

# Negative affectivity as a mediator of the association between adult attachment and marital satisfaction

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## Abstract

Although the association between adult attachment and marital satisfaction is well documented, research has not examined processes by which attachment affects satisfaction. Drawing on attachment-oriented conceptualizations of affect regulation, the present study tested the hypothesis that negative affectivity mediates the association between attachment and marital satisfaction. Data from two samples of married couples were used to test the hypothesis. In both samples, negative affectivity mediated the association between some aspects of attachment insecurity and marital dissatisfaction, although attachment also retained a direct association with marital satisfaction in a number of cases. Results are discussed in terms of attachment-oriented conceptualizations of the function of negative emotion in marriage, and the empirical and conceptual overlap between attachment and negative affectivity.

An association between adult romantic attachment style and relationship satisfaction has been well documented. Secure attachment in adulthood correlates with high levels of satisfaction in dating and married couples (e.g., Collins & Read, 1990; Senchak & Leonard, 1992). However, relatively few studies have examined processes by which adult attachment style affects satisfaction (cf. Kobak & Hazan, 1991; Feeney, Noller, & Callan, 1994). Although it is

known that insecurely attached people are less satisfied in their relationships, little data exist explaining why this is the case. In the present study, we propose that adult attachment style affects relationship satisfaction through negative affectivity. Negative affectivity is defined as the stable tendency to experience and express negative emotion, and is typically assessed using various measures of neuroticism and negative emotionality (Watson & Clark, 1984; Watson, Clark, & Harkness, 1994). We tested the prediction that insecurity may be associated with negative affectivity, which, in turn, covaries with dissatisfaction.

Affect regulation is thought to be a key component of attachment. An important indicator of the nature of the early attachment relationship is the child's attempt to regulate distress as he or she interacts with the attachment figure (Bowlby, 1969, 1973). Experiences in these situations are translated into mental representations of self and other that are believed to guide expect-

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tations about, and behavior in, close relationships in adulthood. Thus, attachment style, or internal working models, in adulthood should contain information relevant to emotion regulation and, as such, should be associated with emotion-regulation strategies used in adult close relationships (e.g., Kobak, Ruckdeschel, & Hazan, 1994).

Attachment theory makes specific predictions regarding the experience and expression of negative affect by people with different attachment styles (see Cassidy, 1994; Izard & Kobak, 1991). When perceiving a threat to the attachment relationship, people with an insecure/ambivalent attachment may exaggerate negative emotions in an effort to gain the attention of the attachment figure. People with an insecure/avoidant attachment may inhibit or minimize negative emotions, so as not to threaten the relationship further. People with a secure attachment, because they do not fear the loss of the relationship, may openly and directly express negative affect, without exaggeration or minimization. Research on children (e.g., Cassidy & Kobak, 1988) and adolescents (e.g., Kobak & Sceery, 1988) supports these predictions.

Research is also beginning to show evidence for these predictions in adults, particularly in the context of close relationships. This research has typically examined dimensions of attachment rather than categories or styles and thus focuses on the association between negative affect and insecurity rather than on differences between attachment styles. For example, Shaver and Brennan (1992) found that attachment insecurity was associated with high levels of neuroticism (i.e., negative affectivity). Feeney (1995) found, in a sample of long-term dating couples, that attachment insecurity was associated with the frequent experience of negative emotions in their relationships. Kobak and Hazan (1991) examined behavioral manifestations of emotion regulation in married couples and found that spouses' insecurity was associated with greater expression of negative affect that implied criticism or rejection during a problem-solving task. These studies support the prediction that at-

tachment insecurity may be associated with both the experience and expression of exaggerated negative emotions.

The tendency to experience and express negative emotion is also associated with marital satisfaction. Compared with non-distressed couples, distressed couples exhibit more negative affect (see Bradbury & Karney, 1993; Weiss & Heyman, 1990, for reviews). Moreover, neuroticism has been shown to be among the strongest and most consistent predictors of relationship dissatisfaction and deterioration (e.g., Kelly & Conley, 1987; for a review, see Karney & Bradbury, 1995). Thus, emotion regulation, and the tendency toward negative affectivity in particular, may be an important determinant of marital quality and stability.

As noted, the construct of negative affectivity is thought to include both an affective *experience* and an affective *expression* dimension, and we have discussed them as related dimensions that may have similar associations with attachment and marital satisfaction. However, it is important that these dimensions are construed and examined separately as they may operate in different ways. For example, although Feeney (1995) found evidence of an association between attachment insecurity and the experience of negative emotions, she also found that some aspects of attachment insecurity were associated with less *expression* of negative affect (i.e., greater control of such affect). In the present study, we focused specifically on the dimension of negative affectivity that relates to the *experience* of negative affect. Although the measures we used are considered typical measures of negative affectivity, they are self-report measures that capture more of the experience dimension than the expression dimension. We thus predicted that attachment insecurity may be associated with relationship dissatisfaction to the extent that it is associated with an increased tendency to experience negative affect. Given that attachment insecurity is associated with negative affectivity, and that negative affectivity is associated with relationship dissatisfaction, it follows that negative affectivity may

mediate the relation between attachment and satisfaction. Attachment insecurity may thus be manifested in the tendency toward negative affectivity, which in turn may affect relationship satisfaction.

Examination of the experience of negative affect reported by people in close relationships afforded us the opportunity to address a second issue that has not received much attention in the adult attachment literature—the overlap between dimensions of adult attachment and other traits, in this case, negative affectivity (cf. Shaver & Brennan, 1992). Attachment theory was proposed, in part, as a theory of personality development (Bowlby, 1969), thus implying a close link between attachment representations and personality traits. In fact, negative affectivity and attachment share a number of features regarding beliefs about the self and others and resulting feelings of anxiety. Insecurely attached people, particularly those with fearful and preoccupied attachments, tend to be concerned about what others think of them, worried about how others will treat them, and afraid of being abandoned (e.g., Bartholomew & Horowitz, 1991). Similarly, people high in negative affectivity tend to be prone to fear and worry (among other negative emotions), have low self-esteem, and are sensitive to criticism (e.g., Watson et al., 1994). As noted earlier, reliable associations between adult attachment style and negative affectivity have been shown. Thus, in addition to testing the hypothesis that negative affectivity mediates the association between adult attachment and relationship satisfaction, we were able to examine the overlap between adult attachment and negative affectivity, and the extent to which attachment and negative affectivity make unique contributions to satisfaction.

The present article reports data from two samples of married couples. Although the foregoing hypotheses were tested in both studies, sample characteristics and measures varied. Consistent with prior research in this area, adult attachment style was assessed via self-report along attachment dimensions rather than as categories or styles. Also, con-

sistent with prior research, the experience of negative affect was assessed using self-report measures of negative affectivity and neuroticism. The mediational models were tested using structural equation modeling.

## Study 1: Method

### Participants

Participants were 117 couples in established marriages who had been recruited to participate in a longitudinal study of marriage. Potential participants were identified through marriage license records of small towns in the midwestern United States. Couples were invited to participate in the study if they were living together, if both spouses could read and speak English, and if both spouses had completed at least the tenth grade of high school (to ensure that they could read and understand all questionnaires). Over 80% of eligible couples agreed to participate. At the time of data collection, the couples had been married between 33 and 38 months. Only those couples with complete data were used in the analyses ( $N = 109$ ).

Couples had a modal gross annual income between \$25,000 and \$29,999. Ninety-one percent of the sample were Caucasian, 2% were Hispanic, 2% were Asian, 3% were African-American, and 2% indicated "other" for their ethnicity. Fifty-eight percent of the sample indicated that they were Protestant, 16% indicated Catholic, 3% indicated Jewish, 10% indicated "other," and 13% said that they were not associated with any religious group. Husbands averaged 30.8 years of age ( $SD = 6.8$ ) and 15.9 years of education ( $SD = 2.8$ ). Wives averaged 29.8 years of age ( $SD = 6.6$ ) and 15.4 years of education ( $SD = 2.4$ ).

### Procedures

Couples attended a laboratory session during which spouses individually completed consent forms, demographic forms, and the questionnaires reported in this study. Additional data were collected, but these are



beyond the scope of this report. Couples were paid \$30 for their participation.

### Measures

**Marital adjustment.** Two measures of marital adjustment were administered. The first was the Marital Adjustment Test (Locke & Wallace, 1959), a widely used 15-item instrument that has been shown to have adequate reliability and to discriminate between non-distressed spouses and spouses with documented marital problems (Locke & Wallace, 1959). The second measure was based on the Semantic Differential (Osgood, Suci, & Tannenbaum, 1957), which asks people to indicate their perceptions of a particular concept on a 7-point scale anchored by two opposite adjectives. In the present study, spouses were asked to rate how they felt about their marriage, using 3 adjective pairs (bad-good; satisfied-dissatisfied; unpleasant-pleasant). Internal consistencies (alpha) were .94 for wives and .90 for husbands. Following discussions by Fincham and Bradbury (1987), Huston, McHale, and Crouter (1986), and others, these two measures were selected because they capture both a broad multidimensional conception of marital satisfaction (the Marital Adjustment Test) and a homogeneous conception of marital satisfaction defined as a global evaluation of the marriage (the Semantic Differential).

**Dimensions of romantic attachment.** Dimensions of romantic attachment were measured using a series of statements assessing comfort with closeness, comfort depending on others, and anxiety about abandonment. Most of these statements were taken from the paragraphs in Hazan and Shaver's (1987) single-item measure of adult attachment. Participants rated, on a 4-point scale, the extent to which they agreed with each statement. To create attachment dimensions that would be consistent with established measures of adult attachment, only those items that matched items from the Adult Attachment Scale (Collins & Read, 1990) were used in the analyses. This

procedure resulted in eight items reflecting comfort with closeness and depending on others (coefficient alpha = .87 for wives and .86 for husbands) and five items reflecting anxiety about abandonment (coefficient alpha = .73 for wives and .72 for husbands).

**Negative affectivity.** Negative affectivity was assessed with the negative affect subscale of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). The Positive and Negative Affect Schedule lists 10 positive affects and 10 negative affects. Participants rated the extent to which they have experienced each affect over the past year on a 5-point scale ranging from (1) *very slightly or not at all* to (5) *extremely*. An overall negative affectivity score was computed by summing ratings for negative affects. High scores reflected high levels of negative affectivity. Coefficient alpha was .93 for wives and .92 for husbands.

### Overview of Data Analysis

Data were analyzed using structural equation modeling. Bentler's (1995) EQS program was used with maximum likelihood estimation, and the covariance matrix was analyzed. One model was tested that included husbands' and wives' variables. In the model, direct paths from attachment to marital satisfaction, and indirect paths from attachment to marital satisfaction through negative affectivity, were estimated within spouse (e.g., there was a direct path from husbands' attachment to husbands' marital satisfaction) and across spouse (e.g., there was a direct path from husbands' attachment to wives' marital satisfaction). In the model, husbands' attachment was correlated with wives' attachment, husbands' negative affectivity was correlated with wives' negative affectivity, and husbands' marital satisfaction was correlated with wives' marital satisfaction.<sup>1</sup> Marital satis-

1. Because negative affectivity and marital satisfaction were dependent variables in the model, their residuals were correlated in the Sample 1 and Sample 2 models.

faction was defined as a latent variable with scores on the Marital Adjustment Test and the Semantic Differential as indicators. Because dimensions of romantic attachment and negative affectivity were each measured by a single variable, they were not treated as latent. Rather, dimensions of romantic attachment were specified as two measured variables, comfort with closeness and anxiety about abandonment, which are considered to be separate underlying dimensions of attachment (e.g., Brennan, Clark, & Shaver, 1996; Shaver & Hazan, 1993). Negative affectivity was also a measured variable.

To test the hypothesis that negative affectivity would mediate the association between attachment and marital satisfaction, a procedure was used that follows logic similar to that of regression procedures for testing mediation described by Baron and Kenny (1986). Specifically, a variable may be said to mediate the association between two other variables if a model that includes the indirect path (from the predictor variable through the mediator to the outcome variable) provides a significantly better fit than a model that includes only the direct path (from the predictor variable directly to the outcome variable). In addition, if dropping the direct path from the model does not result in a significant degradation in model fit, then full mediation can be inferred.

Accordingly, we first tested a full model with both direct and indirect paths between the variables. We then tested a reduced model with only the direct paths between the variables (the direct model). The fit of these models was then compared to determine whether the direct model fit the data better than the full model. Following this, we tested a different reduced model that included only the indirect paths between the variables (the mediation model), and the fit of this model and the full model were compared. We expected the mediational model to fit the data and the direct model not to fit the data. The necessity of including individual paths in the model was exam-

ined at each step with the LaGrange Multiplier (LM) test.

Finally, to test for gender differences in associations between variables, the full model was tested with factor loadings and paths between husbands' variables constrained to be equal to factor loadings and paths between wives' variables. The LM test identifies which of the factor loadings and paths have been constrained inappropriately, and thus indicates which of the husbands' and wives' factor loadings and paths are significantly different.

## Results

Zero-order correlations, means, and standard deviations for all variables in the analyses for wives and husbands are shown in Table 1. All relevant variables were significantly correlated within spouses, rendering tests of mediation appropriate. Specifically, low levels of comfort with closeness and high levels of anxiety about abandonment were associated with high levels of negative affectivity and low levels of marital satisfaction. High levels of negative affectivity were also associated with low levels of marital satisfaction.

The full model fit the data,  $\chi^2(13) = 18.04, p = .16$ , Comparative Fit Index (CFI) = .990, and both measures of marital satisfaction loaded significantly on the marital satisfaction factor.<sup>2</sup> Figure 1 depicts these results. Only significant paths between variables are shown.<sup>3</sup> Factor loadings and residuals (error terms) are presented in Table 2. Among wives, negative affectivity had a significant, direct association with marital satisfaction. High levels of negative affectivity were associated with low levels of marital satisfaction. Comfort with closeness had an indirect association with marital satisfaction through negative affectivity, but not a direct association. High levels of com-

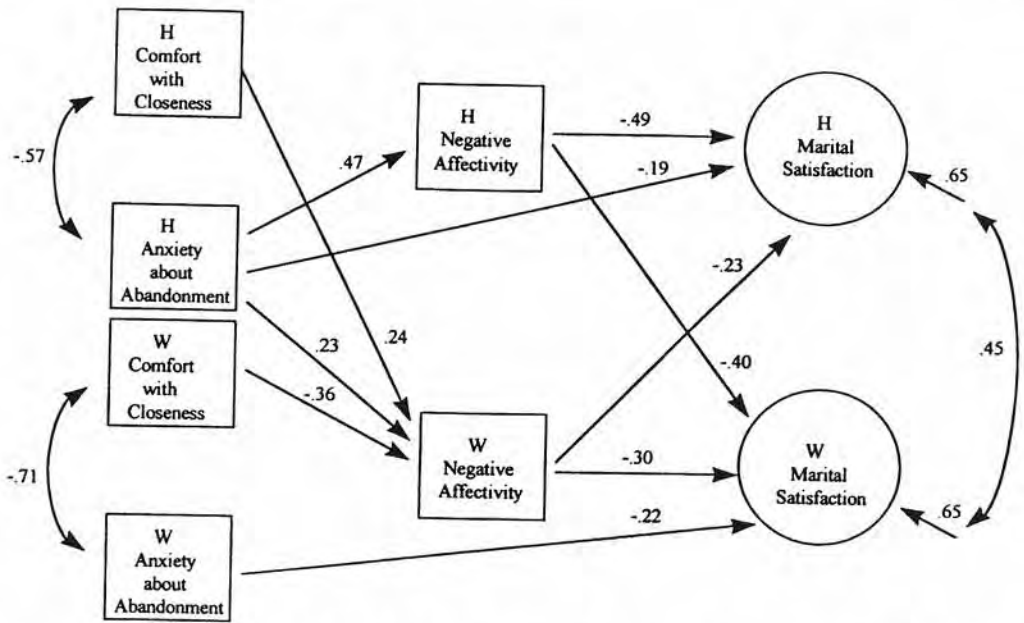
2. It should be noted that because all paths are included in the full model, the results indicate the fit of the measurement model. This is the case for the full model tested in Study 2 as well.
3. The fit of the model including only significant paths was  $\chi^2(28) = 34.20, p = .19$ , CFI = .987.

**Table 1.** Zero-order correlations, means, and standard deviations of all variables in the analyses for wives and husbands in Study 1

Variables	1	2	3	4	5	6	7	8	9	M	SD
1. H Comfort with Closeness										23.04	4.0
2. H Anxiety about Abandonment	-.57**									9.80	2.6
3. H Negative Affectivity	-.26**	.46**								20.97	7.6
4. H MAT	.33**	-.49**	-.62**							111.72	24.8
5. H SMD	.28**	-.39**	-.46**	.70**						18.13	3.7
6. W Comfort with Closeness	.06	-.08	-.11	.19*	.24**					22.74	4.3
7. W Anxiety about Abandonment	-.14	.12	.12	-.26**	-.20*	-.71**				9.64	2.8
8. W Negative Affectivity	.07	.13	.17*	-.29**	-.36**	-.42**	.33**			21.08	7.9
9. W MAT	.10	-.30**	-.43**	.55**	.50**	.40**	-.45**	-.47**		114.93	24.0
10. W SMD	.04	-.30**	-.51**	.52**	.50**	.41**	-.36**	-.46**	.77**	18.72	3.7

Note: N = 109 couples. H = Husband; W = Wife; MAT = Marital Adjustment Test; SMD = Semantic Differential.

\*  $p < .05$ , one-tailed. \*\*  $p < .01$ .



**Figure 1.** Mediation model for Study 1.  $N = 109$  couples. Numbers are beta weights. H = Husband; W = Wife. All paths and correlations are significant,  $p < .05$ , one-tailed.

fort with closeness were associated with low levels of negative affectivity. Anxiety about abandonment had a direct association with marital satisfaction, but not an indirect association, as it was not associated with negative affectivity. High levels of anxiety about abandonment were associated with low levels of marital satisfaction.

Among husbands, negative affectivity had a significant, direct association with marital satisfaction. Again, high levels of negative affectivity were associated with low levels of marital satisfaction. Anxiety about abandonment had an indirect associa-

tion with marital satisfaction through negative affectivity and also a direct association with marital satisfaction. High levels of anxiety about abandonment were associated with high levels of negative affectivity and low levels of marital satisfaction. Comfort with closeness was not significantly associated with negative affectivity and had only a marginally significant direct association with marital satisfaction ( $p = .08$ ). High levels of comfort with closeness were associated with high levels of marital satisfaction.

Although not the focus of our study, there were a number of significant cross-

**Table 2.** Factor loadings and error terms for Study 1 model

Factors	Wives		Husbands	
	Loading	Error	Loading	Error
Marital Satisfaction				
MAT	.89	.48	.91	.42
SMD	.88	.47	.77	.64
Negative Affectivity		.88		.88

Note: MAT = Marital Adjustment Test; SMD = Semantic Differential assessment of marital satisfaction.



spouse paths. Husbands' and wives' high levels of negative affectivity were associated with their partners' low levels of marital satisfaction. Husbands' high levels of anxiety about abandonment and, surprisingly, high levels of comfort with closeness were associated with wives' high levels of negative affectivity. Husbands' and wives' levels of marital satisfaction were correlated, but their scores on attachment and on negative affectivity were not.

The direct model was tested next. This model included only direct paths to marital satisfaction, both within and across spouses. Consistent with predictions, this model did not fit the data,  $\chi^2(21) = 70.68, p = .001$ , CFI = .897, and the chi-square difference between this model and the full model,  $\chi^2(8) = 52.64$ , was significant, suggesting that deleting all of the indirect paths results in a significant degradation in model fit. In line with this, the LM test suggested that including the paths from wives' comfort with closeness to wives' negative affectivity and husbands' anxiety about abandonment to husbands' negative affectivity would result in a better-fitting model.

The indirect model was then tested. This model included only indirect paths within and across spouses. Contrary to predictions, this model did not fit the data,  $\chi^2(21) = 48.58, p = .001$ , CFI = .943, and the chi-square difference between this model and the full model,  $\chi^2(8) = 30.54$ , was significant, suggesting that deleting all of the direct paths results in a significant degradation in model fit. Consistent with this, the LM test suggested that including the paths from husbands' comfort with closeness to husbands' marital satisfaction would result in a better-fitting model. The direct paths from anxiety about abandonment to marital satisfaction, which had been significant in the full model for husbands and wives, were not identified for inclusion by the LM test. Together, the analyses indicated that a model including indirect and direct associations among attachment, negative affectivity, and marital satisfaction is the most appropriate representation of the data.

Finally, to test for gender differences, the full model was re-estimated constraining all of the factor loadings and paths between husbands' variables and all of the factor loadings and paths between wives' variables to be equal. The LM test indicated that the constraint on the path from anxiety about abandonment to negative affectivity should be released, suggesting that husbands' (.47) and wives' (.08) path estimates differ significantly. No other paths were significantly different.

## Discussion

The results from Study 1 suggest that, for husbands and wives, adult attachment has, in some cases, an indirect association with marital satisfaction mediated through negative affectivity and, in other cases, a direct association with marital satisfaction. These results lend partial support to our hypothesis that attachment insecurity is associated with marital dissatisfaction to the extent that it is associated with high levels of negative affectivity.

Specific results appeared to differ for husbands and wives. For wives, comfort with closeness was indirectly associated with marital satisfaction, but anxiety about abandonment was directly associated with marital satisfaction. For husbands, anxiety about abandonment was indirectly and directly associated with marital satisfaction. Comfort with closeness had only a marginally significant direct association with marital satisfaction. Tests for gender differences revealed only one reliable difference. Husbands' anxiety about abandonment was more strongly associated with husbands' negative affectivity than wives' anxiety about abandonment was with wives' negative affectivity.

The presence of significant direct associations between attachment and marital satisfaction also shows that attachment and negative affectivity have unique associations with marital satisfaction. This finding suggests that adult attachment and negative affectivity are independent constructs. Although they overlap conceptually and em-



pirically, they account for unique variation in marital satisfaction. This is consistent with the work of Shaver and Brennan (1992), who found that adult attachment accounts for variance in dating relationship satisfaction over and above that accounted for by neuroticism.

Finally, the results suggest that cross-spouse associations among attachment, negative affectivity, and marital satisfaction exist. Although not the focus of our study, these findings indicate that future models of attachment and marital satisfaction may need to take such cross-spouse effects into account. Our findings are consistent with a pattern in which husbands' high levels of anxiety about abandonment and high levels of comfort with closeness are associated with high levels of wives' negative affectivity, which is in turn associated with low levels of both husbands' and wives' marital satisfaction. It is unclear why high levels of comfort with closeness would be associated with wives' high levels of negative affectivity. One possibility is that having a husband who is comfortable with closeness allows women to experience, and possibly express, a wider range of negative emotions. Another possibility is that women may experience their husbands' comfort with closeness as an indicator of anxiety about abandonment (e.g., neediness, clinginess), thus resulting in negative affect. Both possibilities are speculations and need to be examined further.

## Study 2

Although partially consistent with predictions, the results reported thus far may reflect idiosyncracies of the measures and sample used. In order to test the generalizability of these results, the models were re-examined in another sample, after making three important changes. First, multiple measures of attachment and negative affectivity were collected. Thus, additional latent variables could be specified allowing for more reliable estimates of relations between the variables. Second, the measures assessing attachment and negative affectiv-

ity differed from those in Study 1 (although they represented the same constructs). The emergence of similar results across multiple measures of the same constructs would provide strong support for our hypothesis. Third, the sample was comprised of newlywed couples rather than couples in established marriages. Extending the findings to a newlywed sample is important because the greater homogeneity of such samples permits a more precise interpretation of findings (e.g., variables such as duration of the marriage and number of children, which are known to covary with marital satisfaction, vary more among established marriages than among newlywed couples; hence, they do not affect interpretations of results in newlywed samples to as large a degree).

## Method

### *Participants*

Participants were 172 newlywed couples in first marriages recruited from marriage licenses filed in Los Angeles County. To be eligible to participate, both spouses had to be over 18 years of age, have at least a tenth-grade education, speak English, have no children, and have no immediate plans to move from the area. Wives had to be under 35 years of age, to allow for the possibility that all couples could become parents during the course of the larger project.

Marriage licenses in Los Angeles County include both spouses' address, age, years of education, and number of previous marriages. Couples who were eligible on the basis of this information were sent letters inviting them to participate in the study. Of the 3,606 letters that were sent, 637 couples (17.8%) expressed interest in participating, 41 letters were returned as undeliverable (1.1%), and 2,928 letters (81.2%) went unanswered. The 17.8% response rate is similar to that of other studies recruiting married couples from public records (e.g., 18% by Kurdek, 1991; 17% by Spanier, 1976). Compared to the 2,928 nonrespondents, the

637 respondents were more likely to cohabit premaritally (42.9% vs. 35.3%), and to have had more years of education (for wives, 15.4 years vs. 14.5 years; for husbands, 15.2 years vs. 14.6 years); also, the wives were older (26.6 years vs. 26.2 years); as might be expected, respondents also had higher-status jobs (see Karney et al., 1995). The couples who expressed interest in participating were screened further with a telephone interview to ensure that the remaining eligibility criteria were met. The first 172 couples who met the eligibility criteria and who kept their laboratory appointment formed the sample. All couples were married less than 6 months when they participated in the study.

Wives averaged 26.0 years of age ( $SD = 3.4$ ) and 16.2 ( $SD = 2.0$ ) years of education, and their median annual income ranged from \$11,000 to \$20,000. Sixty-one percent were Caucasian, 15% were Asian American/Pacific Islander, 5% were African American, 16% were Latina/Chicana, 2% were Middle Eastern, and 1% identified themselves as "other." Husbands averaged 27.6 years of age ( $SD = 3.9$ ), had 15.6 years of education ( $SD = 2.2$ ), and their median annual income ranged from \$21,000 to \$30,000. Sixty-seven percent were Caucasian, 13% were Asian American/Pacific Islander, 4% were African American, 15% were Latino/Chicano, and 1% were Middle Eastern. Only those couples with complete data were used in the analyses ( $N=159$ ).

### Procedure

The present study was part of a larger investigation of newlywed marriage. Spouses completed measures of romantic attachment representations and negative affectivity at home prior to a laboratory session during which the measures of marital adjustment were completed. Independent completion of home materials was stressed in the instructions to the questionnaires, in a letter that was sent to each couple, and in a telephone call to each couple. Couples were paid \$75 for their participation.

### Measures

**Marital adjustment.** Two measures of marital adjustment were administered. The first was the Marital Adjustment Test (Locke & Wallace, 1959) described in Study 1. The second was a Semantic Differential measure, also similar to the one used with Study 1. However, in this case, spouses were asked to rate how they felt about their marriage using 16 adjective pairs (e.g., bad-good; satisfied-dissatisfied; happy-sad). Internal consistencies ( $\alpha$ ) were .91 for wives and .93 for husbands.

**Dimensions of romantic attachment.** The 18-item Revised Adult Attachment Scale (Collins & Read, 1990) was used to assess dimensions of adult romantic attachment. This scale includes three subscales of adult attachment: *close*, which measures the extent to which people feel comfortable being close to others; *depend*, which measures the extent to which people are comfortable relying on others, and believe that others are dependable; and *anxiety*, which assesses fear about abandonment and fear of being unloved. The Revised Adult Attachment Scale has been shown to have adequate reliability and validity (e.g., Collins & Read, 1990). For wives and husbands, respectively, internal consistencies ( $\alpha$ s) in the present study were: *close* .77, .78; *depend* .77, .79; *anxiety* .83, .83. Note that all of the items in the attachment measure used in Study 1 overlapped with the items on the Revised Adult Attachment Scale.

**Negative affectivity.** Negative affectivity was assessed with the Neuroticism scale of the Eysenck Personality Questionnaire (Eysenck & Eysenck, 1978) and the Neuroticism scale of the NEO-FFI Form S (Costa & McCrae, 1992). Both instruments are widely used and assess the extent to which participants experience a range of negative affect (e.g., tension, anxiety, sadness). The Neuroticism subscale of the Eysenck Personality Questionnaire is a 23-item true-false measure that has adequate internal consistency and test-retest reliability.

ity (Eysenck & Eysenck, 1978). Coefficient alpha was .83 for wives and .86 for husbands in the present sample. The Neuroticism subscale of the NEO is a 12-item scale on which participants rate the extent to which they agree with each statement on a 5-point scale ranging from *strongly disagree* (1) to *strongly agree* (5). Extensive reliability and validity data exist for this scale (see Costa & McCrae, 1992). Coefficient alpha in the present sample was .77 for wives and .75 for husbands. Although these scales do not ask for ratings of individual emotions as the Positive and Negative Affect Schedule does, they do capture the stable experience of negative emotion. For example, items on these scales include: "I often feel tense and jittery," "I am seldom sad and depressed," "Are you an irritable person?," "Are you troubled by feelings of guilt?"

### Overview of Data Analysis

Data were again analyzed using structural equation modeling. The covariance matrix was analyzed using Bentler's (1995) EQS program with maximum likelihood estimation. As in Study 1, one model was tested that included husbands' and wives' variables with all within- and between-spouse paths and correlations. In this model, scores on the Marital Adjustment Test and the Semantic Differential were indicators of a marital satisfaction factor. Scores on the subscales, *Close* and *Depend*, of the Revised Adult Attachment Scale, were indicators of a comfort with closeness factor. Scores on the Neuroticism subscale of the Eysenck Personality Questionnaire and the Neuroticism subscale of the NEO were indicators of a negative affectivity factor. Anxiety about abandonment was a measured variable. The same procedures used for testing mediation and gender differences in Study 1 were employed.

### Results

Zero-order correlations, means, and standard deviations for all variables in the analyses for wives and husbands are shown in

Table 3. All relevant variables were significantly correlated within spouses, rendering tests of mediation appropriate. Specifically, low levels of close, low levels of depend, and high levels of anxiety about abandonment were associated with high levels of negative affectivity and low levels of marital satisfaction. High levels of negative affectivity were associated with low levels of marital satisfaction.

The full model fit the data,  $\chi^2(51) = 67.22$ ,  $p = .06$ , CFI = .981, and all factor indicators loaded significantly on their relevant factor. Figure 2 depicts these results. Only significant paths between variables are shown.<sup>4</sup> Factor loadings and residuals (error terms) are presented in Table 4. Among wives, negative affectivity had a significant, direct association with marital satisfaction. High levels of negative affectivity were associated with low levels of marital satisfaction. Comfort with closeness and anxiety about abandonment had indirect associations with marital satisfaction through negative affectivity, but not direct associations. High levels of comfort with closeness and low levels of anxiety about abandonment were associated with low levels of negative affectivity.

Among husbands, negative affectivity had a significant, direct association with marital satisfaction. Similar to wives' data, comfort with closeness and anxiety about abandonment had indirect associations with marital satisfaction through negative affectivity. High levels of comfort with closeness and low levels of anxiety about abandonment were associated with low levels of negative affectivity. However, husbands' comfort with closeness also had a significant direct association with husbands' marital satisfaction. High levels of

4. The fit of the model including only significant paths was  $\chi^2(64) = 91.15$ ,  $p = .01$ , CFI = .969. To consider a model an adequate fit to the data, two of the three following conditions must be met: The ratio of chi square to degrees of freedom must be less than 2:1; the  $p$  value must be nonsignificant; and the CFI must be greater than or equal to .90 (see Newcomb, 1994). This model meets two of the three criteria.

**Table 3.** Zero-order correlations, means, and standard deviations of all variables in the analyses for wives and husbands in Study 2

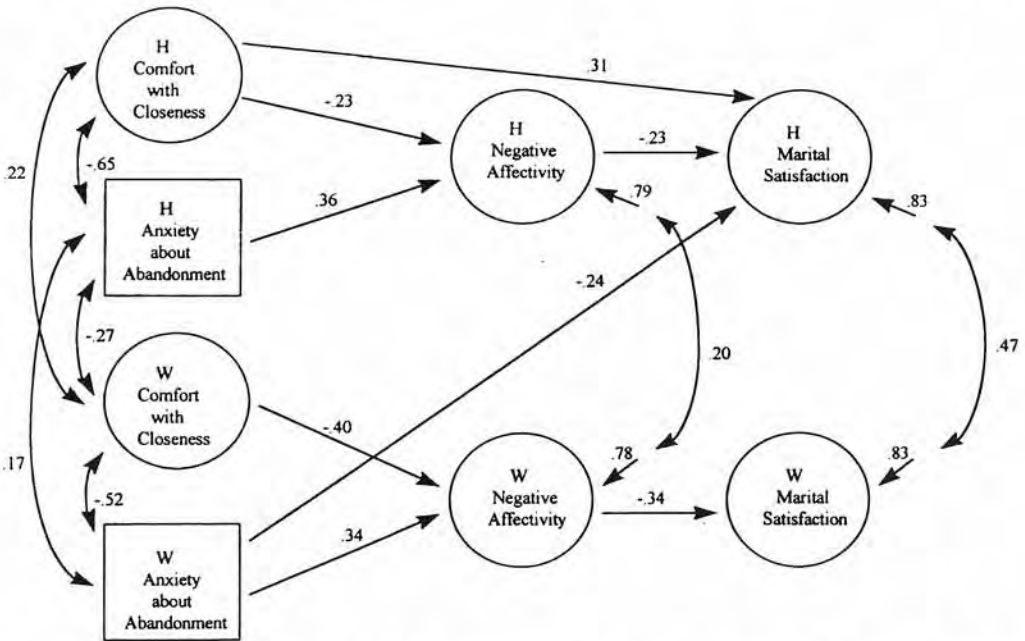
Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	M	SD
1. H Close														21.87	4.3
2. H Depend	.56**													19.27	4.4
3. H Anxiety	-.49**													13.45	4.8
4. H EPQN	-.19**	-.41**												6.55	4.8
5. H NEO-N	-.32**	-.27**	.45**											29.01	5.9
6. H MAT	.21**	.25**	-.22**	.63**										126.64	17.2
7. H SMD	.24**	.26**	-.22**	-.25**	-.31**									99.92	9.6
8. W Close	.13	.07	-.18*	-.13	-.12	.68**								23.00	4.7
9. W Depend	.16*	.14*	-.24**	-.23**	-.25**	.29**	.10							20.43	4.7
10. W Anxiety	-.11	-.04	.17*	.10	.20**	-.37**	.21**	.59**						13.31	5.1
11. W EPQN	-.00	.00	-.03	.10	.14*	-.24**	-.27**	-.33**	-.47**					9.30	4.9
12. W NEO-N	-.00	.03	.03	.15*	.18**	-.23**	-.20**	-.35**	-.39**	.38**				31.64	6.7
13. W MAT	.11	.19*	-.14*	-.20**	-.27**	.49**	.44**	.24**	.35**	-.33**	.73**			129.91	16.4
14. W SMD	.07	.13	-.04	-.13*	-.19**	.36**	.41**	.13	.31**	-.28**	-.32**	-.41**	.74**	102.45	8.8

Note: N = 159 couples.

H = Husband; W = Wife; Close = comfort with closeness dimension of the Revised Adult Attachment Scale; Depend = comfort with depending on others dimension of the Revised Adult Attachment Scale; Anxiety = anxiety about abandonment dimension of the Revised Adult Attachment Scale; EPQN = Neuroticism subscale of the Eysenck Personality Questionnaire; NEO-N = Neuroticism subscale of the NEO-FFI; MAT = Marital Adjustment Test; SMD = Semantic Differential measure of marital satisfaction.

\* $p < .05$ , one-tailed. \*\* $p < .01$ .





**Figure 2.** Mediation model for Study 2.  $N = 159$  couples. Numbers are beta weights. H = Husband; W = Wife. All paths and correlations are significant,  $p < .05$ , one-tailed.

comfort with closeness were associated with high levels of marital satisfaction.

Regarding cross-spouse paths, there was one significant association. Wives' high levels of anxiety about abandonment were directly associated with husbands' low levels of marital satisfaction. In addition, husbands' and wives' levels of marital satisfaction, negative affectivity, and attachment insecurity were correlated (except for husbands' and wives' comfort with closeness).

The direct model was tested next. This model included only direct paths to marital satisfaction, both within and across spouses. Consistent with predictions, this model did not fit the data,  $\chi^2(59) = 177.11$ ,  $p = .001$ , CFI = .863, and the chi-square difference between this model and the full model,  $\chi^2(8) = 109.89$ , was significant, suggesting that deleting all of the indirect paths results in a significant degradation in model fit. In line with this, the LM test suggested that including the paths from wives' comfort with closeness and anxiety about abandonment to wives' negative affectivity and

from husbands' anxiety about abandonment to husbands' negative affectivity would result in a better-fitting model. The path from husbands' comfort with closeness to negative affectivity was not suggested for inclusion.

The indirect model was tested next. This model included all indirect paths within and across spouses and one direct path from wives' anxiety about abandonment to husbands' marital satisfaction. This latter path was included because it was significant in the full model and because we were interested in the effect of deleting the within-spouse direct paths, rather than the cross-spouse direct effects. Consistent with predictions, this model adequately fit the data,  $\chi^2(60) = 83.94$ ,  $p = .02$ , CFI = .972,<sup>5</sup> and the chi-square difference between this model and the full model,  $\chi^2(9) = 16.73$ , was not significant, suggesting that deleting all of the within-spouse direct paths does not significantly degrade the fit of the

5. The indirect model meets the criteria for an adequate fit as described in footnote 4.

**Table 4.** Factor loadings and error terms for Study 2 model

Factors	Wives		Husbands	
	Loading	Error	Loading	Error
Marital Satisfaction				
MAT	.93	.37	.88	.47
SMD	.80	.60	.77	.64
Negative Affectivity				
EPQN	.79	.62	.78	.63
NEO-N	.92	.38	.81	.59
Comfort with Closeness				
CLOSE	.66	.75	.72	.70
DEPEND	.89	.45	.78	.63

Note: Close = comfort with closeness dimension of the Revised Adult Attachment Scale; Depend = comfort with depending on others dimension of the Revised Adult Attachment Scale; EPQN = Neuroticism subscale of the Eysenck Personality Questionnaire; NEO-N = Neuroticism subscale of the NEO-FFI; MAT = Marital Adjustment Test; SMD = Semantic Differential measure of marital satisfaction.

model. However, the LM test suggested that including the path from husbands' comfort with closeness to husbands' marital satisfaction would result in a better-fitting model. Together, the analyses indicate that a model that includes indirect associations between attachment and marital satisfaction, but not direct associations, is an appropriate representation of the data.

Finally, to test for gender differences, the full model was re-estimated constraining all of the factor loadings and paths between husbands' variables and all of the factor loadings and paths between wives' variables to be equal. The LM test indicated that the constraint on the cross-spouse path from anxiety about abandonment to negative affectivity should be released, suggesting that the path from husbands' anxiety about abandonment to wives' negative affectivity ( $-.11$ ) differed significantly from the path from wives' anxiety about abandonment to husbands' negative affectivity ( $.03$ ). No other paths were significantly different.

## Discussion

Results from Study 2 provide evidence that negative affectivity mediates the association between attachment and marital satisfaction. Both attachment dimensions, for

husbands and wives, were indirectly associated with marital satisfaction through negative affectivity. There was only one significant direct association. Husbands' comfort with closeness was directly associated with husbands' marital satisfaction. This latter finding provides some additional evidence that negative affectivity and certain aspects of adult attachment are independent constructs.

These results also suggest that there are practically no gender differences in the associations we examined. Finally, there was one significant cross-spouse path. Wives' anxiety about abandonment was significantly associated with lower marital satisfaction for husbands. This finding is consistent with previous research among dating couples that has shown that women's anxiety about abandonment is correlated with her partners' relationship satisfaction (e.g., Collins & Read, 1990).

## General Discussion

The present study tested the hypothesis that negative affectivity, specifically defined as the experience of negative affect, would mediate the association between dimensions of adult attachment and relationship satisfaction. Data from two samples of married couples provided partial support for

this prediction, with more evidence of full mediation emerging in Study 2 than in Study 1. In support of the hypothesis, in Study 2, the association between both attachment dimensions (comfort with closeness and anxiety about abandonment) and marital satisfaction, for husbands and wives, was mediated by negative affectivity. Attachment insecurity was associated with the experience of high levels of negative affect, which was associated with low levels of marital satisfaction. In only one case was there also a direct association between attachment and marital satisfaction. Husbands' comfort with closeness was directly associated with marital satisfaction.

Study 1 provided less evidence of mediation. Wives' negative affectivity mediated the association between comfort with closeness and marital satisfaction. Discomfort with closeness was associated with the experience of high levels of negative affect, which was associated with low levels of marital satisfaction. In addition, among husbands, negative affectivity mediated the association between anxiety about abandonment and marital satisfaction. High levels of anxiety about abandonment were associated with the experience of high levels of negative affect, which was associated with low levels of marital satisfaction. However, husbands' anxiety about abandonment was also directly associated with marital satisfaction.

There were two additional direct associations in Study 1. Wives' anxiety about abandonment was directly associated with marital satisfaction, and husbands' comfort with closeness had a marginally significant direct association with marital satisfaction. To summarize, of the eight mediated paths examined across the two samples, four showed evidence of full mediation. Two showed evidence of partial mediation (i.e., an indirect association and a direct association existed), and two direct associations were found where no indirect association existed. Thus, although these findings do not fully support our hypothesis, they do suggest that negative affectivity is at least a

partial mediator of the association between attachment and marital satisfaction.

The mediation findings are consistent with past research linking negative affect to attachment insecurity (e.g., Feeney, 1995; Kobak & Hazan, 1991) and to marital dissatisfaction (e.g., Kelly & Conley, 1987; see Karney & Bradbury, 1995, for a review), and they support recent attachment-oriented conceptualizations of marital distress. For example, Kobak et al. (1994) suggest that symptoms of marital distress are actually distorted attachment signals. When the attachment relationship is viewed as threatened (e.g., when spouses begin to view their partner as unavailable), normal negative emotions that signal the threat may get distorted and expressed in a manner that contributes to marital difficulties. Our findings specifically suggest that spouses who report high levels of anxiety about abandonment or low levels of comfort with closeness may be most likely to have difficulty regulating their negative emotions and, thus, may be more likely to experience ongoing marital problems.

The findings of this study thus build on previous research linking adult attachment to relationship satisfaction by identifying one process by which attachment might affect relationship satisfaction. The findings also point to a number of important areas for future investigation. First, longitudinal tests of this process are necessary to understand more fully how attachment might bring about change in marital satisfaction. A related issue is that, because the present data were cross-sectional, direction of causality among the variables cannot be determined. As such, it is possible that marital satisfaction or negative emotions affect attachment, rather than vice versa. Indeed, some research shows that relationship events can cause changes in attachment styles (e.g., Kirkpatrick & Hazan, 1994). Additionally, the heightened experience of negative affect may make attachment concerns even more salient and, thus, exacerbate dissatisfaction. It is possible, therefore, that attachment and negative affectivity may affect one another in a reciprocal

fashion. Thus, the examination of all directional possibilities in longitudinal studies is necessary.

Second, the present study focused on the experience of negative affect, but the expression of negative affect is also likely to be implicated in the association between attachment and marital satisfaction. As some research shows, these two dimensions of negative affectivity may even have different implications for marital satisfaction (e.g., Feeney, 1995). In studying the experience or expression of negative affect, examination of behavioral indicators of negative affect are needed to identify whether insecurity is associated with actual rather than self-reported negative affect. Future research should also examine differences between attachment styles to test the specific predictions of attachment theory regarding the experience and expression of negative affect.

An additional issue needing further attention is whether attachment is specific to emotion in relationship contexts, or to emotion more generally. The present study, and others that use self-report measures of negative affectivity and neuroticism (e.g., Shaver & Brennan, 1992), suggest that attachment is associated with the experience of negative emotion in general and that the stable tendency to experience negative emotion has effects on relationships. Research also indicates that negative affectivity may mediate the association between attachment and other aspects of functioning.

For example, Feeney and Ryan (1994) found that negative emotionality partially mediated the association between attachment insecurity and reports of physical symptoms. Specifically, anxious ambivalence was associated with high levels of negative emotionality, which was associated with the report of frequent physical symptoms. Thus, the extent to which attachment is associated with emotions that are specific to romantic relationships, and the extent to which attachment-related emotions affect other aspects of functioning, are questions that merit continued attention.

Although this study supports the hy-

pothesis that negative affectivity partially mediates the association between attachment insecurity and marital dissatisfaction, there may be other processes by which attachment affects marital satisfaction. For example, a number of studies suggest that communication behaviors may play a role in the association between attachment and marital functioning (e.g., Feeney et al., 1994; Kobak & Hazan, 1991). In addition to one's own negative affectivity or communication behavior, the emotion and behavior of one's spouse may also be implicated in the association between attachment and relationship satisfaction. Although not the focus of the present study, the data analytic techniques that we used allowed us to examine cross-spouse associations among attachment, negative affectivity, and marital satisfaction. Associations were different in Study 1 and Study 2, yet the presence of such associations suggests that it may be important to consider spousal effects when studying how attachment affects marital satisfaction.

A secondary focus of the present study was to examine the overlap between attachment insecurity and negative affectivity. This was important because the two have been shown to be conceptually and empirically related. The results were somewhat mixed. In some cases where negative affectivity mediated the association between attachment and marital satisfaction, direct associations between attachment and marital satisfaction were reduced to nonsignificance. This finding would suggest that attachment and negative affectivity do not account for unique variance in marital satisfaction. In other cases, attachment retained a direct association with marital satisfaction.

In addition, there were a number of cases in which negative affectivity did not mediate the association between attachment and marital satisfaction. Rather, attachment and negative affectivity both had direct associations with marital satisfaction. These latter findings are consistent with the findings of Shaver and Brennan (1992), who found that neuroticism and attach-



ment made independent contributions to marital satisfaction. These mixed findings regarding the overlap between attachment and negative affectivity highlight the need for continued research examining the relation between attachment and personality traits. Because adult attachment and personality traits (1) are both measured via

self-report, (2) are associated with one another, and (3) have similar correlates in the area of relationship functioning, we must continue to investigate and distinguish between (or integrate) theories of attachment and relationship functioning and more general theories of personality and relationship functioning.

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