
Attachment style in married couples: Relation to current marital functioning, stability over time, and method of assessment

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Abstract

We examined several aspects of attachment in marriage, including the association among attachment style, mental models of the spouse, satisfaction, affect regulation within the marriage, the stability of attachment style, and its operationalization. Fifty-three married couples completed initial assessments, and 44 participated in a 24-month follow-up. Attachment style was related to positive and negative affect immediately preceding a potentially stressful event and to the mental model of the spouse. Approximately 35% of the subjects changed their attachment style rating over a 2-year period; later attachment style was related to changes in mental models of the spouse. Categorical and dimensional measures of attachment style did not yield equivalent results. The implications of these findings for future research are discussed.

Interest in the association between attachment style and romantic relationships (e.g., Collins & Read, 1990; Feeney & Noller, 1990; Hazan & Shaver, 1987; Pistole, 1989; Simpson, 1990) has recently been extended to the study of marriage (e.g., Feeney, Noller, & Callan, 1994; Kobak & Hazan, 1991; Senchak & Leonard, 1992). Because marital relationships differ from dating relationships in a number of ways that may moderate the association between attachment and relationship functioning (e.g., level of formal commitment, the ease of termination of the relationship), a study was conducted to examine attachment among married couples. Specifically, the study was broad-ranging and attempted to (1) examine the extent to which adult attachment styles are related to beliefs about the spouse; (2) investigate the relationship between attachment style and affect regulation; (3) explore how the attachment processes of assimilation and accommodation may influence marital functioning over time; (4) docu-

ment the association between attachment style and marital satisfaction; and (5) examine conceptual issues concerning the assessment of attachment style.

Attachment Style and Mental Models of Attachment Figures

Attachment theory proposes that children with secure attachment styles, whose attempts to achieve physical proximity and/or felt security have been consistently met by caregivers, will develop internal models of attachment figures as dependable and psychologically available. In contrast, children with insecure attachment styles, whose bids for security have been either ignored or rebuffed (leading to avoidant attachments) or responded to inconsistently (leading to ambivalent attachments), will acquire models of others as rejecting or inconsistent. Once formed, these models then guide the individual's expectations concerning partner availability in future relationships (Bowlby,

1973). Consistent with these predictions, studies have found that in adulthood, secure people regard others as generally well-intentioned and good-hearted (Hazan & Shaver, 1987), whereas avoidant individuals view others as untrustworthy (Collins & Read, 1990), distant, and unsupportive (Kobak & Sceery, 1988).

To date, however, researchers tend to have examined beliefs about human nature or people in general (e.g., "People are generally well-intentioned and good hearted"). Whether such general beliefs are translated into expectations about a long-standing romantic partner is not clear. To investigate this issue, participants in the present study responded to questions concerning their spouse. Because beliefs about the availability of attachment figures are central to attachment theory, it is important to investigate a construct that reflects this aspect of an adult's internal model of his or her partner. A construct that closely resembles this dimension is interpersonal trust, which consists of three factors: predictability, dependability, and faith (Rempel, Holmes, & Zanna, 1985). The present study therefore examines the relations between attachment style and interpersonal trust.

Attachment Style and Affect Regulation

Another important tenet of attachment theory is that parental responsiveness and sensitivity to the child's affective signals provide a context within which the child organizes emotional experience and regulates felt security (Sroufe & Waters, 1977). Although all children seek to maintain a set goal of felt security, the specific strategies used to achieve this goal are thought to be contingent on the individual's history of regulating distress with attachment figures. Thus, if the attachment figure is consistently available and responsive to the child's distress signals, negative emotions serve a communicative function, and the child learns that distress can be regulated by strategies that involve active seeking of

comfort (Cassidy & Kobak, 1987; Kobak & Sceery, 1988).

In contrast, if the child's distress signals are met with inconsistent responses from the caregiver (leading to ambivalent attachment), the child learns that negative emotions are ineffective for eliciting responses and may therefore tend to exaggerate negative emotions (Izard & Kobak, 1992). Consistent with this viewpoint, behavioral observations have indicated that ambivalently attached children tend to respond to stressful situations with heightened expressions of distress, including fear and anger displayed directly toward the attachment figure (Ainsworth, Blehar, Waters, & Wall, 1978).

Avoidantly attached children, on the other hand, may adapt to their caregiver's behavioral style by learning to inhibit their negative emotions. For these children, perceived threat in the environment leads to attempts to approach the attachment figure, but the attachment figure is cold and rejecting. Thus, when attachment needs arise, the object of approach is forbidden and rejecting, leading to anxiety and further activation of the attachment system. The only solution to this self-perpetuating cycle is to deactivate the attachment system, thus eliminating the negative emotions by shifting attention away from the attachment figure (Bartholomew, 1990). Over time, this strategy may become increasingly anticipatory and habitual, until both the expression and the experience of negative affect are avoided altogether. Several attachment researchers have postulated that, as the capacity for emotional control develops, avoidant children may express their attachment needs less and less frequently until a general emotional detachment in close relationships is attained (Ainsworth et al., 1978; Sroufe, 1983).

Although these strategies for regulating negative emotions may be modified as an individual experiences new relationships, similar strategies are likely to exist in adult relationships. Thus, securely attached adults may regard stressful situations within the relationship as inherent and therefore respond to them with minimal levels of frus-

tration, anxiety, or fear. Ambivalently attached adults, on the other hand, may respond to stressful situations within the relationship with heightened levels of fear, anxiety, or anger. Avoidant adults may deny feeling any type of negative emotion during conflicts.

Despite evidence to suggest that ambivalently attached adults generally experience less positive and more negative affect in their relationships than do their securely attached counterparts (Simpson, 1990), few studies have examined how attachment type is related to affect regulation during conditions of distress. Bowlby (1973) argued that the attachment system should be most strongly activated under conditions of distress, and it is under these conditions that the affective and behavioral effects associated with attachment per se, relative to those connected to other facets of relationships such as love or closeness, should be most clearly evident. A recent study (Simpson, Rholes, & Nelligan, 1992) explored how the behavioral interaction between couples differed as a function of each member's attachment style when the female member of the couple was confronted with an anxiety-provoking situation. It was found that more secure women sought more support from their partners as anxiety level increased, whereas more avoidant women sought less support as anxiety level increased.

The present study seeks to extend these findings by examining whether ambivalent individuals experience more negative affect, particularly anxiety, than secure and avoidant individuals when faced with a potentially anxiety-producing situation. Prior to engaging in a problem-solving discussion with their partner about an area of disagreement in their marriage, the spouses therefore rated the intensity of their experience of several emotions.

Assimilation, Accommodation, and the Stability of Attachment Style

A third tenet of attachment theory examined in the present study concerns the

processes whereby attachment styles are stable or subject to change. According to Bowlby (1973), assimilation processes provide the mechanism through which new relationship experiences are incorporated into existing expectations about the self and others, and are central in accounting for continuity in personality development. In other words, new events are perceived, interpreted, and responded to in ways that are consistent with an individual's existing mental models, and this process in turn promotes the stability of attachment styles over time.

Not all individuals, however, maintain the same attachment style throughout the life span. Indeed, to promote adaptation, working models must not only assimilate new experiences to existing expectations, but also be subject to revision by significant emotional experiences, new information, or changes in relationships that disconfirm earlier models. Bowlby (1980) referred to this revision process as *accommodation*. Little is known about the factors that influence the process of accommodation. Reorganization of working models is thought to be particularly likely during times of dramatic change, such as the formation or loss of an attachment relationship or other developmental or life transitions (Kobak & Hazan, 1991; Main, Kaplan, & Cassidy, 1985). Individuals may vary, however, in the extent to which their working models are open to updating and revision (Bowlby, 1988), and some aspects of the models may be more amenable to change than others.

The present study begins to explore these issues by examining how attachment style and working models change over time and, in particular, whether changes in an individual's working model of his or her spouse are associated with later attachment style. Attachment style and elements of the working models of the other (trust) were assessed at two time points 24 months apart (Time 1 and Time 2). First, the degree of stability of attachment style ratings was considered. Second, the process of accommodation was explored by determining the

degree to which changes in working models were related to later attachment style.

Attachment Style and Relationship Satisfaction

The significance of attachment style in relationships is emphasized by the numerous aspects of relationship functioning with which it is associated. Perhaps the most important of these is relationship satisfaction. A growing number of studies suggest that, among individuals in dating relationships, attachment style is a significant predictor of relationship satisfaction (Collins & Read, 1990; Pistole, 1989; Simpson, 1990). Preliminary evidence also suggests that the security of a spouse's working model covaries with his or her relationship adjustment (Kobak & Hazan, 1991; Senchak & Leonard, 1992). The present study provides further evidence on the association between attachment and concurrent marital satisfaction. In view of the recent finding that, in the early years of marriage, attachment predicts satisfaction nine months later (Feeney, Noller, & Callan, 1994), it also examines whether changes in attachment style are associated with later marital satisfaction in more established marriages.

Conceptual and methodological issues concerning the assessment of attachment style

Recent work on adult attachment was stimulated by Hazan and Shaver's (1987) single-item, self-report measure of attachment style that asks respondents to choose one of three self-descriptions depicting secure, avoidant, and ambivalent attachment styles, respectively. Although still widely used, this measure has been criticized on a number of conceptual and methodological grounds (Collins & Read, 1990; Simpson, 1990). First, each description contains more than one aspect of a relationship (i.e., the secure description includes statements about both being comfortable with closeness and being able to depend on others).

Thus, individuals must accept an entire description that may not reflect their feelings on all dimensions. Second, the measure cannot assess the degree to which a style characterizes a person, and as a result, individual differences within each category cannot be investigated. In addition, this measure assumes that there are three mutually exclusive styles of attachment. Finally, this method of classification places severe limits on the type of statistical analyses that can be conducted.

In response to these limitations, researchers have developed dimensional measures of attachment based on Hazan and Shaver's (1987) categorical measure (see Collins & Read, 1990; Feeney, Noller, & Hanrahan, 1994; Simpson, 1990), and both methods of measurement are now widely used with the assumption that they yield equivalent results. Conceptually, however, these two methods reflect different approaches: The categorical method assigns each individual to one attachment style, whereas the dimensional method allows each individual to have some degree of each style. Even if the dimensional method is used to assign individuals to one attachment group, it is unclear if both methods of assignment are equivalent.

The present study explores these issues by using both categorical and dimensional measures of attachment style for each individual. The pattern of results obtained by using the categorical measure will be compared to those procured using the dimensional measure. In addition, the equivalence of the categorical and dimensional methods will be explored by using the dimensional measure to assign each person to one attachment style group and examining the distributions of individuals obtained using each method of assignment. As these latter analyses are primarily exploratory, no *a priori* hypotheses will be offered.

Overview and Hypotheses

The present study was broad in scope and examined five issues relating to the study of

attachment in married couples: namely, the extent to which adult attachment styles are related to beliefs about the spouse, the relationship between attachment style and affect regulation, how the attachment processes of assimilation and accommodation may influence marital functioning over time, the association between attachment style and marital satisfaction, and the assessment of attachment style. The specific hypotheses investigated for each of the first four issues are listed below.

- H1: *Based on attachment theory, it is predicted that secure individuals will report higher levels of predictability, dependability, and faith in their spouses than both ambivalent and avoidant individuals.*
- H2: *It is predicted that, in a potentially anxiety-provoking situation, ambivalent individuals will report feeling more negative affect and anxiety than both secure and avoidant individuals.*
- H3: *Changes in an individual's working model of his or her spouse will be associated with later attachment style. Specifically, spouses who become more trusting of their partner will be more secure, less ambivalent, and less avoidant at Time 2 than spouses who become less trusting of their partners.*
- H4: *It is predicted that (a) individuals with a secure attachment style will report higher levels of concurrent marital satisfaction than individuals with either an ambivalent or an avoidant attachment style, and (b) changes in attachment style will correlate with marital satisfaction 24 months later.*

Methods

Participants

Time 1. Fifty-three married couples were recruited through advertisements in local newspapers, radio, and television. The couples were married an average of 8.4 years

($SD = 10.5$, range = 0–36), had 1.5 children ($SD = 1.7$), and earned a median family income of US \$25,000 to US \$30,000. Wives averaged 31.8 ($SD = 10.6$, range = 19–57) years of age, 14.9 ($SD = 2.5$) years of education, and scored 97.93 ($SD = 28.2$) on the Marital Adjustment Test (MAT) (Locke & Wallace, 1959). Corresponding figures for husbands were 31.8 ($SD = 11.0$, range = 21–57) years of age, 15.2 ($SD = 2.9$) years of education, and 101.87 ($SD = 24.4$) on the MAT. Couples were paid US \$25 for their participation.

Time 2. The couples were contacted 24 months later by telephone and asked to complete several questionnaires through the mail. Of the original sample, 44 couples were located and agreed to participate, yielding a response rate of 83%. Couples who could not be located or refused to participate did not differ significantly on any variables from those who continued in the study. At this time, couples had been married an average of 10.7 ($SD = 9.3$, range = 2–38) years, had 1.9 ($SD = 1.6$) children, and earned a median family income of US \$30,000 to US \$35,000. Wives averaged 33.4 ($SD = 9.2$, range = 21–59) years of age, 15.3 ($SD = 3.1$) years of education, and scored 99.38 ($SD = 28.4$) on the MAT. Husbands were an average of 34.8 ($SD = 9.3$, range = 23–59) years of age, had 15.6 ($SD = 2.7$) years of education, and scored 98.48 ($SD = 27.6$) on the MAT. Couples were again paid US \$25 for their participation.

Materials

Attachment style. Hazan and Shaver's (1987) measure was used to classify individuals into secure, ambivalent, and avoidant attachment types. The measure consists of three brief paragraph descriptions translating the three patterns of attachment identified by Ainsworth and her colleagues (Ainsworth et al., 1978) into terms appropriate for adult romantic relationships. Respondents choose

the one paragraph that best describes their feelings in close relationships.

Hazan and Shaver (1987) addressed the issue of the validity of the measure. For example, the proportions of adult samples within each of the three categories are consistent with those found in infant-mother attachment studies. In addition, individuals in each of the three categories described their love relationships in ways that are consistent with attachment theory: Secure persons described their love relationships as especially happy, friendly, and trusting; avoidant persons were characterized by a fear of intimacy; and ambivalent persons experienced love as obsession, emotional highs and lows, and extreme sexual attraction and jealousy. Evidence regarding the adequate reliability of the measure has also been reported (Pistole, 1989).

In addition to the categorical measure of attachment type, a dimensional measure of attachment style developed by Hazan and Shaver (1988) was utilized. Hazan and Shaver created this measure by separating the original three paragraph descriptions into 13 individual sentences, each of which was responded to on a 7-point Likert-type scale, ranging from *strongly disagree* to *strongly agree*. Although some researchers have argued that two factors adequately account for the variance in dimensional measures of attachment, the three a priori scales developed by Hazan and Shaver were used to allow categories and dimensions to be compared directly.

To control for acquiescence response biases, three items were worded in a negative direction. Slight alterations were made for two items to increase readability. Three attachment style subscales were formed by summing the items taken from each of the paragraph descriptions. The secure subscale contained four items and possessed a coefficient alpha of .68 for husbands and .78 for wives. The avoidant subscale consisted of five items and had a coefficient alpha of .86 for husbands and .77 for wives. Finally, the internal consistency of the ambivalent subscale (comprised of four items) was lim-

ited, with coefficient alphas of .49 and .52 for husbands and wives, respectively. Results pertaining to the ambivalent subscale should therefore be viewed with caution.

Trust. Interpersonal trust was assessed using the 26-item Trust Scale (Rempel, Holmes, & Zanna, 1985). This measure is based upon the theory that trust in a romantic relationship is a multidimensional construct consisting of three specific components: predictability, dependability, and faith. Items designed to measure predictability emphasize the consistency and stability of a partner's specific behaviors, based on past experience. Dependability items concentrate on the dispositional qualities of the partner that warrant confidence in the face of risks and potential hurt (e.g., honesty, reliability). Finally, items constructed to measure faith are centered on feelings of confidence in the relationship and responsiveness and caring expected from the partner in the face of an uncertain future (Rempel et al., 1985).

Evidence of the validity of the scale has been reported in that the three subscales have been shown to be related to other relationship measures in a theoretically consistent manner (Rempel et al., 1985), and subscale reliabilities have been shown to be adequate (Rempel et al., 1985; Simpson, 1990). In the current study, coefficient alphas of the three subscales at Time 1 for husbands and wives, respectively, were .81 and .79 for predictability, .80 and .82 for dependability, and .88 and .89 for faith. At Time 2, the figures for husbands and wives, respectively, were .83 and .85 for predictability, .84 and .92 for dependability, and .90 and .94 for faith.

Prediscussion affect ratings. Participants reported the extent to which they experienced 12 emotions immediately prior to engaging in two problem-solving discussions with their spouse. These discussions concerned hypothetical conflicts. Spouses rated their emotions by making a slash through 12 lines anchored by poles indicating the presence

or absence of a particular positive or negative emotion (e.g., happy–not happy, upset–not upset, etc.). Responses were scored by measuring in millimeters the distance from the beginning of the line to the slash made by the respondent. Thus, responses could range from 0 (indicating the complete absence of an emotion) to 450 (indicating the strongest level of the emotion possible).

A positive affect index indicated how happy, pleased, relaxed, and glad the subject was feeling. Coefficient alphas for the positive affect index for husbands and wives, respectively, were .87 and .86 for the first conflict discussion and .90 and .94 for the second conflict discussion. The mean scores for husbands and wives were 258 (range = 24–446) and 232 (range = 3–442), respectively.

As there is some evidence that anxiety in spouses may have different correlates than other negative affects (e.g., Gottman & Krokoff, 1989, found that anxiety predicted improvement in marital satisfaction over time), two indices were formed using the negative emotions. An anxiety index (husbands' mean = 143, range = 0–362; wives' mean = 188, range = 2–439) showed how worried, tense, afraid, and on edge each person felt; an index of general negative affect (hereafter referred to as the negative affect index) indicated how angry, annoyed, frustrated, and upset the subject was feeling (husbands' mean = 143, range = 0–391; wives' mean = 188, range = 3–439). Among husbands, the anxiety and negative affect indices were correlated .61 for the first conflict discussion and .68 for the second. Corresponding figures for the wives were .75 and .88, for the first and second discussions, respectively. Coefficient alphas for the anxiety index for husbands and wives, respectively, were .88 and .86 for the first conflict discussion and .90 and .93 for the second conflict discussion. Coefficient alphas for the negative affect index for husbands and wives, respectively, were .93 and .90 for the first conflict discussion and .86 and .93 for the second conflict discussion.

Because differential predictions were

not made regarding spouses' affect ratings prior to each of the two hypothetical conflict discussions, and because item responses for the two discussions were highly correlated (all were correlated at the .05 level of significance or higher with the exception of the "worried/not worried" item for both husbands and wives), responses to these items were combined.

Marital satisfaction. Marital satisfaction was assessed using the Marital Adjustment Test (MAT) (Locke & Wallace, 1959). This widely used measure asks spouses to evaluate several dimensions of their marital functioning, such as the amount of agreement or disagreement with the partner on important issues in the marriage, the amount of leisure time spent with the partner, and the degree to which the spouse confides in his or her partner. The MAT has been shown to have adequate reliability (coefficient alpha of .80 and .83 for husbands and wives, respectively, in the current sample) and to discriminate between nondistressed spouses and spouses with documented marital difficulties (Locke & Wallace, 1959). This instrument has also been shown to correlate significantly with clinicians' judgments of marital discord (Crowther, 1985).

Procedure

The study was conducted as part of a larger investigation and took place in three phases. Couples who showed interest in the study were sent a packet of screening questionnaires by mail. The packet included a demographics questionnaire and a measure of marital satisfaction. Spouses' responses to the marital satisfaction measure were used to obtain a group of couples representative of the full range of marital satisfaction by inviting approximately equal numbers of nondistressed ($n = 27$) and distressed ($n = 26$) couples to participate in a separate laboratory session. (Distressed couples were defined as those having a combined MAT score less than 200, and nondistressed cou-

ples were defined as having a combined MAT score of more than 200.)

The laboratory session began with both spouses completing a questionnaire packet that included the MAT. Upon completion of these questionnaires, the couples engaged in a problem-solving discussion concerning a hypothetical marital conflict randomly assigned to the couple by the experimenter. Prior to actually engaging in the discussion, each spouse completed several prediscussion questionnaires.

Following this discussion, each spouse completed an additional packet of questionnaires, including measures of attachment style and trust. The couples then engaged in a second hypothetical conflict problem-solving discussion. As before, prediscussion questionnaires were completed.

Approximately 24 months following the laboratory session, the couples were contacted by telephone and mailed packets containing several questionnaires, including Hazan and Shaver's (1987) attachment style questionnaire, the Trust Scale, and the MAT. Husbands and wives were instructed to complete the materials independently. Several days after the materials were mailed, a research assistant phoned to ask whether the package had been received, to reemphasize the need for independent completion of the materials, and to answer any questions either spouse had about completing the questionnaires.

Results

Attachment style and mental models of attachment figures

To examine the relationship between mental models of others and adult attachment type,¹ one-way ANOVAs were conducted

for both husbands and wives, with adult attachment type serving as the grouping variable.² Twenty-four husbands were classified as secure, 14 fell into the ambivalent category, and 15 into the avoidant group. Corresponding figures for wives were 25, 17, and 11, respectively. Among husbands, significant differences among the three attachment types were found only for the predictability subscale ($F(2,50) = 4.37, p < .05$); post-hoc analyses³ indicated that secure husbands ($M = 5.23, SD = 1.28$) found their partners to be more predictable than did ambivalent husbands ($M = 4.2, SD = 1.20$). Contrary to predictions, no significant differences were found among secure, avoidant, and ambivalent wives for any of the three trust subscales.

Attachment style and affect regulation

Differences among secure, avoidant, and ambivalent individuals in affective experiences immediately prior to the introduction of a potentially stressful event were examined using analysis of variance. Table 1 shows the F values obtained for ANOVAs conducted using each affect index and the mean scores of each attachment group. Among the husbands, differences were found in the amount of positive affect experienced immediately before the problem-solving discussions, with secure husbands reporting more positive affect than avoidant husbands. Additionally, group differences were found in the amount of anxiety experienced by the husbands, but fol-

1. To consider the effect of partner attachment style, the correlation coefficients between husband and wife attachment dimensions were computed. The secure dimension was correlated .18, the avoidant dimension was correlated .01, and the ambivalent dimension was correlated -.07. None of these correlations were statistically significant.

2. To address the possibility that relationship differences among secure and insecure individuals merely reflect well-documented differences between distressed and nondistressed couples, all of the ANOVAs performed in this study were repeated using marital satisfaction (MAT) scores as a covariate. The results obtained using the covariate were, in general, analogous to those revealed without the covariate and, hence, will not be reported unless they alter the statistical significance of the findings.

3. All post hoc comparisons reported in this study used the Scheffe method of comparison.

Table 1. Mean differences in prediscussion affect ratings among attachment types

Affect Subscale	Secure	Avoidant	Ambivalent	F
Husbands				
Positive affect	300.00 _a (85.68)	219.90 _b (53.78)	298.64 _a (81.11)	5.80**
Negative affect	79.80 (63.68)	128.67 (76.46)	85.75 (83.23)	2.27
Anxiety	115.54 (90.80)	179.07 (64.97)	117.86 (71.26)	3.37*
Wives				
Positive affect	303.36 _a (90.53)	215.12 _b (102.60)	184.68 _b (41.80)	9.07***
Negative affect	80.60 _a (65.09)	158.79 _b (116.22)	183.18 _b (109.48)	6.04**
Anxiety	131.36 _a (78.39)	210.79 _b (99.94)	231.18 _b (87.65)	6.75**

Note: Within each row, means with different subscripts differed at $p < .05$ according to a Scheffe test.

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

low-up tests revealed that no two groups significantly differed from each other.

Among wives, significant differences were also found for all of the prediscussion affect ratings. Securely attached wives experienced more positive affect than either avoidant or ambivalent wives. In addition, differences were found in the level of negative affect and anxiety experienced among the attachment groups; secure wives experienced less negative affect and less anxiety than did both the avoidant and ambivalent wives.⁴

Stability of attachment types

Previous studies of adult attachment have revealed that most adults classify themselves as securely attached, with fewer classifying themselves as avoidant or ambivalent (Kobak & Hazan, 1991; Simpson, 1990), and the results of the current study are consistent with this finding (see Table 2). At Time 1, 45% of the husbands classified themselves in the secure category, 28% in the avoidant category, and 27% in the am-

bivalent category. At Time 2, the corresponding figures for husbands were 48% secure, 27% avoidant, and 25% ambivalent. A similar pattern was found for the wives, with 47% classifying themselves as secure, 32% as avoidant, and 21% as ambivalent at Time 1; corresponding figures at Time 2 are 50% secure, 23% avoidant, and 27% ambivalent.

Thus, a cursory examination of the similarity of the marginal proportions of the three attachment types at Time 1 and Time 2 might lead to the conclusion that attachment style ratings were quite stable. A closer inspection of the data reveals, however, that although the marginal proportions remained the same, the individuals who classified themselves within each category did not. Of the husbands who classified themselves as secure at Time 1, 26% (6 of 23) changed their self-classification at Time 2. Of the husbands who were avoidant, 22% (2 of 9) changed their ratings, and of the husbands who were ambivalent, 50% (6 of 12) changed their ratings. For wives, 21% (4 of 19) of those who rated themselves as secure changed their ratings at Time 2, 56% (9 of 16) of those who were avoidant changed ratings, and 25% (2 of 8) of the ambivalent wives rated themselves differently at Time 2. Kappa coefficients

4. These differences in negative affect and anxiety did not remain when marital satisfaction was added as a covariate.

Table 2. *Frequencies of subjects endorsing attachment styles at Time 1 and Time 2*

Style at Time 1	Style at Time 2			Marginal (%)
	Secure	Avoidant	Ambivalent	
Husbands				
Secure	17	2	4	45.3
Avoidant	1	7	1	28.3
Ambivalent	3	3	6	26.4
Marginal(%)	47.7	27.3	25	
Wives				
Secure	15	1	3	47.2
Avoidant	6	7	3	32
Ambivalent	1	1	6	20.8
Marginal(%)	50	22.7	27.3	

were calculated to assess the degree of agreement between classifications at Time 1 and those at Time 2 over and above that which would occur by chance alone, with perfect stability of attachment types indicated if $k = 1.00$. For husbands, $k = .49$, and for wives, $k = .45$. Because a direct test of the hypothesis $k = 1.00$ is inappropriate, and the alternative hypothesis, $k = 0$, is not of interest here, the hypothesis that $k = 1.00$ was tested by computing a confidence interval and determining if this value falls within its limits (cf. Hayes, 1988). The upper and lower limits for the 95% confidence interval for husbands were .27 and .71, respectively, while those for wives were .22 and .67. Thus, for both husbands and wives, it can be stated with a 95% degree of certainty that the value of kappa does not reach 1.00.

The stability of the dimensional ratings of attachment was assessed by computing correlation coefficients between the Time 1 and Time 2 subscales. These figures for the husbands were .65 for the secure scale, .72 for the avoidant scale, and .53 for the ambivalent scale. Figures for the wives for the secure, avoidant, and ambivalent scales, respectively, were .68, .70, and .43.

Assimilation and accommodation in working models of attachment

Based on Bowlby's theoretical assertion that changes in mental models of attachment will modify an individual's attachment style, and consistent with previous research examining the influence of relationship events on later attachment style (e.g., Hammond & Fletcher, 1991), it was predicted that spouses who become more trusting of their partner will be more secure, less ambivalent, and less avoidant at Time 2 than spouses who become less trusting of their partners. An obvious way to examine this prediction would be to correlate change in trust scores with change in attachment scores; however, the unreliability of raw change scores may lead to spurious findings. Consequently, the prediction that changes in mental models of attachment figures are associated with later differences in attachment style was examined using a statistical procedure for investigating change described in Bereiter (1963). According to Bereiter, when investigating the relationship between change in one variable, ΔX ($X_2 - X_1$), with an independent variable, W , one should use the correlation of W with ΔX , partialing out the influence of initial

Table 3. *Correlations between change in trust dimensions and Time 2 attachment styles*

Measure	Secure	Avoidant	Ambivalent
Husbands			
Predictability	.31*	-.10	.01
Dependability	.08	-.09	-.19
Faith	.14	-.46**	-.28*
Wives			
Predictability	.32*	-.24	-.51**
Dependability	.20	-.09	-.22
Faith	.31*	-.25	-.46**

Note: All p values are for two-tailed tests.

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

levels of X (i.e., X_1). This correction is necessary because of the spurious negative correlation that occurs between initial scores of a measure and gains on the same measure over time. Thus, in the present analysis, change scores for trust were correlated with attachment scores at Time 2, partialing out Time 1 trust scores.

The correlations (corrected for attenuation; see Bereiter, 1963, p. 8) between change in the trust dimensions (predictability, dependability, and faith) and the Time 2 attachment styles are displayed in Table 3. Among husbands, significant correlations occurred between predictability and Time 2 secure attachment, as well as between faith and Time 2 avoidant and ambivalent attachment. Among wives, significant correlations occurred between predictability and Time 2 secure and ambivalent attachment, and between faith and Time 2 secure and ambivalent attachment.

For completeness, the relationship between change in attachment style and Time 2 trust dimensions was also examined and is displayed in Table 4. Among husbands, significant correlations were found between change in secure attachment and Time 2 dependability, as well as between change in ambivalent attachment and Time 2 faith. Among wives, significant correlations occurred between change in both secure and

ambivalent attachment and Time 2 predictability, dependability, and faith.

Attachment style and marital satisfaction

The association between attachment type and concurrent relationship satisfaction was examined using a one-way ANOVA, with MAT scores serving as the dependent variable. Contrary to prediction, no significant group differences occurred in marital satisfaction among the husbands, $F(2,51) = 1.89$, $p > .05$. However, the test for wives was marginally significant, $F(2,50) = 2.99$, $p < .06$, with secure wives ($M = 107.9$, $SD = 21.9$) reporting higher marital satisfaction than either avoidant ($M = 90.4$, $SD = 34.8$) or ambivalent ($M = 88.3$, $SD = 22.5$) wives.

To examine whether change in attachment style was related to later marital satisfaction, the analytic strategy recommended by Bereiter (1963) was again adopted. Among husbands, two of the three correlations between change in attachment styles and marital satisfaction at Time 2 approached significance (secure = .24, $p < .07$; ambivalent = -.24, $p < .07$; avoidant = -.10, NS). Among wives, all three correlations approached significance (secure = .27, $p < .06$; ambivalent = -.23, $p < .08$; avoidant = -.26, $p < .06$).

Table 4. *Correlations between change in attachment dimensions and Time 2 trust dimensions*

Measure	Predictability	Dependability	Faith
Husbands			
Secure	.12	.35*	.08
Avoidant	-.05	-.11	-.07
Ambivalent	-.16	-.08	-.41*
Wives			
Secure	.40**	.35*	.34*
Avoidant	-.12	-.19	-.18
Ambivalent	-.34*	-.33*	-.41**

Note: All *p* values are for two-tailed tests.

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

Equivalence of categorical and dimensional assessments of attachment style

The equivalence of the categorical and dimensional methods of assessing attachment style was examined in two ways. First, the pattern of results obtained using the dimensional measure of attachment style was compared to that obtained using the categorical measure. Second, the dimensional measure was used to assign each person to one attachment style group, and the distribution of persons obtained using each method of assignment was examined.

Using the two measures of attachment style yielded different results in regard to the three trust subscales. When the categorical measure of attachment was used, the only significant difference among the three attachment types occurred among the husbands for the predictability subscale. Use of the dimensional measure, however, also showed associations involving the faith subscale (see Table 5). Moreover, significant correlations were found among wives for both the predictability and faith subscales.

In contrast, the two measures of attachment yielded similar findings concerning the relation between attachment style and prediscussion affect ratings. Both indicated a moderate relationship between positive affect ratings and attachment style among husbands, and strong relationships between

each of the affect ratings and attachment style among the wives.

Finally, comparison of the relationship between attachment style and marital satisfaction using both the categorical and dimensional methods demonstrated again that, among the wives, the dimensional measure of attachment revealed significant associations, which the categorical measure did not. Specifically, marital satisfaction was positively related to secure attachment scores ($r = .51, p < .01$.) and negatively related to avoidant attachment scores ($r = -.38, p < .05$).

The equivalence of the two methods of assessment was further examined by creating a contingency table comparing the assignment of individuals to the three attachment types using the categorical measure versus the dimensional measure (see Table 6). Individuals were assigned to an attachment style with the dimensional measure by averaging their responses to the items on the three dimensions and utilizing the largest of the three average scores as an indicator of attachment type. Among husbands, 42 individuals received the same attachment label using the categorical and dimensional methods, and 11 received a different label. Among the wives, 38 received the same attachment label, and 10 received different labels. For both husbands and wives, most of the mismatches occurred for the ambivalent group.

Table 5. Correlations between attachment style dimensions and trust dimensions and prediscussion affect

	Secure	Avoidant	Ambivalent
<i>Trust</i>			
		Husbands	
Predictability	.17	-.37**	-.22
Dependability	.05	-.13	-.27*
Faith	.04	-.13	-.32*
		Wives	
Predictability	.44**	-.44**	-.07
Dependability	.47**	-.29*	-.17
Faith	.44**	-.34*	-.08
<i>Affect</i>			
		Husbands	
Positive affect	.32*	-.49**	-.05
Negative affect	-.23	.36**	-.01
Anxiety	-.29*	.41**	.08
		Wives	
Positive affect	.38**	-.43**	-.37**
Negative affect	-.29*	.38**	.29**
Anxiety	-.31*	.41**	.33**

Note: All *p* values are for two-tailed tests.

Table 6. Contingency table of attachment types measured by categorical versus dimensional methods

Categorical Groups	Dimensional Groups		
	Secure	Avoidant	Ambivalent
		Husbands	
Secure	24	0	1
Avoidant	0	13	2
Ambivalent	7	1	5
		Wives	
Secure	20	2	0
Avoidant	2	13	2
Ambivalent	1	3	5

Kappa coefficients were calculated to assess the degree of agreement between the categorical and dimensional methods to determine the extent of agreement that would occur beyond that due to chance. For both husbands and wives, $k = .66$. Perfect agreement of the two methods would be indi-

cated if $k = 1.00$. The hypothesis that $k = 1.00$ was tested by computing a confidence interval and determining if this value falls within its limits (cf. Hayes, 1988). The upper and lower limits for the 95% confidence interval for husbands were .49 and .83, respectively, while those for wives were .43

and .89. Thus, for both husbands and wives, it can be stated with 95% certainty that the value of kappa did not reach 1.00.

Discussion

The present study used a sample of married couples to explore several theoretical and methodological issues confronting researchers interested in adult attachment. It was predicted that securely attached spouses would hold more positive views of their partners, experience more positive and less negative affect when in a stressful marital situation, and report higher levels of marital satisfaction than either avoidant or ambivalently attached adults. In addition, conceptual questions regarding the stability of attachment type, the process of accommodation of working models, and the equivalence of categorical and dimensional ratings of attachment style were explored.

Attachment style and mental models of attachment figures

Based on attachment theory, it was proposed that individuals with different attachment types would vary in the ways that they viewed attachment figures, with secure spouses viewing their marital partners as more trustworthy than both avoidant and ambivalent spouses. Using a categorical measure of attachment, the hypothesized relation between an insecure attachment style and lower levels of trust was partially supported for husbands, but not for wives. When a dimensional measure of attachment was used, the reverse held true: The relation between trust and attachment style was robust among the wives, but weak for the husbands. These findings are surprising in light of past research indicating that avoidant individuals are especially distrustful of others (e.g., Collins & Read, 1990; Kobak & Sceery, 1988).

Two explanations may account for the findings among avoidant individuals. Bartholomew (1990) proposed that a single avoidant category, such as that developed

by Hazan and Shaver (1987), may obscure different patterns of avoidance in adult relationships; instead, they offered an expanded model of adult attachment comprised of four attachment styles, based on the intersection of positive and negative models of the self and others. The secure style involves positive models of both the self and other and corresponds to the secure group identified in prior research. The preoccupied group consists of persons with positive models of other, but negative models of the self. The result is an overly dependent style of attachment characterized by an insatiable desire to gain others' affection and a deep-seated feeling of unworthiness. This style corresponds to the ambivalent style identified in previous research.

Bartholomew (1990) then proposed *two* forms of avoidant attachment. The fearful group represents individuals with negative models of others and the self. Individuals with a fearful style of attachment desire social contact and intimacy, but experience a pervasive fear of rejection. To preclude the possibility of rejection, such individuals actively avoid situations and relationships in which they perceive themselves as vulnerable to rejection.

A different manner of avoidance is exhibited by individuals with a dismissing attachment style. These individuals develop models of the self as fully adequate and capable, but view social contact and intimacy as unnecessary. They place much value on independence and assert that relationships are relatively unimportant. Thus, both the fearful and dismissing groups show avoidance of close relationships, but differ in the importance placed on others' acceptance. The three-category measure of attachment used in the present study fails to distinguish between the fearful and dismissing styles of attachment and therefore may have obscured differences in the amount of trust reported.

An alternative explanation for the present findings is that the measure chosen as an indicator of mental models of others was inadequate. Although interpersonal trust

seems central to the concept of mental models of others, it is possible that the measure of trust used in this study failed to capture the relevant aspects of trust that differentiate among the attachment types. In addition, the current study focused exclusively on trust experienced within the marital relationship. It may be that avoidant husbands and wives have developed trust in their spouses over time, but are still distrustful of others in general. Future research might examine more specifically the developmental course of attachment-related beliefs within the marital relationship.

Attachment style and affect regulation

Differences among the attachment types in prediscussion affect ratings were robust, especially among the wives, and were independent of the method used to assess attachment. In general, secure husbands reported more positive affect than avoidant husbands, and secure wives reported more positive affect, less negative affect, and less anxiety than both avoidant and ambivalent wives. These results are important because they indicate that, under stressful circumstances, individuals with different attachment types experience different degrees of anxiety, as well as different levels of general positive and negative affect. Coupled with the knowledge that individuals of differing attachment types respond to feelings of anxiety with distinct patterns of approach and withdrawal behavior (Simpson et al., 1992), such information could have important implications for researchers who study conflict behavior in intimate relationships, as well as those who apply this empirical work to areas such as marital therapy.

The stability of attachment

An examination of the categorical attachment style ratings at Time 1 and Time 2 revealed that 22.7% of the husbands and 34.9% of the wives changed their attachment style classifications over the 2-year

period. Stability coefficients for the dimensional ratings of attachment ranged from .43 (wives' ambivalent ratings) to .72 (husbands' secure ratings). Although the stability coefficients for the dimensional assessment of ambivalence are limited by the reliability of the measure, the magnitude of these figures is consistent with those found by other researchers (cf. Baldwin & Fehr, 1993). For example, Scharfe and Bartholomew (1994) found average stability coefficients of .53 and .49 for females' and males' self-reported attachment ratings over an 8-month period. The magnitude of such correlations raises an important issue concerning the meaning of this instability.

Baldwin and Fehr (1993) offered an alternative formulation of attachment styles in which the styles are viewed not as primary stable personality traits, but as relational schemas that vary over time. Relational schemas are cognitive structures representing regularities in patterns of interpersonal interactions and thus are similar to the notion of working models provided by Bowlby. Unlike working models, however, individuals are thought to possess several different relational schema, which may have developed in different contexts, with various significant others, or at different times.

From this perspective, instability in attachment style ratings is not the result of unreliability of measurement, but results from actual variability in the construct being measured. An individual's attachment rating at any time would therefore represent the memories, self-concepts, and interpersonal expectations that were activated at this time (Baldwin & Fehr, 1993). If this conceptualization of attachment style is correct, future research on adult attachment would do well to utilize the relevant research that exists in the social cognition domain and focus on the factors that determine the functioning of these relational schemas. Baldwin, Fehr, Keedian, Seidel, and Thompson (1993) began this task by demonstrating that reaction time measures of interaction expectations vary as a func-

tion of the relational schemata underlying attachment styles.

Accommodation in working models of attachment

Among both husbands and wives, changes in the faith and predictability dimensions of trust in the partner were negatively associated with insecurity in later attachment style—the ambivalent dimension in particular. Although these findings could indicate that changes in levels of perceived predictability and faith in the partner lead to modifications or accommodations in attachment style, the correlational nature of the analyses prevents definitive causal statements. In addition, reverse analyses (i.e., changes in attachment style correlated with later trust) revealed several significant findings, especially for the wives, indicating that self-reporting changes in attachment style may lead to increased feelings of trust in the partner. It is important to remember, however, that Bowlby (1980) considered assimilation and accommodation to be *reciprocal* processes; questions concerning whether changes in mental models precede changes in attachment type, or vice versa, may therefore not be as constructive as those exploring the conditions under which each mechanism is most likely to operate.

Attachment style and marital satisfaction

Given the hypothesized influences of attachment style on such important relationship variables as trust and affect regulation, it was predicted that secure spouses would report higher levels of marital satisfaction than either avoidant or ambivalent spouses. Contrary to this prediction, however, no differences in marital satisfaction were found among the attachment types for either the husbands or the wives. However, when a dimensional measure of attachment was used, wives' marital satisfaction correlated positively with secure attachment scores and negatively with avoidant attachment scores. Additional studies utilizing

larger sample sizes are needed to determine the replicability of these differential findings across assessment methods. Nevertheless, these findings underline the importance of the assessment procedure used in exploring the correlates of attachment style.

Equivalence of categorical and dimensional measures of attachment style

The present study examined the tacit assumption that categorical and dimensional measures of attachment style yield equivalent results. A comparison of the two methods revealed that the results obtained can be quite different. Specifically, findings obtained using the dimensional measure were much more robust, especially among the wives. In addition, a comparison of the measures assigning individuals to discrete attachment groups revealed that the amount of inter-method agreement, although high, was not what would be expected if the two methods were commensurate. Especially noteworthy was the large amount of disagreement between the two methods for the ambivalent group. This finding, along with the noted low test-retest reliability (cf. Baldwin & Fehr, 1993) and internal consistency of measures of ambivalent attachment, raises troubling issues about the measurement of this attachment group in particular. In addition, these findings raise a number of questions concerning the current practice of treating the two methods of measurement as equivalent and should provoke additional discussion on what is actually being measured by the two instruments.

The problems associated with categorical measures, particularly their instability and lack of statistical power, suggest that perhaps the more versatile dimensional measures of attachment should be employed in future research. However, difficulties exist with the dimensional measures as well. Several similar versions of the dimensional measure have been used, preventing generalization from one study to

another. These scales have also been plagued by limited internal consistency, especially the ambivalent scale. Although initial efforts have been made to improve these scales (cf. Feeney, Noller, & Hanrahan, 1994), further refinement needs to occur if they are to be of maximum utility.

Limitations of the study and suggestions for future research

Although the results of the current study enhance our understanding of the role of attachment in marital relationships, several limitations temper the conclusions that can be drawn. Because couples were selected on the basis of their marital satisfaction scores, our results may differ from those that would be obtained with an unselected sample. More specifically, the greater proportion of satisfied couples obtained in other studies may manifest different marital dynamics than the more dissatisfied couples represented here. However, it is precisely this type of question about the influence of attachment style in marital functioning that the present study was attempting to address. Future research in this area should continue to explore attachment processes among married couples of all types.

It is also possible that the sequencing of tasks in this study may have affected the results. Couples were asked to make self-report ratings of attachment style after the first problem-solving discussion. It may be that the experience of participating in a problem-solving discussion elicited cognitions, feelings, or memories that influenced the spouses' later attachment ratings. Such

an interpretation, which would be consistent with Baldwin and Fehr's (1993) conceptualization of attachment styles as relationship schema, again points to the need for further exploration of this notion.

In addition to the measurement issues raised earlier, future research in this area needs to move beyond self-report instruments to develop alternative methods of assessment. Some researchers have attempted to do this by developing attachment interviews (see Main et al., 1985) and using Q-sort methodology (e.g., Kobak & Hazan, 1991). Most applications of attachment theory to adult relationships suggest that much of the relevant material will be inaccessible to conscious memory or will be subject to consistent recall biases. Measurement methods that circumvent these problems need to be developed.

Although the current study provided some initial longitudinal information about attachment-related processes in adult romantic relationships, these findings should be considered preliminary. Additional longitudinal research should explore the processes of assimilation and accommodation in working models of attachment and how these processes influence other relationship qualities such as satisfaction and stability. Attachment theory suggests that reorganization of working models of attachment is most likely to occur during times of dramatic change, such as the formation or loss of an attachment relationship (Kobak & Hazan, 1991). It may therefore be judicious to employ longitudinal designs that include individuals experiencing such changes as the transition to marriage or divorce.

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