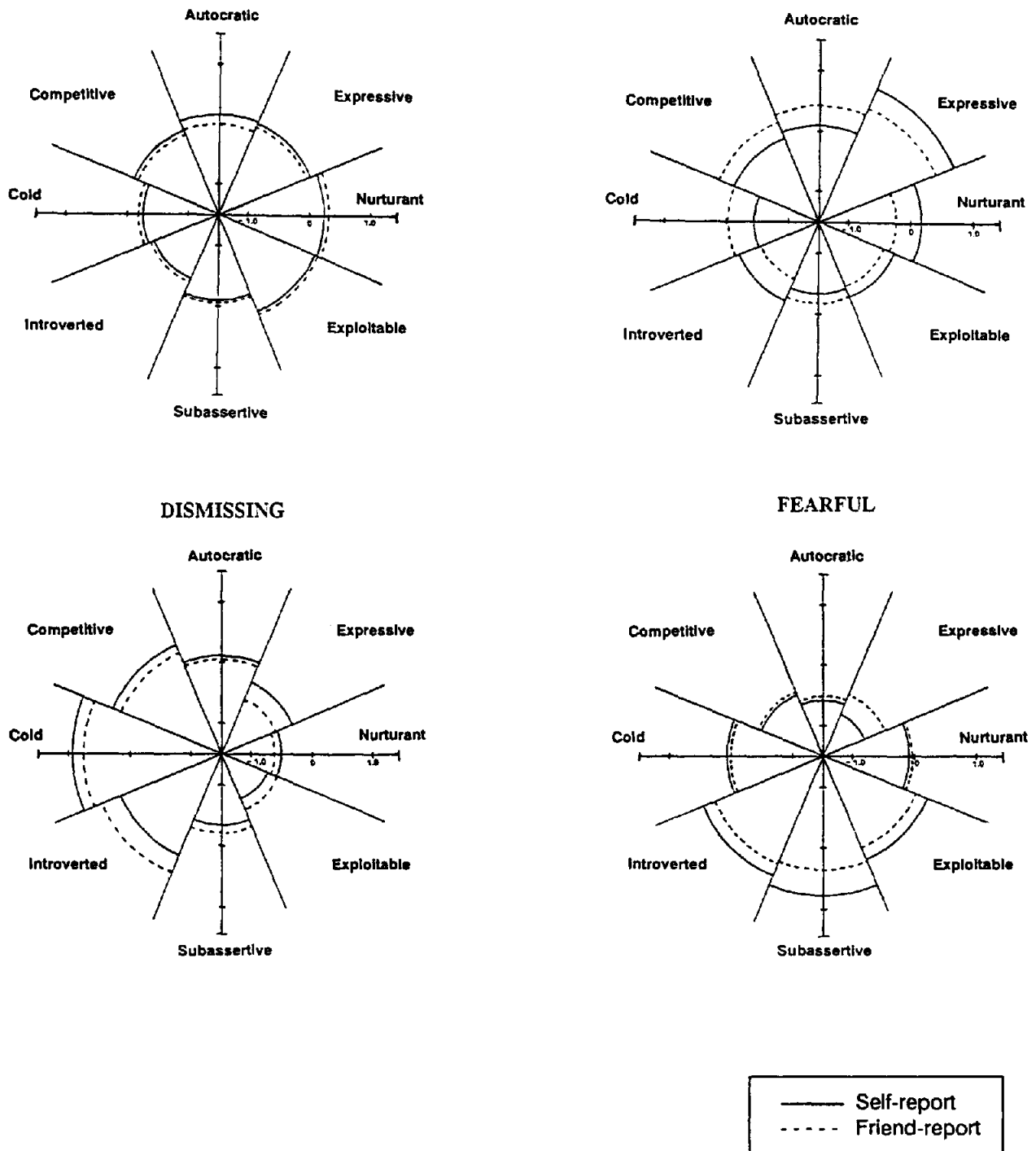
Figure 4. Self-report and friend-report profiles of interpersonal problems across attachment groups.

both family relationships and peer relationships, and each interview was used independently to rate the person according to their approximation to each of the four attachment prototypes.

It was expected that both sets of attachment ratings would reproduce spatially. the structure hypothesized by the model. Attachment theory suggests that people's representations of fa-

milial relationships predispose them toward particular styles of relating to friends; therefore, independent assessments across the two domains were expected to be positively correlated. Despite this correlation, however, family and peer attachment assessments may contribute in different ways to a person's current interpersonal difficulties, so this study also examined the rela-

Table 3
Correlations of Continuous Attachment Ratings and Self- and Friend-Report Interpersonal Problem Scales

Scale	Secure		Dismissing		Preoccupied		Fearful	
	Self	Friend	Self	Friend	Self	Friend	Self	Friend
Autocratic	.22*	.03	.03	−.02	.15	.33**	−.35***	−.27**
Competitive	.05	−.04	.16	.00	.14	.24*	−.22*	−.14
Cold	−.27**	−.29**	.58***	.46***	−.35***	−.16	.03	.04
Introverted	−.37***	−.23*	.10	.32**	−.15	−.32**	.45***	.25*
Subassertive	−.11	−.01	−.20*	−.09	−.12	−.18	.38***	.20**
Exploitable	.12	.23*	−.22*	−.18	−.11	−.21*	.16	.06
Nurturant	.19	.22*	−.24*	−.27**	.04	.04	−.06	−.08
Expressive	.20*	.12	−.20*	−.24*	.41***	.32**	−.43***	−.14

Note. $N = 77$. Correlations are partial (controlling for sex) and are based on ipsative scorings of circumplex scales.
* $p < .05$. ** $p < .01$. *** $p < .001$.

tive power of the two sets of ratings to predict people's interpersonal problems.

Method

Subjects

Subjects were 33 female and 36 male students in introductory psychology classes who agreed to participate in an "interview about social relations" for course credit. They ranged in age from 17 to 24 ($M = 19.5$), and their ethnic composition was 79% White, 9% Hispanic, 6% Asian, 3% Black, and 3% other.

Procedure

Subjects were tested in sessions that were 1 to 2 weeks apart; each session lasted approximately 1 hr. In the first session, subjects were randomly assigned to either a male interviewer (an advanced undergraduate psychology major) or a female interviewer (the first author) and were interviewed about their relationships with family and then with friends. In the second session, subjects completed a self-report packet of questionnaires.

Attachment interview. The first half of the interview focused on the subject's representations of family relationships. Subjects were asked about their family backgrounds, the quality of their relationships with each parent from their earliest memories to the present, their reactions to being separated from parents, their feelings of being rejected by parents, and parental reactions to their emotional upsets as a child. Subjects were also asked to make general evaluations of their childhood experiences in the family and to describe how these experiences had influenced them. The second half of the interview was an abbreviated version of the interview described in Study 1. Each interview was tape-recorded.

Attachment ratings were based on prototypes of each of the four attachment styles. The peer attachment prototypes were identical to those used in Study 1. Comparable descriptions were prepared for styles of relating to family members (available from the first author). Four independent raters (two for the family section and two for the peer section) rated each interview. The raters were advanced undergraduate psychology majors or graduate students, three were female and one was male, and all were blind to other measures in the study. Raters listened to the relevant section of the tape-recorded interview and rated each subject on 7-point scales describing the degree to which that subject

matched each of the four attachment prototypes. The final ratings of a subject consisted of the mean of the two ratings for each style. Each subject thus received two sets of final ratings, one for the family attachment interview (hereafter called the family ratings) and one for the peer attachment interview (hereafter called the peer ratings). The reliabilities of the family ratings ranged from .75 to .86, and those of the peer ratings ranged from .74 to .88. As in Study 1, the highest of the four peer ratings was used to assign subjects to one of the four adult attachment patterns. This procedure resulted in the following distribution of subjects across the attachment groups: 57% *secure* ($n = 39$), 18% *dismissing* ($n = 12$), 10% *preoccupied* ($n = 7$), and 15% *fearful* ($n = 10$).

Self-report measures. During the second session, each subject completed the IIP as well as a battery of other measures (e.g., parenting scales, self-description tasks) that are not relevant to this report. Coefficient alphas for the subscales of the IIP ranged from .72 to .85.

Results

Sex Differences in Attachment Ratings

There was a significant sex difference on the *preoccupied* rating across both segments of the interview. For the family interview, the mean *preoccupied* rating was 3.09 for women and 1.96 for men, $t(67) = 3.10$, $p < .01$; for the peer attachment interview, the mean *preoccupied* rating was 2.76 for women and 1.69 for men, $t(67) = 2.72$, $p < .01$. No sex differences occurred on any of the other ratings. Sex was entered as a covariate in all subsequent group and correlational analyses.

Intercorrelations of Attachment Ratings

For each set of correlations, the pattern was consistent with the proposed model. In both cases, attachment ratings that are diagonally opposed in the model showed significant negative correlations. For the family ratings, the correlation between the *secure* and *fearful* ratings was −.65 ($p < .001$), and that between the *preoccupied* and *dismissing* ratings was −.54 ($p < .001$). For the peer ratings, the correlation between the *secure* and *fearful* ratings was −.39 ($p < .01$), and that between the *preoccupied* and *dismissing* ratings was −.47 ($p < .001$). In both cases, ratings in adjacent positions showed uniformly low or 0 correlations, with *r*s ranging from −.32 to .06.

A multidimensional scaling was performed on each set of intercorrelations among the continuous attachment ratings. For both the family and peer ratings, a two-dimensional solution with a stress value of zero was obtained (Stress Formula 2; one-dimensional solutions had stress values of .55 and .50, respectively). In each case, the resulting configuration was consistent with the proposed model (see Figure 5).

Family and Peer Attachment Ratings

As expected, corresponding family ratings and peer ratings were significantly correlated with one another. For the *secure* ratings, $r(67) = .39$, $p < .001$; for the *fearful* ratings, $r(67) = .29$, $p < .01$; for the *preoccupied* ratings, $r(67) = .66$, $p < .001$; and for the *dismissing* ratings, $r(67) = .41$, $p < .001$. In contrast, all correlations between noncorresponding ratings were nonsignificant or negative (with a range from $-.40$ to .01).

Interpersonal Problems

A two-way ANCOVA (positive vs. negative self-image × positive vs. negative other-image, controlling for sex) again revealed a significant self-model effect only for mean endorsement of interpersonal problems, $F(1, 63) = 8.28$, $p < .01$. The *preoccupied* and *fearful* groups expressed higher mean levels of interpersonal distress than the other two groups. Therefore, each circumplex subscale score was ipsatized by expressing it as a deviation from the subject's overall mean level of interpersonal problems. Each subscale score was then standardized across the entire sample. Figure 6 presents the circumplex profiles for each attachment group. Significant group differences were obtained in a two-way ANCOVA on seven of the eight subscales. In addition, each insecure prototype rating was significantly correlated with five or six of the circumplex scales (see Table 4).

The *secure* attachment rating was not strongly related to the circumplex ratings: The *secure* group's standardized subscale means were consistently close to zero. Moreover, the *secure* rating only showed low correlations with two scales (positive with the expressive scale and negative with the introverted scale). The *dismissing* group showed its highest means on subscales reflecting excessive coldness, with the correlational analyses showing positive correlations with the cold and competitive subscales and negative correlations with the exploitable, nurturant, and expressive scales. The *preoccupied* group showed elevated means on the subscales in the warm–dominant quadrant, and the continuous *preoccupied* rating was most strongly associated with the overly expressive subscale. The *preoccupied* rating was also positively correlated with the nurturant and autocratic scales and negatively correlated with the cold, introverted, and subassertive scales. Finally, the *fearful* group showed elevated means on those subscales located in the passive octants; the introverted subscale showed the highest mean. Correlational analyses also indicated that the *fearful* style was positively associated with problems of introversion, subassertiveness, and the tendency to be exploited and negatively correlated with problems related to being overly nurturant, expressive, autocratic, and competitive.
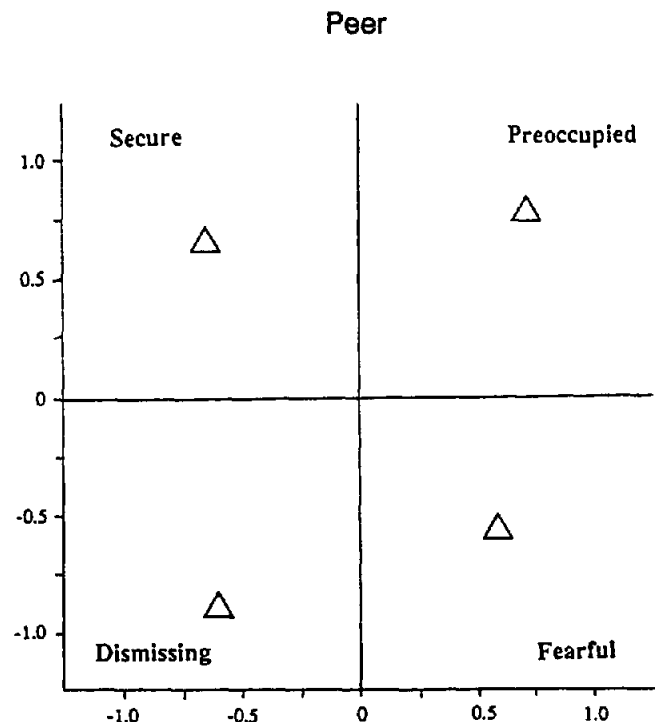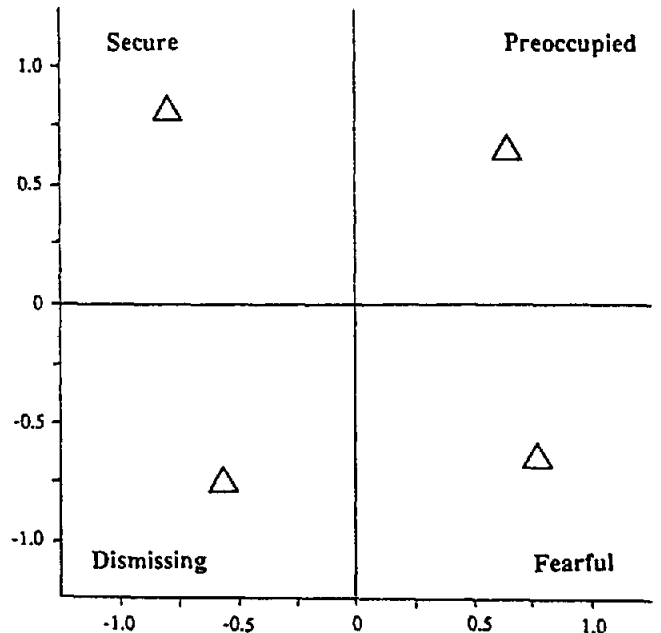

Figure 5. Multidimensional scalings of family and peer interview attachment ratings.

Comparison of Study 1 and Study 2 Circumplex Analyses

To facilitate comparisons between the circumplex results of Studies 1 and 2, each subject's eight subscale scores were used to
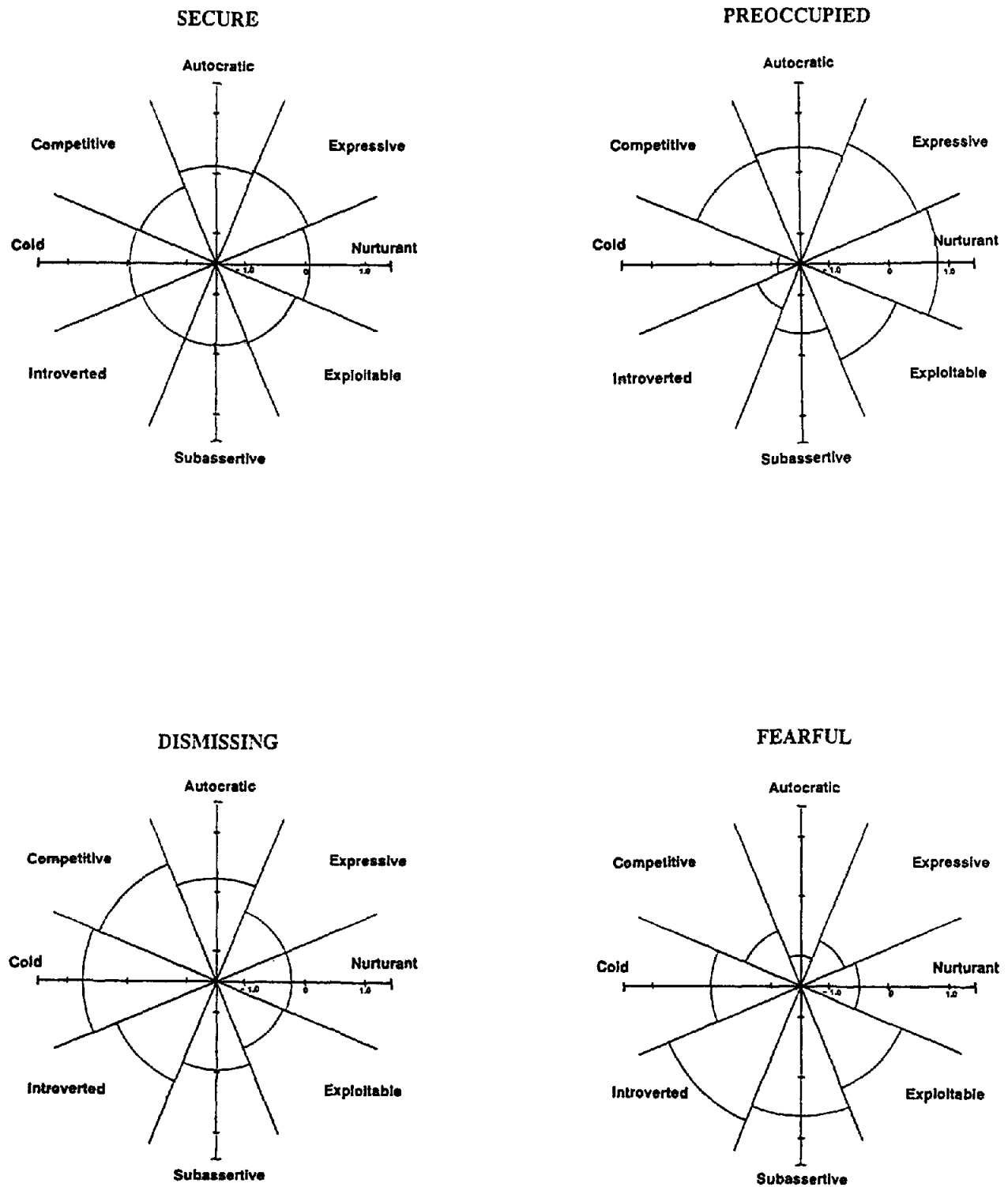
Figure 6. Self-report profiles of interpersonal problems across attachment groups.

Table 4

Correlations of Continuous Peer Attachment Ratings and Self-Report Interpersonal Problem Scales

Scale	Secure	Dismissing	Preoccupied	Fearful
Autocratic	.05	.11	.36**	−.51***
Competitive	−.18	.29**	.18	−.29**
Cold	−.07	.43***	−.32**	.02
Introverted	−.28*	.12	−.32**	.49***
Subassertive	−.04	−.04	−.33**	.34**
Exploitable	−.07	−.25*	.02	.21*
Nurturant	.14	−.24*	.26*	−.32**
Expressive	.23*	−.33**	.42***	−.33**

Note. $N = 69$. Correlations are partial (controlling for sex) and are based on ipsative scorings of circumplex scales.
* $p < .05$. ** $p < .01$. *** $p < .001$.

calculate a mean rating along the nurturance and dominance dimensions in accordance with the procedure described by Wiggins, Phillips, and Trapnell (1989). Significant group differences were obtained on the dimensional scores across both methods and studies according to one-way ANCOVAs (with sex as a covariate). Results for warmth and dominance scores, respectively, were Study 1 self-reports, $F(3, 71) = 6.72$, $p < .001$, and $F(3, 71) = 5.45$, $p < .01$; Study 1 friend-reports, $F(3, 71) = 5.23$, $p < .01$, and $F(3, 71) = 2.71$, $p = .05$; Study 2 self-reports, $F(3, 63) = 4.52$, $p < .01$, and $F(3, 63) = 6.02$, $p < .001$. The placement of the group centroids in the interpersonal space (that is, the mean warmth and dominance coordinates) from the self-reports and friend-reports of Study 1 and the self-reports of Study 2 are shown in Figure 7.

The three corresponding centroids for the *secure* group were in relatively close proximity to one another; in all three sets of data, the *secure* interpersonal style was associated with a less extreme interpersonal profile (that is, a mean placement closer to the origin) than the other three styles. The three centroids of the *dismissing* group were also close to one another, in all cases reflecting the salience of the overly cold subscale. The centroids of the *preoccupied* group showed the greatest diversity across the three sets (perhaps partly because of this group's small size), but in all cases the centroid fell in the warm–dominant quadrant, reflecting the salience of problems with overexpressiveness in all three data sets. Finally, the angular locations of the centroids of the *fearful* group were also similar across the three assessments. In all three cases, the centroids showed the influence of the introverted and subassertive scales.

Family and Peer Attachment Ratings as Predictors of Interpersonal Problems

The variables of warmth and dominance were used as summary measures of the subject's interpersonal problems, and a regression analysis was performed to predict these measures from the family ratings and from the peer ratings. In order to compare the predictive power of the family and peer ratings, a hierarchical regression analysis was performed twice. In both

analyses, sex was entered first in the equation. Then, in one case, the family ratings were entered as a block followed by the peer ratings; in the other case, the peer ratings were entered first.

First consider the prediction of the dominance aspect of interpersonal problems. When entered as the first variable in the equation (after sex), the family ratings accounted for 18% of the variance, $F(4, 62) = 3.31$, $p < .05$, and the peer ratings accounted for an additional 27%, $F(4, 58) = 7.30$, $p < .001$; but when the peer ratings were entered first, they accounted for 41% of the variance, $F(4, 62) = 10.71$, $p < .001$, and the family ratings did not add significantly, $F(4, 58) = 1.15$, *ns*. A different pattern was obtained in predicting the warmth aspect of interpersonal problems. In that case, when family ratings were entered first, they accounted for 31% of the variance, $F(4, 62) = 7.50$, $p < .001$, and the peer ratings added an additional 10%, $F(4, 58) = 2.59$, $p < .05$; when the order of entry was reversed, the peer ratings accounted for 28% of the variance, $F(4, 62) = 6.53$, $p < .001$, and the family ratings added an additional 13%, $F(4, 59) = 3.34$, $p < .05$. Thus, only peer ratings independently accounted for variation among people in the dominance aspect of interpersonal problems, whereas both sets of ratings contributed independently to variation among people in the affiliative aspect of their problems.

Conclusion

The intercorrelations among the family ratings were consistent with the proposed model. In addition, family attachment
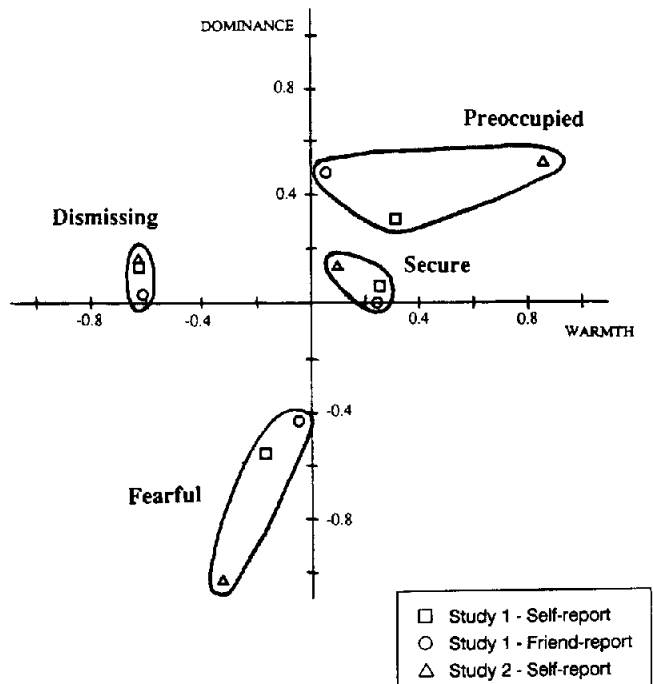

Figure 7. Attachment group centroids of interpersonal problems for Study 1 self-reports and friend-reports and Study 2 self-reports.

ratings were moderately correlated with corresponding peer at- tachment ratings, suggesting that the four adult attachment styles are meaningfully related to, although by no means reduci- ble to, representations of childhood experiences. Thus, the pro- posed model of adult attachment is also applicable to represen- tations of family relations. In addition, the circumplex analyses largely replicated the findings of Study 1.

Finally, the results demonstrated that both the family and peer attachment ratings contributed to the prediction of the warmth and dominance dimensions underlying interpersonal problems. The peer ratings were strongly related to both di- mensions of interpersonal problems. In contrast, the family ratings only independently contributed to the prediction of problems along the warmth dimension.

According to the circumplex model of interpersonal behav- ior, behaviors on the affiliation dimension tend to invite corre- sponding responses (e.g., warmth invites warmth) and, there- fore, tend to be self-perpetuating. Thus, in a longitudinal study of child rearing, Schaefer and Bayley (1963) found considerably higher consistency over time for the warmth dimension of ma- ternal behavior than for the dominance (control) dimension. The degree of warmth experienced and expressed within the family of origin may therefore be particularly salient in family attachment representations, which may in turn mediate the af- filiation dimensions of peer relations, at least up to late adoles- cence.

In contrast, determinants of dominance may be more com- plex and subject to greater variation over time and across rela- tionships. Schaefer and Bayley (1963) suggest that because chil- dren's needs for control and autonomy change radically over the course of development, parents may tend to shift to more or less age-appropriate behaviors on this dimension over time. Thus, to the extent that dominance imbalances exist in child–parent relationships, they may be less stable, hence a less salient char- acteristic of family attachment representations, than the affec- tive tone of the relationships. Furthermore, in relationships of dominance, two sides of the relationship may be learned: A person who is typically dominated learns both to submit and to dominate. For instance, Troy and Sroufe (1987) present evi- dence that avoidant preschoolers have internalized both the victim and victimizing aspects of their relationship with par- ents and may be capable of assuming either role depending on their social partner. Therefore, problems with dominance may be best understood in terms of the person's history with peers.

General Discussion

This article examined a model of individual differences in adult attachment in which two underlying dimensions, the per- son's internal model of the self (positive or negative) and the person's internal model of others (positive or negative), were used to define four attachment patterns. A prototypic descrip- tion of each style was generated, and each subject's degree of correspondence to each prototype was assessed through a semi- structured interview concerning the person's current relation- ships with peers and early relationships within the family. Multi- dimensional scalings confirmed the hypothesized underlying structure. Across family ratings and peer ratings, and across interview, self-reports, and friend-reports, configurations of at-

tachment ratings conformed to the theoretical model. The data also showed a convergence between family and peer ratings and between ratings from the interview, self-reports, and friend's reports. Self-concept measures differentiated the attachment styles with respect to the model of self only, and measures of sociability differentiated the styles with respect to the model of other only. Differences in interpersonal problems were also ex- amined, and circumplex analyses indicated that each attach- ment style was associated with a distinct profile of interper- sonal problems. The findings were, for the most part, consis- tent for self-reports and friend-reports and for self-reports across the two studies.

The results of this research confirm that the valence of both self-models and models of others are separate, important di- mensions of an adult's orientation to close relationships and that the two dimensions can vary independently. The present findings thus underscore one limitation of conceptualizing dif- ficulties with intimacy as simply either overdependency or avoidance of intimacy. In the present studies, the two groups with a negative model of the self (the *preoccupied* and *fearful*) showed similar responses to measures of personal insecurity, but they differed on measures indicating readiness to become intimate with and rely on other people. The two groups also showed diametrically opposite patterns of interpersonal prob- lems: Whereas the problems of the *preoccupied* subjects were centered in the warm–dominant quadrant, those of the *fearful* subjects were centered in the cold–passive quadrant.

Similarly, the two groups defined as avoidant of close rela- tionships (the *fearful* and *dismissing*) both showed difficulties in becoming close to and relying on others, but they differed significantly on measures reflecting an internalized sense of self-worth. Only the *fearful* style was consistently associated with social insecurity and lack of assertiveness. Thus, the com- mon assumption that people who maintain interpersonal dis- tance are driven by a fear of intimacy would seem to be an oversimplification. In both cases, however, the person's avoid- ance of intimacy preempts the possibility of establishing close relationships that might otherwise help the person update work- ing models of other people.

This project raises a number of important theoretical issues. For one, research has consistently demonstrated a positive rela- tion between self-acceptance and acceptance of others (e.g., Fey, 1955; Phillips, 1951). In attachment terms, models of the self and models of other people are postulated to have a common origin in early interpersonal interactions and are therefore gen- erally expected to be "complementary and mutually confirm- ing" (Bowlby, 1973, p. 204). In fact, the majority of subjects in these studies were judged to display attachment styles with con- gruent self- and other-models. However, two of the four attach- ment styles, the *preoccupied* and *dismissing* styles, were defined in terms of differing valences of self- and other-models. The present research has thus identified interpersonal patterns with discrepant valences between self- and other-acceptance (cf. Ep- stein & Feist, 1988). These two groups demonstrate two strate- gies that people may use at times to cope with unwelcome social information. In the *preoccupied* style, people blame themselves for perceived rejections by others and are thereby able to main- tain a positive view of others. In the *dismissing* style, people downplay the importance of others whom they have experi-

enced as rejecting and are thereby able to maintain high self-esteem. Thus, models of the self and of others can complement and mutually confirm one another without being congruent.

None of the subjects in this project uniquely fit any one attachment prototype. Instead, most subjects reported a mix of tendencies across time and within and across relationships: Many subjects were rated as showing elements of two, three, and occasionally all four of the attachment styles. Therefore, a great deal of individual variability was lost when the four continuous ratings were collapsed into a simple, four-category classification. Nonetheless, the two approaches produced almost identical patterns of results across dependent measures. That is, the conclusions were very similar whether a correlational analysis was used (involving four continuous ratings) or whether a between-groups comparison of four groups was used. Thus, the present studies did not provide any convincing evidence for the advantage of continuous attachment ratings over a group classification. However, the continuous ratings may have advantages that will emerge in future research. For one, continuous ratings allow an investigator to more precisely assess individual differences. For example, two persons classified the same way may differ in the intensity of their highest ratings or in the patterning of their secondary ratings, and those differences may be significant (e.g., in understanding clinical phenomena). Correlational analyses may also be particularly useful for samples that are not sufficiently large for group analyses or in which one or more attachment groups is underrepresented. Therefore, additional studies of diverse populations need to compare results obtained with each method before we can be clear about their relative advantages. Future work should consider also the relative merits of measuring attachment patterns in terms of two dimensions rather than four prototypes. In fact, both of these issues are currently being explored with the aid of structural equation modeling (Griffin & Bartholomew, 1991).

The individual differences explored in this project fall within the normal range of attachment patterns for a student population. Although a few subjects reported that their social difficulties were a source of serious depression or anxiety, most subjects in these studies were reasonably well functioning. For instance, all of the subjects in Study 1 had a friend who agreed to accompany them in the study. Also, although some subjects described difficult family backgrounds, the majority came from intact upper-middle-class families. The fact that significant group differences emerged despite such a restricted range reflects the robustness of the reported relationships. Nonetheless, it is important for future research to extend the procedure to other age groups and other populations. One important direction would be to examine clinical populations and determine whether the attachment styles are distinctively related to specific forms of psychopathology and whether certain attachment styles make a person more or less amenable to specific forms of treatment. People with a *dismissing* attachment style, for example, might be so much less invested in other people that they would be less amenable to forms of treatment that required an exploration of interpersonal interactions.

The model proposed in this article is the first to provide a theoretical rationale as to why four, rather than three, distinct attachment patterns are expected and the first to specify the expected *relations* among attachment styles. It is also the first

work to assess attachment representations of both familial and peer relationships and to use multiple assessment methods (interviews, self-reports, and friend-reports). However, several studies have reported results consistent with the proposed model. Collins and Read (1990) have reported that one possible solution to a cluster analysis of three continuous measures of adult attachment was four clusters in which two anxious styles were differentiated. Brennan, Shaver, and Tobey (in press) have recently compared the four-category model (as measured by the self-report Relationship Questionnaire) and the traditional three-category model (using the 1987 Hazan and Shaver measure). They found that *fearful* subjects tended to endorse both the avoidant and ambivalent options on the Hazan measure and that a two-dimensional structure underlay the attachment ratings as hypothesized by the four-category model. In the childhood attachment literature, a fourth style characterized by a mix of ambivalence and avoidance and associated with parental abuse and neglect has recently been reported by Main and Solomon (1990; the disorganized or D pattern) and by Crittenden (1988; the avoidant/ambivalent or A/C pattern). Moreover, the possibility of a relation between the fearful style and the D or A/C types is suggested by Latty-Mann's finding that adult children of problem drinkers tended to endorse both the ambivalent and avoidant options on the Hazan measure (Latty-Mann & Davis, 1988) and Brennan's finding that adult children of problem drinkers were overrepresented among those reporting a *fearful* style (Brennan et al., in press). However, future studies are clearly required to determine the precise relations between the proposed four-category model and previous conceptualizations of individual differences in attachment.

Another important next step is to identify the mechanisms by which an attachment style is maintained. In processing social information, people seem to produce behaviors that evoke specific reactions from other people, and this social feedback is interpreted in ways that confirm the person's internal models of the self and others (see Caspi & Elder, 1988; Swann, 1983, 1987). In fact, it is precisely "because persons select and create later social environments that early relationships are viewed as having special importance" (Sroufe & Fleeson, 1986, p. 68). For instance, selective affiliation in the form of the seeking or avoidance of social contacts and the selection of social partners who are likely to confirm internal models is expected to be central in maintaining adult patterns of attachment (see Collins & Read, 1990; Davis & Kirkpatrick, 1991). A related process, which Caspi and Elder (1988) call "interactional continuity" (p. 232), involves structuring social interactions so as to induce social partners to engage in self-confirming interaction patterns. Although the circumplex placements of the various attachment groups are suggestive of their characteristic interaction strategies, naturalistic observation is still needed to describe their actual social behavior and the reactions that that behavior tends to evoke in social partners. Finally, a whole array of information-processing biases are available to guide the processing of social feedback so as to confirm internal models (see Greenwald, 1982; Swann, 1983). Internal models are expected to direct attention, organize and filter new information, and determine the accessibility of past experiences. Thereby, ambiguous stimuli (which may form the bulk of all social stimuli) tend to be assimilated to existing models.

Given the multiple pathways through which representations of attachment relations may perpetuate self-confirming social experiences, perhaps the more difficult question is how such representations come to be modified. Epstein (1980) argues that compelling emotional experiences that are inconsistent with existing models are required to change them. Such experiences are likely to arise within emotionally significant relationships, such as those with a spouse or therapist. Research has documented the potential therapeutic value of supportive spousal relationships in moderating the effects of difficult early attachment relationships (e.g., Brown & Harris, 1978; Crockenberg, 1987; Quinton, Rutter, & Liddle, 1984). Major life transitions involving the adoption of new social roles (such as leaving for college, getting married, having children, or retiring) may also be opportune times for evaluating and potentially reorganizing attachment representations (cf. Caspi & Elder, 1988; Ricks, 1985). It has also been suggested that by coming to understand and forgive parents for their parenting weaknesses or by achieving an autonomous stance in relation to parents, people can overcome the influence of early models (Main et al., 1985; Ricks, 1985). Thus, a challenge for future research is to explore empirically how attachment patterns are externalized, maintained, and revised in interaction with the social environment.

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(Appendixes follow on next page)

Appendix A

Study 1 Interview Rating Scales

1. *Elaboration* (9-point scale, $\alpha = .88$) refers to how forthcoming subjects were in the interviews, including the degree to which specific memories were recounted to support generalizations, depth versus superficiality of self- and other-descriptions, and emotional content.

2. *Coherence* (9-point scale, $\alpha = .68$) refers to the degree to which subjects presented a coherent, integrated, and internally consistent portrayal of their experiences and feelings in close relationships.

3. *Self-disclosure in friendships* (7-point bipolar scale, $\alpha = .87$). A score of 1 indicates a complete avoidance of self-disclosure, 4 indicates open disclosure with discretion, and 7 indicates indiscriminate and excessive self-disclosure.

4. *Intimacy of friendships* (7-point scale, $\alpha = .79$) rates the degree of intimacy evident in platonic friendships.

5. *Balance of control in friendships* (5-point bipolar scale, $\alpha = .55$). A 1 indicates that the subjects were much more involved, more compromising, and less in control of the course of their relationships than social partners, a 3 indicates ideal mutuality, and a 5 indicates that the subjects were more in control than social partners.

6. *Highest level previous involvement in romantic relationships* (5-point scale, $\alpha = .96$). The scale ranged from *no previous involvements* (1) to *some dating* (2) to *one or more short-term, nonserious relationships* (3) to *at least one long-term, serious relationship* (4) to *a serious relationship involving a long-term commitment* (5).

7. *Balance of control in romantic relationships* (5-point bipolar scale, $\alpha = .79$). See (5) above.

8. *Self-confidence* (5-point scale, $\alpha = .84$) rates social self-confidence.

9. *Emotional expressiveness* (7-point bipolar scale, $\alpha = .82$). A 1 indicates an extremely rigid overcontrolled emotional style, a 4 indicates

the capacity for open emotional expression coupled with the ability to control emotions when appropriate, and a 7 indicates an undercontrolled histrionic style.

10. *Crying frequency* (5-point scale, $\alpha = .93$). The scale ranges from *almost never, less than once per year* (1) through *average frequency, sometimes* (3) to *constant, almost daily* (5).

11. *Warmth* (5-point scale, $\alpha = .72$). A 1 indicates extreme interpersonal coldness, a 3 indicates an average level of warmth, and a 5 indicates an exceptional degree of warmth.

12. *Reliance on others* (7-point bipolar scale, $\alpha = .81$). This scale ranges from *compulsive self-reliance* (1) to excessive emotional dependence on others (7). The midpoint of 4 indicates the ability to rely comfortably on others when appropriate, coupled with the capacity to be self-reliant.

13. *Use of others as a secure base when upset* (5-point scale, $\alpha = .83$). Scores range from *never goes to others when upset* (1) through *sometimes goes to others, but also uses other coping mechanisms* (3) to *always goes to others, principal response to any upset* (5).

14. *Nonsocial versus social crying* (5-point bipolar scale, $\alpha = .95$). A 1 indicates crying only when alone, a 3 indicates an equal likelihood of crying alone or with others, and a 5 indicates crying almost exclusively in the presence of others.

15. *Caregiving* (7-point bipolar scale, $\alpha = .62$). This scale assesses the tendency to look after others in personal relationships. A 1 indicates extreme antipathy to looking after others or having others rely on one, a 4 indicates comfort with caregiving in appropriate situations without any tendency to seek out others to look after, and a 7 indicates an excessive need to look after others to the point of martyrdom.

Appendix B

Self-Report Attachment Style Prototypes

Secure. It is relatively easy for me to become emotionally close to others. I am comfortable depending on others and having others depend on me. I don't worry about being alone or having others not accept me.

Dismissing. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Preoccupied. I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.

Fearful. I am somewhat uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I sometimes worry that I will be hurt if I allow myself to become too close to others.

Note. In subsequent revisions, the word *relatively* has been deleted from the *secure* prototype and the words *somewhat* and *sometimes* have been deleted from the *fearful* prototype.