# Adult Attachment, the Transition to Parenthood, and Depressive Symptoms

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Testing a model suggested by J. Bowlby (1988), this study investigated how a personal vulnerability (attachment ambivalence) interacts with perceptions of deficient spousal support before and during a major life stressor (the transition to parenthood) to predict pre-to-postnatal increases in depressive symptoms. Highly ambivalent women who entered parenthood perceiving either less support or greater anger from their husbands experienced pre-to-postnatal increases in depressive symptoms at 6 months postpartum. The associations between these 2 prenatal interaction terms and pre-to-postnatal increases in depressive symptoms were mediated by perceptions of declining spousal support across the transition period. Moreover, for highly ambivalent women, the association between prenatal and postnatal depression scores was mediated by perceptions of the amount of support available from their husbands.

The period surrounding the birth of a first child often is the most challenging and stressful life transition that many couples ever face (Heinicke, 1995). Although the transition to parenthood enhances personal and marital well-being in some couples (Cowan & Cowan, 2000), new parents usually report declines in marital satisfaction and increases in personal problems in the months after childbirth (Belsky, Lang, & Rovine, 1985; Belsky & Pensky, 1988; Belsky, Spanier, & Rovine, 1983; Cowan, Cowan, Core, & Core, 1978; Cowan et al., 1985; Levy-Shiff, 1994). This is particularly true for women (Belsky & Pensky, 1988), who must deal with pregnancy, childbirth, intensive postpartum child care, and often career-related stressors.

As documented by a number of studies (see O'Hara & Swain, 1996), the birth of a child can also trigger or aggravate depressive symptoms in new mothers. Although several factors can affect postnatal depressive symptoms, inadequate emotional support by husbands and marital dissatisfaction play major roles in generating postnatal depression (Cutrona & Troutman, 1986; Kumar & Robson, 1984; O'Hara, 1985; O'Hara, Rehm, & Campbell, 1982; Stemp, Turner, & Noh, 1986; Watson, Elliot, Rugg, & Brough, 1984). The present research extends these general findings in novel theoretical directions. Drawing on attachment theory (Bowlby, 1969, 1973, 1980), we tested a series of theoretically derived predictions regarding (a) individual differences in the susceptibility to depressive symptoms when spouses are perceived to provide inadequate support and (b) the process through which these differences are associated with changes in depressive symptoms across the early stages of the transition to parenthood.

## Attachment Theory

Although attachment theory was developed to explain social development "from the cradle to the grave" (Bowlby, 1979, p. 129), the earliest research focused almost exclusively on infant–caregiver attachments. Ainsworth, Blehar, Waters, and Wall (1978) were the first to document the three primary types of infant–caregiver attachment relationships. Children who are securely attached to their caregivers treat them as sources of emotional support to whom they turn for comfort in times of distress. Children with avoidant attachments, in contrast, do not view their caregivers as sources of support and actively distance themselves from their caregivers both physically and psychologically when upset. Children with anxious–ambivalent attachments exhibit approach–avoidance behaviors toward their caregivers when distressed, mixing bids for comfort and support with withdrawal and strong expressions of anger. These patterns of attachment develop partly in response to the consistency and quality of affection and support that caregivers give to their children (Ainsworth et al., 1978; van IJzendoorn, 1995). Caregivers who are affectionate and

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supportive tend to have securely attached children, those who consistently reject bids for affection and support and encourage emotional independence too early tend to have avoidantly attached children, and those who behave inconsistently or unpredictably tend to have anxiously attached children (Bowlby, 1973; Crittenden & Ainsworth, 1989).

These caregiving experiences affect the degree to which individuals feel optimistic about whether future attachment figures can be counted on for emotional support, particularly in distressing situations. Bowlby (1973, p. 208) claimed that "ordinarily affectionate" parents instill in their children such firm and deeply rooted expectations for emotional support that their children almost cannot imagine a world in which support is not available. Children with rejecting or unpredictable caregivers, in contrast, have much less confidence that subsequent attachment figures will be available and supportive in times of need. During development, experiences with caregivers coalesce into internal working models of the self as worthy versus unworthy of support and of significant others as willing versus unwilling to provide support. Although these models can be modified by social experiences (e.g., with close friends or romantic partners), they gradually solidify across development and exert an increasingly strong influence on social perceptions and behavior (Collins & Allard, 2001).

Hazan and Shaver (1987) developed the first self-report adult attachment scale, which was designed to tap the three basic attachment styles (*orientations*) identified by Ainsworth et al. (1978). Recent research, however, has confirmed that two orthogonal dimensions underlie the three categories, and these dimensions are now the focus of most adult attachment research (see Brennan, Clark, & Shaver, 1998; Griffin & Bartholomew, 1994). The first dimension, labeled *avoidance*, assesses the degree to which individuals limit intimacy and maintain psychological and emotional independence from significant others. Highly avoidant people tend to have a defensive, self-protective stance toward close relationships (Crittenden & Ainsworth, 1989). The avoidance dimension is believed to regulate attachment behaviors (e.g., seeking support vs. withdrawing from others) with respect to attachment-relevant goals (Fraley & Shaver, 2000). The second dimension, labeled *anxiety* or *ambivalence*, assesses the degree to which people worry that relationship partners might be unavailable or unsupportive when needed. Highly ambivalent people are undefended and are chronically anxious and uncertain about the permanence of their relationships (Cassidy & Berlin, 1994). The anxiety dimension is thought to govern the monitoring and appraisal of events relevant to attachment goals (e.g., the physical or psychological proximity, responsiveness, and availability of attachment figures; Fraley & Shaver, 2000). People who score low on both dimensions (prototypically "secure" people) feel comfortable with dependence and intimacy in relationships and do not worry about being abandoned or unsupported.

As mentioned above, Bowlby (1973) claimed that securely attached people should be confident that social support will be available when needed, whereas insecurely attached people should not. Indeed, research has confirmed that highly avoidant people are less likely to seek support from their attachment figures when distressed, whereas highly secure persons readily do so (Mikulincer & Florian, 1995; Mikulincer, Florian, & Weller, 1993; Ognibene & Collins, 1998; Simpson, Rholes, & Nelligan, 1992). Highly avoidant people also are more likely to harbor negative expectations about the availability of support than secure persons, whereas highly ambivalent people are less satisfied with the support they perceive available and mistrust potential support providers more than other people (Bartholomew, Cobb, & Poole, 1997; Collins & Feeney, 2000; Kobak & Sceery, 1988; Wallace & Vaux, 1994).

## Attachment and Depressive Symptoms

Attachment theory (Bowlby, 1980) was developed in part to explain the origins of depression and other psychological disorders. Adopting a diathesis-stress perspective, Bowlby (1988) claimed that increases in depressive symptoms should most likely occur when vulnerable people (those with certain insecure attachment orientations) experience stressors that test and strain their relationships. Such experiences can increase depressive symptoms by enhancing negative beliefs about the self (as being someone unworthy of love and support) or by accentuating negative beliefs about others (as being unloving and unsupportive partners). Greater attachment security, in contrast, should serve as an inner resource that facilitates adjustment to stressful life events and buffers secure individuals from experiencing depressive symptoms (Mikulincer & Florian, 1998).

Research shows that insecurely attached people are, in fact, more prone to depression and depressive symptoms. In studies in which attachment has been assessed with the Adult Attachment Interview (AAI; Main & Goldwyn, 1994), unipolar depression tends to be more prevalent among psychiatric patients classified as *preoccupied* (a category conceptually related to the anxiety–ambivalence attachment dimension) than among patients classified as *secure* (Cole-Detke & Kobak, 1996; Fonagy et al., 1996; Rosenstein & Horowitz, 1996). It also is more common in persons classified as *dismissive* on the AAI (a category conceptually related to the avoidance attachment dimension) than in those classified as secure (Patrick, Hobson, Castle, Howard, & Maughan, 1994).[1]

Depression and depressive symptoms are also more prevalent in people who report being more insecure on self-report romantic attachment scales. Avoidant and anxious–ambivalent persons, for instance, score higher on a *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.; American Psychiatric Association, 1980) measure of major depressive episodes than do secure people (Mickelson, Kessler, & Shaver, 1997). As a rule, anxious–ambivalent persons report the highest levels of depressive symptoms, secure individuals the lowest, and avoidant persons fall in between (Cooper, Shaver, & Collins, 1998). Similar effects have been reported for young women making the transition from high school to adult life (Burge, Hammen, Davila, & Daley, 1997; Hammen et al., 1995). Viewed together, these studies indicate that people with insecure attachment orientations—particularly those who are preoccupied or anxious–ambivalent—are at increased risk for depressive symptomatology.

Some research also has suggested that insecurely attached women may be more vulnerable to depressive symptoms than insecurely attached men (cf. Lewinsohn, Hoberman, & Rosen-

[1] Depression also tends to be more prevalent in persons classified as "earned" secure on the AAI (i.e., those who had to overcome adverse childhood experiences with their attachment figures en route to becoming secure; Pearson, Cohn, Cowan, & Cowan, 1994).

baum, 1988). Women with preoccupied–ambivalent or fearful–avoidant attachment styles, for example, are particularly vulnerable to depression (Carnelley, Pietromonaco, & Jaffe, 1994; Hammen et al., 1995). These studies have suggested that women who have insecure attachment styles—particularly highly preoccupied–ambivalent women—may be highly vulnerable to the onset of depressive symptoms during major life stressors (see also Anderson, Beach, & Kaslow, 1999).

### *Ambivalent Women*

Bowlby (1988, pp. 176–177) proposed that highly ambivalent women who perceive that their husbands are unsupportive across the transition to parenthood should experience increases in depressive symptoms. Highly ambivalent people value close relationships a great deal (Hazan & Shaver, 1987) and tend to base their self-concepts largely on the quality of their current relationships (see Crocker & Wolfe, 2001). Consequently, they should feel dejected if they perceive their current attachment figures are not giving them the comfort and support they need or expect**,** especially when major life stressors "test" their relationships. To complicate matters, the working models of highly ambivalent people contain two elements that should undermine their perceptions of spousal support: (a) unrelenting worries that attachment figures might not be available and supportive when needed and (b) lingering feelings of resentment toward attachment figures, both of which should originate from inadequate or unpredictable support in the past. These elements should cause highly ambivalent persons to view their partners as less supportive than they actually are or potentially could be. Over time, perceptions of low or declining support during stressful situations should predict poorer perceived relationship outcomes in highly ambivalent people, exacerbating their depressive symptoms. Highly ambivalent people, therefore, face a difficult dilemma: They crave support and are unhappy without it but, because of their working models, they also perceive that the support available to them is inadequate.

According to attachment theory, contextual factors affect the degree to which the attachment system is activated and, thus, the extent to which working models affect social perceptions and behavior. Bowlby (1969) proposed that the attachment system is activated by stress and the absence or unavailability of one's attachment figure. Because wives typically experience greater stress than their husbands during the first few months after childbirth (mainly because of gestation, childbirth, and early child-care responsibilities; Oakley, 1980) and thus often need support, the working models of highly ambivalent women should be susceptible to activation during the transition period. If highly ambivalent women enter parenthood confident that their husbands will be available and supportive, their working models should be less activated and, therefore, should have less impact on their perceptions and behavior (e.g., the resentment contained in their working models should be tied less directly to their spouses, and they should be less aware of personal feelings of inadequacy; Anderson et al., 1999). Conversely, if highly ambivalent women perceive their spouses are unavailable and unsupportive, their working models should become activated and more influential. Significant increases in postnatal depressive symptoms, therefore, should be most evident in highly ambivalent women who perceive less spousal support and greater spousal anger on entering the transition to parenthood.[2]

The above reasoning suggests a specific mediation model, which is shown in Figure 1. First, highly ambivalent women who perceive low levels of spousal support before birth should perceive even less support 6 months after the birth of their infant. Pre-to-postnatal increases in depressive symptoms in highly ambivalent women who enter parenthood perceiving low levels of spousal support should be a reaction to perceived declines in spousal support across the transition period. Perceptions of declining spousal support should, therefore, at least partially mediate the association between ambivalence and increases in depressive symptoms.

Prenatal perceptions of the spouse should also predict the degree to which depressive symptoms remain stable (either high or low) across the transition period. Attachment theorists (Bowlby, 1988; Hazan & Shaver, 1994) have conjectured that perceptions of relationship problems are more likely to cause highly ambivalent people to develop depressive symptoms than less ambivalent people. We suggest that perceptions of relationship problems may also maintain depressive symptoms once they develop. Thus, we hypothesize that when highly ambivalent women show depressive symptoms, their symptoms will remain constant over time or increase if they perceive their relationships are functioning poorly (cf. Crocker & Wolfe, 2001). For highly ambivalent women, then, the link between prenatal and postnatal depressive symptoms (i.e., the temporal stability of their depression scores) should be partially mediated by their prenatal perceptions of their spouse and marriage. For less ambivalent women, whose well-being is based less exclusively on relationship perceptions, factors other than relationship perceptions should affect their depressive symptoms (e.g., work, leisure activities, involvement in organizations). Hence, for less ambivalent women, the link between prenatal and postnatal depressive symptoms should not be mediated by relationship perceptions per se.

### *Avoidant Women*

Although some studies have found that fearful–avoidant and dismissive persons are more susceptible to depression (Carnelley et al., 1994; Patrick et al., 1994), prenatal perceptions of spousal support and women's avoidance should not interact to predict changes in depressive symptoms across the transition period. Highly avoidant people value independence and emotional self-sufficiency, and they actively distance themselves from others when distressed (Crittenden & Ainsworth, 1989; Dozier & Kobak, 1992; Simpson et al., 1992). In stressful situations such as the transition to parenthood, therefore, highly avoidant women should not perceive low levels of spousal support, and they may not even realize when support is deficient. More important, even if highly avoidant women perceive that support is lacking, such perceptions should not trigger increased postnatal depressive symptoms because, unlike ambivalent people, highly avoidant people do not rely heavily on positive perceptions of their partners or relationships to sustain or enhance their well-being (Hazan & Shaver, 1994).

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[2] Perceptions of greater spousal anger should reflect poorer support, particularly during difficult life circumstances that call for support (Rholes, Simpson, & Oriña, 1999). Thus, perceptions of spousal anger and support should correlate negatively.

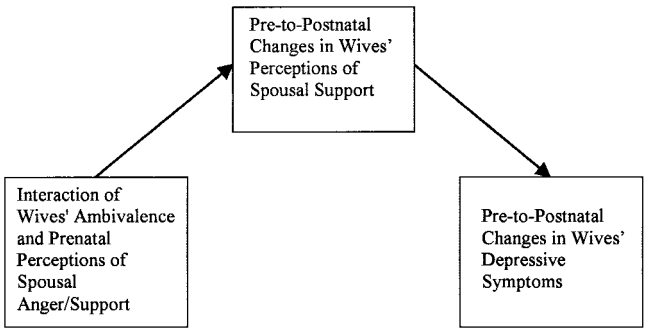


*Figure 1.* The general mediated moderation model.

## The Present Research

Because women usually experience more stress than men during the early months of the transition period (Oakley, 1980) and because Bowlby (1988) hypothesized about postpartum depressive changes in women, the present study focused on depressive symptoms in wives.

According to Bowlby (1980, 1988), prenatal perceptions of spousal anger and emotional support should play central roles in promoting changes in depressive symptoms, particularly among highly ambivalent women. Optimal caregiving entails the presence (or perception) of certain positive actions (e.g., partners being emotionally supportive, responsive, and available to one's needs) as well as the absence of certain negative actions (e.g., anger, which is a direct way of conveying rejection when partners are distressed; Rholes, Simpson, & Oriña, 1999). Indeed, Ainsworth et al. (1978) found that mothers who were unsupportive and angry when their children sought comfort from them were more likely to have insecure children.

Prenatal perceptions of low or declining emotional support and high or escalating anger from spouses during the transition period should be construed by highly ambivalent women as evidence that their husbands might not be responsive to their needs after childbirth and, perhaps, cannot be trusted to be available for future support in general (see Bowlby, 1969; Holmes & Rempel, 1989; Simpson, Ickes, & Grich, 1999). Prenatal skepticism should render highly ambivalent women hypervigilant to signs of deficient support or heightened anger following childbirth (cf. Cassidy & Berlin, 1994). Although such women might behave in ways during the postpartum period that encourage their husbands to provide less support or to display greater anger (see Anderson et al., 1999), the working models of highly ambivalent women who enter the transition with negative spousal perceptions should be partly responsible for generating perceived declines in spousal support and increases in spousal anger en route to experiencing heightened depressive symptoms (Collins & Allard, 2001). More specifically, the working models of these women should direct their attention to, and lead them to worry about, subtle cues that their spouses might be providing inadequate support or are withdrawing from the relationship.

In the present study, wives and their husbands completed self-report measures approximately 6 weeks before the birth of their first child (at Time 1) and again approximately 6 months after delivery (at Time 2). At Time 1, women reported their attachment orientations, their perceptions of the amount of support available from their husbands, their perceptions of the amount of anger their husbands directed at them, their marital satisfaction, and their levels of depressive symptoms. Husbands at Time 1 reported their attachment orientations, their perceptions of how supportively they behaved toward their wives, their perceptions of the amount of anger they directed at their wives, and their marital satisfaction. At Time 2, both spouses provided the same information and completed a few additional follow-up measures. Husbands at Time 2 also made dispositional ratings of their wives' dependency and emotional stability during the postnatal period.

On the basis of attachment theory (Bowlby, 1973, 1980), Bowlby's (1988) conjectures about the origins of postnatal depression, and previous postnatal depression research, we derived five hypotheses:

*Hypothesis 1:* Highly ambivalent women who perceive their husbands are directing more anger toward them at Time 1 should experience pre-to-postnatal increases in depressive symptoms. Specifically, the interaction between women's Time 1 ambivalence and Time 1 perceptions of anger should predict changes in their depressive symptoms from Time 1 to Time 2.

*Hypothesis 2:* Highly ambivalent women who perceive their husbands are less supportive at Time 1 should experience pre-to-postnatal increases in depressive symptoms. That is, the interaction between women's Time 1 ambivalence and Time 1 perceptions of spousal support should predict changes in their depressive symptoms from Time 1 to Time 2.

*Hypothesis 3:* In contrast to ambivalence, no significant interactions should emerge involving women's avoidance and their Time 1 perceptions of either spousal anger or support predicting changes in depressive symptoms (for the reasons discussed above).

*Hypothesis 4:* As described in Figure 1, associations between the interaction terms discussed in Hypotheses 1 and 2 and pre-to-postnatal changes in depressive symptoms should be mediated by pre-to-postnatal changes in wives' perceptions of their husbands' level of support. Specifically, highly ambivalent women who harbor more negative perceptions of spousal support at Time 1 should experience pre-to-postnatal changes in depressive symptoms as mediated through perceptions that their husbands provided decreasing support from Time 1 to Time 2.

*Hypothesis 5:* To the extent that highly ambivalent women are more strongly affected by relationship perceptions (as discussed above), we hypothesized that, for highly ambivalent women, perceptions of spousal anger and support should play a larger role in maintaining depressive symptoms (at either high or low levels) across the transition period. Specifically, for highly ambivalent women (i.e., those scoring above the median), the relation between their prenatal and postnatal depression scores should be partially mediated by how they perceive their spouses and marriages on entering the transition to parenthood (at Time 1). For less ambivalent women (i.e., those scoring below the median), either no or very weak mediation should be found.

## Method

### *Participants*

One hundred six married couples residing in a Southwestern U.S. city, all of whom were expecting their first child, completed both the Time 1 and the Time 2 testing sessions. Seven additional couples completed the Time 1 session but not the Time 2 session. Six of these couples had moved away and 1 had separated between the two sessions. Couples were recruited from childbirth preparation classes offered by a local hospital and were paid $50 to participate. The mean age of women and men was 28.0 years ($SD$ = 4.3) and 29.0 years ($SD$ = 5.5), respectively. The mean length of marriage was 3.8 years ($SD$ = 2.5).

### *Procedures*

Couples were first contacted during an early meeting of a childbirth course. An experimenter explained the study, and couples were enlisted. Approximately 6 weeks prior to their due date (at Time 1), both spouses in each couple completed several self-report scales after class, privately and without consulting one another. Approximately 6 months after childbirth (at Time 2), both partners completed a second set of self-report measures mailed to their homes. Spouses were instructed to complete the measures privately and not to consult one another. Each spouse's questionnaire packet was mailed directly to the study coordinator (i.e., wives' and husbands' packets were returned in separate envelopes).

Each packet contained scales that assessed participants' attachment orientations (toward romantic partners in general) and their level of depressive symptoms. Wives also completed inventories assessing how supportive they perceived their husbands were and how often their husbands behaved angrily toward them. Husbands completed parallel scales that assessed how available they thought they were as sources of support for their wives and how often they thought they behaved angrily toward their wives. Measures of marital satisfaction and neuroticism were also gathered for both husbands and wives. Unless otherwise noted, participants completed all scales at both time periods.

### *Measures*

Ambivalence and avoidance were measured by the Adult Attachment Questionnaire (Simpson, Rholes, & Phillips, 1996). Participants responded to this measure according to how they thought and felt about romantic partners in general, including (but not limited to) their spouses. Sample items from the Avoidance scale are "I don't like people getting too close to me" and "I'm nervous whenever anyone gets too close to me." Sample items from the Ambivalence scale include "Others often are reluctant to get as close as I would like" and "I am confident that my partner(s) love me just as much as I love them" (reverse scored). These items were answered on 7-point scales from 1 (*strongly disagree*) to 7 (*strongly agree*). There are eight avoidance and nine ambivalence items on the Adult Attachment Questionnaire; thus, scores can range from 8 to 56 for Avoidance, and from 9 to 63 for Ambivalence. Cronbach's alphas for the Avoidance scale were .79 and .82 for men and women at Time 1 and .78 and .82 at Time 2. Higher scores indicate greater ambivalence and avoidance. Alphas for the Ambivalence scale were .74 and .81 for men and women at Time 1 and .80 and .86 at Time 2. Both of these valid scales correlate highly with other corresponding adult attachment scales that tap these same two dimensions (see Griffin & Bartholomew, 1994).

A version of the Social Provisions Scale (Cutrona, 1984) was used to assess wives' perceptions of the degree to which their husbands were supportive. Sample items are "Can you depend on your husband to help you if you really need it?"; "Does your relationship with your husband provide you with a sense of emotional security and well-being?"; and "If something went wrong, do you feel that your husband would *not* come to your assistance?" (reverse scored). Items were answered on 3-point scales (1 = *no*, 2 = *sometimes*, 3 = *yes*). Scores can range from 12 to 36. Higher scores reflect greater perceived support. Cronbach's alphas were .83 and .88 at Times 1 and 2. The Social Provisions Scale was adapted to measure husbands' perceptions of their availability to their wives as sources of support. Husbands answered the same questions with the wording changed to reflect their self-perceptions (e.g., "Can your wife depend on you to help her if she really needs it?"). Cronbach's alphas for this measure at Times 1 and 2 were .68 and .81, respectively.

Husbands' frequency of angry behavior was measured by the Test of Negative Social Exchange (Finch, Okum, Pool, & Ruehlman, 1999). Typical items ask men to indicate how frequently (in the past month) they lost their temper with, got angry with, were rude to, yelled at, nagged, and were insensitive to their wives. Items on this scale were answered on 9-point scales from 1 (*not at all*) to 9 (*frequently*). Scores can range from 24 to 216. Higher scores indicate greater anger. Cronbach's alphas were .95 and .96 at Times 1 and 2. Women completed a modified version of this scale. The wording of the items was altered so the questions asked about wives' perceptions of the amount of anger their husbands directed at them. Cronbach's alphas for this modified scale were .96 and .97 at Times 1 and 2.

Depressive symptoms were measured by the Center for Epidemiologic Studies–Depression Scale, which was developed for use with normal populations (see Radloff & Teri, 1986). Participants indicated how often they felt a certain way during the past week. Sample items include "I was bothered by things that usually didn't bother me," "I had crying spells," "I felt hopeful about the future" (reverse scored), "I thought my life had been a failure," "I felt depressed," "I felt sad," and "I could not get 'going.'" Items were measured on 4-point scales from 1 (*rarely or none of the time [less than 1 day]*) to 4 (*most or all of the time [5–7 days]*). Scores can range from 20 to 80. Higher scores reflect more depressive symptoms.

For exploratory purposes, we also measured the dispositional ratings that husbands made for their wives' behavior following childbirth (at Time 2 only). Husbands at Time 2 completed a four-item dispositional rating measure created for this project. On 7-point Likert-type scales, men reported the extent to which they viewed their wives as emotionally stable versus unstable, mature versus immature, self-reliant versus excessively needy, and (emotionally) strong versus (emotionally) weak. Scores can range from 4 to 28. Higher scores indicate more negative ratings. This scale was reliable ($\alpha$ = .80).

To determine whether our hypothesized results might be attributable to variance shared with marital satisfaction or changes in marital satisfaction, participants also completed the Satisfaction subscale of Spanier's Dyadic Adjustment Scale (Spanier, 1976). Sample items are "Do you regret that you ever married?" and "How often do you discuss or have you considered divorce, separation, or terminating your relationship?" Items were answered on 6-point scales from 1 (*all the time*) to 6 (*never*). Hence, scores can range from 10 to 60. Higher scores reflect greater satisfaction. Cronbach's alphas for this scale were .78 and .87 at Times 1 and 2 for men and .84 and .90 for women.

Finally, to discern whether our results could be due to variance shared with neuroticism, which correlates with both ambivalence (Shaver & Brennan, 1992) and marital satisfaction (Karney & Bradbury, 1997), participants also completed Goldberg's (1990) Neuroticism Scale. Each adjective (e.g., *volatile*, *nervous*, *emotional*, *demanding*) was responded to on a 5-point scale from 1 (*I strongly agree*) to 5 (*I strongly disagree*). Scores can range from 20 to 100. This measure was administered only at Time 1. The mean for men was 71.47 ($SD$ = 12.17); for women, it was 68.58 ($SD$ = 10.82). Higher scores indicate more neuroticism. Cronbach's alpha was .89 for men and .87 for women.

## Results

### *Preliminary Analyses*

Tests for differences between Time 1 and Time 2 means for wives and husbands on the major variables indicated that the transition to parenthood was difficult for many people (see Table

1). For the sample as a whole, wives perceived significant declines in spousal support and increases in spousal anger across the transition. Husbands perceived providing significantly less support across the transition, but they did not perceive displaying significantly greater anger. Neither husbands nor wives reported significant changes in depressive symptoms.

Table 2 presents correlations between the variables assessed at Time 1. As shown on the diagonal of Table 2, spouses' perceptions of husbands' levels of anger and support were significantly correlated, providing some evidence for the validity of these perceptions. Perceptions of husbands' levels of prenatal support were associated with perceptions of greater anger (reported by both spouses) and more depressive symptoms (reported by both spouses).

Table 3 presents correlations between men's and women's attachment scores and the variables assessed at Time 1. More ambivalent men reported providing less support and having more depressive symptoms. More avoidant men reported displaying more anger, being less supportive, and having more depressive symptoms. Men's attachment scores were not significantly correlated with any of their wives' reports or perceptions. More ambivalent and more avoidant women perceived greater spousal anger, perceived less support, and reported having more depressive symptoms. Aside from men's reports of depression, women's attachment scores did not correlate significantly with their husbands' reports or perceptions.[3]

Further analyses revealed that the ambivalence and avoidance attachment dimensions (assessed at Time 1) were correlated modestly within each sex. Greater ambivalence was associated with more avoidance in both men ($r = .19$, $p < .05$) and women ($r = .33$, $p < .01$). Correlations between spouses (i.e., within couples) revealed only one significant effect: Husbands' avoidance was positively correlated with their wives' ambivalence ($r = .22$, $p < .05$).

Table 1
*Prenatal (Time 1) to Postnatal (Time 2) Mean Changes*

| Variable | Time 1 | Time 2 | *t* test[a] |
|---|---|---|---|
| Women's depression | | | 1.41 |
| *M* | 31.60 | 30.43 | |
| *SD* | 7.65 | 8.47 | |
| Men's depression | | | 0.25 |
| *M* | 29.29 | 29.11 | |
| *SD* | 7.87 | 8.13 | |
| Women's perceptions of husbands' support | | | 4.02** |
| *M* | 33.13 | 31.95 | |
| *SD* | 2.98 | 4.15 | |
| Women's perceptions of husbands' anger | | | −5.33** |
| *M* | 54.99 | 66.51 | |
| *SD* | 28.66 | 37.91 | |
| Men's perceptions of their anger | | | −1.46 |
| *M* | 61.23 | 65.30 | |
| *SD* | 27.91 | 31.77 | |
| Men's perceptions of their support | | | 2.73** |
| *M* | 32.90 | 32.18 | |
| *SD* | 2.41 | 2.97 | |
| Women's satisfaction | | | 5.21** |
| *M* | 42.03 | 39.52 | |
| *SD* | 4.75 | 6.69 | |
| Men's satisfaction | | | 4.96** |
| *M* | 41.91 | 40.17 | |
| *SD* | 4.13 | 5.59 | |

*Note.* $N = 106$ couples (106 men and 106 women).
[a] *df* for each *t* test = 104.
** $p < .01$.

Table 2
*Correlations Between the Main Variables at Time 1 (Prenatally)*

| Variable | 1 | 2 | 3 |
|---|---|---|---|
| 1. Perceptions of anger | **.34**** | −.71** | .44** |
| 2. Perceptions of support | −.34** | **.41**** | −.49** |
| 3. Depression | .28** | −.38** | **.21**** |

*Note.* Correlations among the variables for husbands appear below the diagonal; those for wives appear above the diagonal. The values on the diagonal (in bold) are correlations between measures from each partner (e.g., the correlation between husbands' reports of anger and wives' perceptions of their husbands' anger).
** $p < .01$.

## *Primary Analyses*

Our hypotheses were tested using hierarchical regression methods. These analyses were complicated by two factors. First, spouses' avoidance scores were significantly correlated. Second, husbands' and wives' own ambivalence and avoidance scores were significantly correlated. To adjust for this covariation, three control variables—men's ambivalence and avoidance and women's avoidance—were partialed before the effects of women's ambivalence were tested in all of analyses described below. For tests involving women's avoidance, the control variables were men's avoidance and ambivalence and women's ambivalence. All predictor variables were centered before conducting the analyses (Aiken & West, 1991), and all significant effects that emerged for the two attachment dimensions are reported. As predicted, all of the significant effects for women were confined to ambivalence and relationship perceptions.[4]

*Ambivalence and anger.* The first regression analysis, which tested Hypothesis 1, focused on women's prenatal attachment orientations, women's prenatal perceptions of their husbands' anger, and pre-to-postnatal changes in women's depression. In this

[3] None of the Time 1 variables were significantly correlated with length of marriage. Some prior research (e.g., Simpson et al., 1992) has found that men's attachment orientations predict how they behave toward their romantic partners. In the current study, men's attachment orientations were not correlated with perceptions of their behavior, at least according to wives' reports. Unlike the present study, most past research has examined how acute stressors affect attachment-relevant behaviors in dating relationships when norms for expected behaviors are less clear. The strong social role expectations for being a supportive husband may have constrained or overridden the modal attachment behavioral tendencies in many men.

[4] In a different project based on this data set, Rholes, Simpson, Campbell, and Grich (2001) examined changes in marital satisfaction across the transition to parenthood as a function of attachment orientations. Internal analyses revealed that all of our hypothesized effects for changes in depressive symptoms (see the introduction of this article) remained statistically significant when both prenatal marital satisfaction and changes in marital satisfaction were controlled. The findings for changes in depressive symptoms reported here, therefore, are both novel and independent of marital satisfaction.

Table 3
*Correlations Between Attachment Orientations and All Variables at Time 1 (Prenatally)*

| | Men | | Women | |
|---|---|---|---|---|
| Variable | Ambivalence | Avoidance | Ambivalence | Avoidance |
| Perceptions of anger | | | | |
| Reported by men | −.04 | .20* | .10 | .01 |
| Reported by women | .12 | .12 | .43** | .34** |
| Perceptions of support | | | | |
| Reported by men | −.26** | −.25** | −.11 | −.13 |
| Reported by women | −.05 | −.11 | −.42** | −.26** |
| Depression | | | | |
| Reported by men | .29** | .27** | .10 | .20* |
| Reported by women | −.03 | .09 | .41** | .40** |
| Satisfaction | | | | |
| Reported by men | −.35** | −.25** | −.24* | −.31** |
| Reported by women | −.26** | −.18 | −.36** | −.40** |
| Neuroticism | | | | |
| Reported by men | −.30** | −.14 | .01 | −.10 |
| Reported by women | −.02 | −.06 | −.29** | −.16 |

*Note.* $N = 106$ couples (106 men and 106 women).
* $p < .05$. ** $p < .01$.

analysis, women's Time 1 depression scores were entered as the first variable in the regression equation. Partialing Time 1 depression scores in Step 1 of each analysis allowed a test of Time 1 to Time 2 changes in depression. The next variables entered in Step 2 were men's and women's ambivalence and avoidance scores. Men's avoidance and ambivalence scores and women's avoidance scores were entered to control for possible covariation between men's and women's attachment orientations. Women's perceptions of their husbands' prenatal anger were entered at Step 3. In Step 4, the two-way interactions between women's perceptions of anger and their ambivalence and avoidance scores were entered. In the last step, the three-way interaction involving women's prenatal depression, prenatal ambivalence, and prenatal perceptions of anger was entered.

This analysis revealed that more ambivalent women became more depressed across the transition period (from Time 1 to Time 2), $F(1, 100) = 12.99$, $p < .01$ ($\beta = .33$), as did women who perceived greater prenatal spousal anger, $F(1, 99) = 12.74$, $p < .01$ ($\beta = .33$). Women's avoidance did not significantly predict changes in depressive symptoms. Supporting Hypothesis 1, a significant interaction involving women's ambivalence and their prenatal perceptions of spousal anger was found, $F(1, 97) = 5.11$, $p < .05$ ($\beta = .27$). As shown in Figure 2, less ambivalent women who perceived greater prenatal anger experienced little change in depressive symptoms over time. Highly ambivalent women who perceived more prenatal anger, however, became more depressed across the transition, whereas less ambivalent women who perceived more anger did not. Simple effects tests confirmed that the high anger regression line depicted in Figure 2 was significantly different from zero, $t(97) = 5.74$, $p < .001$, whereas the low anger regression line was not, $t(97) = -.37$, *ns*.[5] As expected, the three-way interaction between women's prenatal depression, prenatal ambivalence, and prenatal perceptions of spousal anger was not significant. Thus, the significant two-way interaction between women's prenatal ambivalence and perceived anger reported above did not vary as a function of women's prenatal level of depressive symptoms. In line with Hypothesis 3, the interaction between avoidance and perceived anger was not significant.[6]

We speculated that the working models of highly ambivalent women may be partly responsible for increases in perceived spousal anger across the transition. To determine whether highly ambivalent wives perceived their husbands as directing greater anger toward them than their husbands reported displaying, we calculated residualized scores of wives' Time 2 perceptions of anger, controlling for the amount of Time 2 anger their husbands reported

[5] To clarify the direction and magnitude of changes in depressive symptoms, we first calculated the residuals of women's Time 2 depressive symptoms with their Time 1 symptoms partialed. These scores reflect changes in depressive symptoms from Time 1 to Time 2. We then divided women's scores on prenatal ambivalence and prenatal perceptions of husbands' anger at the median and calculated mean residualized change scores for each group. Positive values reflect increases in depressive symptoms over time, and negative values reflect decreases. Women who scored above the median on both prenatal ambivalence and perceived anger reported increases in depressive symptoms ($M = 3.37$), women who scored below the median on both measures reported declines ($M = -3.97$), and women who scored above the median on ambivalence and below the median on perceived anger ($M = -.10$) or below the median on ambivalence and above the median on perceived anger ($M = .65$) reported virtually no change. The standard deviation of this residualized measure was 7.61, indicating that the means for the women in the high ambivalence/high anger and low ambivalence/low anger groups differed on average by nearly 1 standard deviation. These results are noteworthy because they show that (a) changes in depressive symptoms occurred in both directions (i.e., up and down), (b) the high ambivalent/high anger group experienced the largest increases (as predicted), and (c) the relative size of these effects is not small. These results explain why the average level of depression in the entire sample did not change significantly from Time 1 to Time 2. A similar pattern emerged when prenatal perceptions of spousal support replaced perceptions of spousal anger.

[6] An analysis involving husbands' perceptions of the prenatal anger they displayed toward their wives revealed that women became more depressed when their husbands reported greater anger, $F(1, 99) = 6.49$, $p < .05$ ($\beta = .22$). No other significant effects, however, were found for men's self-perceived behaviors in any of the other analyses reported below. Thus, men's self-perceived behaviors are not mentioned below.

providing. We then correlated these scores with wives' Time 1 ambivalence. This correlation ($r = .32$, $p < .01$) indicated that more ambivalent wives perceived significantly greater anger than would be expected on the basis of their husbands' perceptions of the anger they displayed, whereas less ambivalent wives perceived relatively less anger. The correlation remained significant when wives' levels of avoidance were statistically controlled. This suggests that the dubious working models of highly ambivalent women may be partly responsible for their perceptions of elevated spousal anger and that the benevolent working models of less ambivalent women might partly account for their perceptions of lower spousal anger.

*Ambivalence and support.* The next analysis, which tested Hypothesis 2, was similar to the first one except that women's prenatal perceptions of spousal support replaced their perceptions of spousal anger in Step 3 of the regression equation. As predicted, a significant interaction emerged between ambivalence and perceived prenatal support, $F(1, 97) = 4.16$, $p < .05$ ($\beta = -.23$). As shown in Figure 3, women who perceived greater prenatal support experienced little change in depressive symptoms, regardless of their level of ambivalence. Highly ambivalent women who perceived less prenatal support, in contrast, became more depressed over time, whereas less ambivalent women were less depressed. Simple effects tests indicated that the high support regression line depicted in Figure 3 was significantly different from zero, $t(97) = 3.58$, $p < .01$, whereas the low support regression line was not, $t(97) = 1.06$, *ns*.[7] In accord with Hypothesis 3, the interaction between avoidance and perceived support was not significant.

The working models of highly ambivalent women may also be partly responsible for declines in perceived spousal support. To test this possibility, we calculated residualized scores of wives' Time 2 perceptions of support, controlling for the amount of Time 2 support their husbands reported providing. We then correlated these scores with wives' Time 1 ambivalence. The resulting correlation ($r = -.54$, $p < .01$) revealed that more ambivalent wives perceived significantly less support than would be expected on the basis of their husbands' perceptions of support offered, whereas less ambivalent wives perceived relatively more support. This correlation remained significant when wives' level of avoidance was statistically controlled. Similar to perceptions of anger, these results suggest that the working models of highly ambivalent women might also be partially responsible for perceptions of deficient spousal support (cf. Rholes et al., 2001).

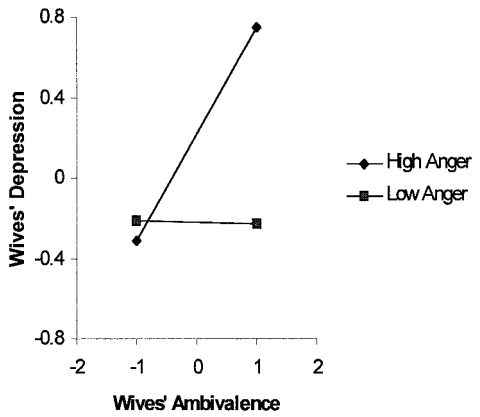


*Figure 2.* The interaction of ambivalence and prenatal perceptions of spousal anger predicting changes in depressive symptoms for women. The variables are centered. Regression lines are plotted for women scoring 1 standard deviation above and below the sample means on ambivalence and perceived anger.

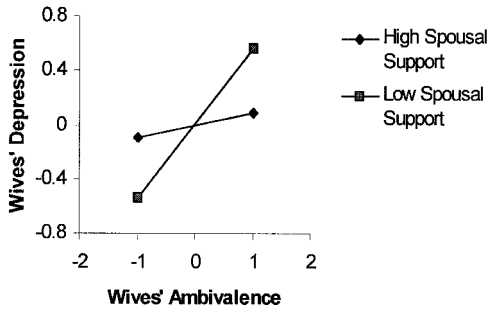


*Figure 3.* The interaction of ambivalence and prenatal perceptions of spousal support predicting changes in depressive symptoms for women. The variables are centered. Regression lines are plotted for women scoring 1 standard deviation above and below the sample means on ambivalence and perceived support.

*Discriminant validity.* Next, we conducted discriminant validity analyses to control several potential confounds: wives' levels of prenatal neuroticism, wives' levels of prenatal marital satisfaction, pre-to-postnatal changes in wives' marital satisfaction, the interaction between prenatal neuroticism and both perceived spousal support and anger, and the interaction between prenatal satisfaction and both perceived support and anger. Measures of neuroticism and satisfaction tend to correlate with depression (Gotlib & Hooley, 1988; Karney & Bradbury, 1997) and attachment scales. In the first analysis, women's prenatal scores on neuroticism along with the interactions between neuroticism and perceptions of spousal support and anger were partialed prior to testing the interactions reported in Figures 2 and 3. The interactions depicted in these figures remained significant (both $p$s $< .05$). In the second analysis, women's prenatal marital satisfaction scores along with the interactions between satisfaction and perceptions of spousal support and anger were partialed prior to testing these interactions. Once again, the interactions shown in the figures remained significant (both $p$s $< .05$). In the final analysis, pre-to-postnatal changes in women's marital satisfaction were partialed. The interactions remained either significant ($p < .05$) or marginally significant ($p < .06$). Moreover, neither of the interactions between women's ambivalence and their prenatal neuroticism or prenatal marital satisfaction was significant. In sum, prenatal neuroticism, prenatal marital satisfaction, and changes in marital satisfaction (a) are statistically independent of the interactions reported above and

[7] We also tested whether highly ambivalent wives who perceived less prenatal support were more likely to manifest depressive symptoms if they were married to highly avoidant or highly ambivalent men. No significant effects were found.

(b) do not interact with ambivalence as do perceptions of prenatal spousal anger and support.[8]

*Mediated moderation.* To test Hypothesis 4, we followed the recommendations for mediated moderation tests outlined by Baron and Kenny (1986). Because highly ambivalent women should be obsessed with losing spousal support, especially in times of need, we predicted that women's pre-to-postnatal declines in perceived spousal support should mediate links between the two prenatal interaction effects reported above and increases in depressive symptoms. More specifically, we tested whether pre-to-postnatal changes in wives' perceptions of their husbands' support mediated relations between (a) the significant Prenatal Ambivalence × Anger and Prenatal Ambivalence × Support interaction terms and (b) wives' pre-to-postnatal changes in depressive symptoms. All of the requirements for mediation were met for both potential mediators.

The first set of analyses focused on the interaction of women's prenatal ambivalence and their prenatal perceptions of spousal anger. As presented in Figure 4, the interaction involving women's ambivalence and prenatal perceptions of spousal anger predicted significant pre-to-postnatal declines in perceptions of support ($\beta = -.21$), $t(101) = 2.69$, $p < .01$.[9] Declines in spousal support, in turn, predicted significant pre-to-postnatal increases in depressive symptoms ($\beta = -.37$), $t(100) = 4.92$, $p < .01$. Finally, the association between the interaction of women's ambivalence and their prenatal perceptions of spousal anger no longer predicted increases in depressive symptoms when change in perceived support (the mediator) was partialed ($\beta = .09$, *ns*; Sobel's $z = 2.01$, $p < .05$).

The second set of analyses tested the interaction involving wives' prenatal ambivalence and their perceptions of prenatal support. As depicted in Figure 5, the interaction of women's prenatal ambivalence and perceptions of spousal support predicted significant pre-to-postnatal declines in perceived support ($\beta = .18$), $t(101) = 2.29$, $p < .05$.[10] Declines in spousal support, in turn, predicted significant pre-to-postnatal increases in depressive symptoms ($\beta = -.43$), $t(100) = 5.80$, $p < .01$. Finally, the relation between the prenatal interaction of women's ambivalence and perceptions of spousal support no longer predicted increases in depressive symptoms once change in perceived support was partialed ($\beta = -.11$, *ns*; Sobel's $z = 2.15$, $p < .05$).[11] In sum, both sets of mediated moderation analyses support Hypothesis 4.[12]

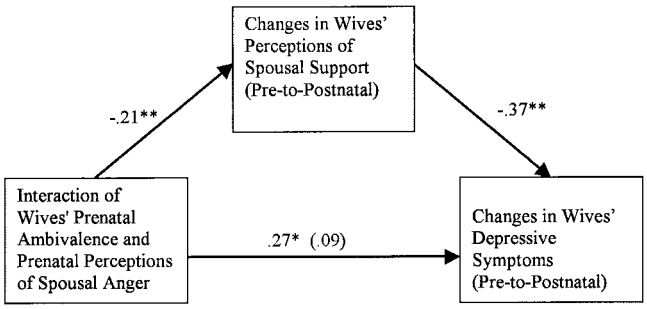


*Figure 4.* The mediated moderation model of the relation between the interaction of prenatal ambivalence and spousal anger predicting pre-to-postnatal changes in depressive symptoms through pre-to-postnatal changes in perceived spousal support in women. The beta in parentheses (.09) is the relation between the prenatal interaction term and changes in depressive symptoms, controlling for the mediator. *$p < .05$. **$p < .01$.

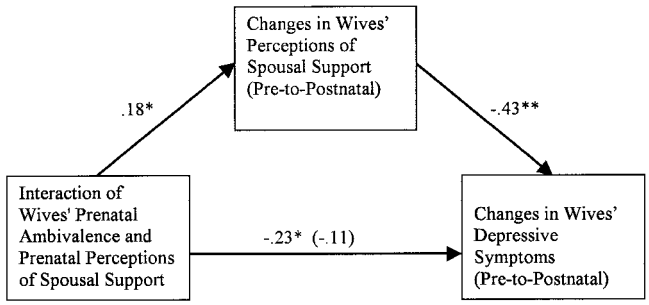


*Figure 5.* The mediated moderation model of the relation between the interaction of prenatal ambivalence and spousal support predicting pre-to-postnatal changes in depressive symptoms via pre-to-postnatal changes in perceived spousal support in women. The beta in parentheses (−.11) is the relation between the prenatal interaction term and changes in depressive symptoms, controlling for the mediator. *$p < .05$. **$p < .001$.

*Husbands' perceptions of wives' dispositions.* The mediated moderation results further emphasize the importance of high levels of spousal support to the well-being of highly ambivalent women. Unfortunately, as shown in Table 3**,** more ambivalent women tended to perceive significantly less support from their husbands than did less ambivalent women. There are three possible explanations for this finding: (a) The husbands of highly ambivalent women may actually provide less support, (b) highly ambivalent

[8] We also conducted analyses to test whether depressive symptoms assessed at Time 1 predicted changes in women's ambivalence across the transition, either as a main effect or interacting with women's perceptions of prenatal spousal support or anger. None of these variables significantly predicted changes in ambivalence over time. This indicates that although ambivalence predicts changes in depressive symptoms in women, the reverse is not true. Greater ambivalence, therefore, appears to be a vulnerability factor for depressive symptoms, and it is not a consequence of being more depressed.

[9] The pattern of this interaction indicated that if women entered the transition perceiving less spousal anger, those who scored lower or higher on ambivalence did not report pre-to-postnatal declines in spousal support. A similar pattern of minimal or no decline characterized less ambivalent women who perceived greater prenatal anger. However, highly ambivalent women who perceived greater prenatal anger reported significant pre-to-postnatal declines in spousal support.

[10] The pattern of this interaction indicates that if women perceived greater prenatal spousal support, those who scored lower or higher on ambivalence did not report pre-to-postnatal declines in spousal support. A similar pattern of minimal or no decline was found for less ambivalent women who perceived lower prenatal support. However, highly ambivalent women who perceived less prenatal spousal support reported significant pre-to-postnatal declines in spousal support.

[11] Husbands' dispositional ratings did not, however, mediate the link between their wives' ambivalence and their own reports of anger. Further research needs to determine what motivates this aspect of husbands' behavior.

[12] We also tested two models to determine whether changes in depressive symptoms might have mediated links between the interactions involving women's prenatal ambivalence and their prenatal perceptions of both husbands' support and husbands' anger, predicting changes in women's perceptions of support across the transition period. Baron and Kenny's (1986) requirements for mediation were not met in either model, and Sobel's test was nonsignificant in both cases.

women may fail to perceive available support, or (c) both processes may occur jointly. We decided to explore the association between women's ambivalence and men's postnatal perceptions of the support they gave to their wives. Analyses indicated that at Time 1, even though highly ambivalent women perceived less support than did less ambivalent women, there was no correlation between women's ambivalence and men's Time 1 perceptions of the support they provided to their wives ($r = -.12$, *ns*). At Time 2, however, the husbands of more ambivalent women reported providing significantly less support than did the husbands of less ambivalent women, $F(1, 101) = 10.23$, $p < .01$ ($\beta = -.30$) (even controlling for husbands' attachment scores). Thus, although there was no association between women's level of ambivalence and their husbands' perceptions of support provision at Time 1, there was a significant association at Time 2. One possible explanation of this is that highly ambivalent women might behave in ways during the transition period that alienate their husbands and undermine their willingness or capacity to provide support (cf. Bowlby, 1973).

To explore this possibility, we conducted analyses examining whether negative ratings regarding their wives' dependency and emotional instability (assessed only at Time 2) might mediate the link between women's ambivalence and their husbands' Time 2 reports of support provision. We found that they did. Mediation analyses revealed that the relation between wives' ambivalence (assessed at Time 2) and their husbands' Time 2 perceptions of support became nonsignificant when the measure of husbands' dispositional ratings was partialed, $F(1, 100) = 3.19$, *ns* ($\beta = -.17$). Sobel's test confirmed that the link between women's heightened ambivalence and their husbands' lower reported postnatal support was partially mediated by their husbands' more negative dispositional ratings ($z = 2.45$, $p < .05$). This suggests that negative dispositional ratings surrounding issues of dependency may be one of the proximate psychological processes that lead men married to highly ambivalent women to withdraw support from them in the months after childbirth.

*Depression maintenance.* According to Hypothesis 5, the relation between prenatal and postnatal depressive symptoms should be partially mediated by perceptions of spousal support in highly ambivalent women but not necessarily in less ambivalent women. Thus, we performed a median split on wives' ambivalence scores and created groups of women scoring high versus low in ambivalence. For each group, the mediation models shown in Figures 6 and 7 were tested. These models examined whether the relation between women's depressive symptoms at Times 1 and 2 was mediated by women's perceptions of their spouses. A latent factor consisting of two variables—women's perceived spousal anger and perceived spousal support—served as the mediator. As shown in Figure 6, the latent factor significantly mediated the link between Time 1 and Time 2 depressive symptoms for highly ambivalent women, $\chi^2(2, N = 51) = 4.65$, $p = .09$ (comparative fit index [CFI] = .96; Sobel's $z = 4.21$, $p < .001$). That is, highly ambivalent women who displayed more depressive symptoms prenatally remained more depressed over time if they held more negative prenatal relationship perceptions. In contrast, as shown in Figure 7, the latent factor did not mediate the link between Time 1 and Time 2 depressive symptoms for less ambivalent women, $\chi^2(2, N = 55) = 4.41$, $p = .11$ (CFI = .93; Sobel's $z = 1.36$, *ns*). That is, contrary to highly ambivalent women, less ambivalent women who had more prenatal depressive symptoms did not remain more depressed because of having more negative prenatal relationship perceptions. In sum, these two mediation analyses support Hypothesis 5 by indicating that prenatal perceptions of the spouse play a stronger role in maintaining depressive symptoms in highly ambivalent women.

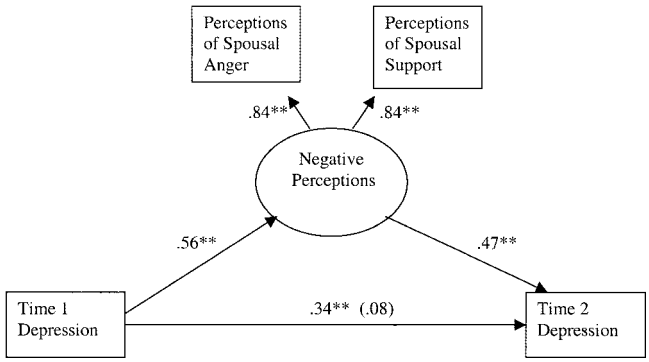


*Figure 6.* The mediation model for highly ambivalent women (scoring above the sample median). Perceptions of spousal support are reverse coded so that higher scores represent lower perceptions of support. The link between each indicator and the latent factor was set to be equal in order to identify the model. The beta in parentheses (.08) is the relation between Time 1 and Time 2 depressive symptoms, controlling for the mediator. $^{**}p < .01$.

## Discussion

The results of this study suggest that under conditions of chronic stress, the emotional well-being of highly ambivalent women is more dependent on how they perceive their partners and relationships than is true of other women. Supporting Bowlby's (1988) speculations, highly ambivalent women who entered the transition to parenthood perceiving that their husbands were less supportive and angrier experienced significant pre-to-postnatal increases in depressive symptoms. Less ambivalent women, in contrast, did not experience increases, even if they viewed their husbands negatively prior to childbirth. As predicted, these interaction effects were mediated by pre-to-postnatal declines in women's perceptions of spousal support over the transition period. That is, highly ambivalent women who entered parenthood perceiving their husbands as less supportive reported significant declines in perceived support across the transition, which in turn mediated significant pre-to-postnatal increases in depression. Given that husbands' attachment scores as well as wives' avoidance were statistically controlled in all analyses, these effects are specific to women's attachment ambivalence. They also remained reliable when three variables known to predict changes in depression—neuroticism, marital satisfaction, and changes in marital satisfaction—were controlled. For highly ambivalent women, the relation between their prenatal and postnatal depression scores was mediated by prenatal perceptions of their husbands, whereas no such mediation was found for less ambivalent women. This suggests that prenatal relationship perceptions assume a more prominent role in maintaining or exacerbating depressive symptoms in highly ambivalent women.

To date, most adult attachment research has studied dating rather than married partners. It seems reasonable to expect that compared with the attachment orientations of dating partners, the

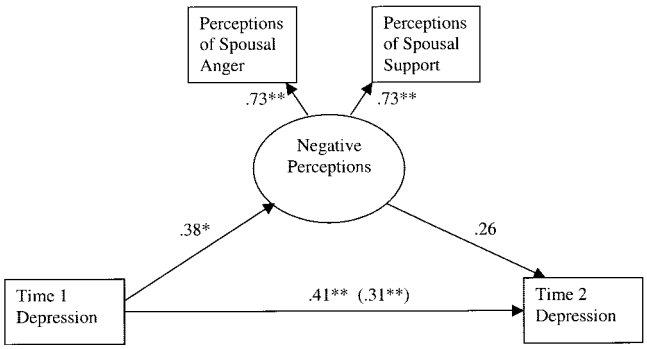


*Figure 7.* The mediation model for less ambivalent women (scoring below the sample median). Perceptions of spousal support are reverse coded so that higher scores represent lower perceptions of support. The link between each indicator and the latent factor was set to be equal in order to identify the model. The beta in parentheses (.31) is the relation between Time 1 and Time 2 depressive symptoms, controlling for the mediator. *$p < .05$. **$p < .01$.

attachment orientations of married people should be more highly correlated with partner-specific or relationship-specific factors. Nevertheless, attachment orientations in married individuals should assess more than just the qualities of the current partner and relationship, particularly when one considers that people have many important attachment experiences and relationships prior to getting married. Several lines of evidence are consistent with this view.

When well-established dating partners complete the Adult Attachment Questionnaire with respect to "romantic partners in general" (the typical instructions) and "the current partner," the general and partner-specific scales correlate far less than perfectly (.33 to .68) for each attachment dimension (Simpson, Rholes, Oriña, & Grich, 2002). Correspondence between general and partner-specific measures is, however, larger for couples who have dated longer. Pierce and Lydon (2001) have also found that general and relationship-specific models of self and other are correlated yet independent constructs, and both types of models independently predict attachment-relevant experiences in daily social interactions. As is evident in the present study, the attachment scores of married people correlate only moderately with different markers of relationship quality and functioning, which suggests that large amounts of variance in adult attachment styles are independent of the quality of current relationships. Most importantly, adult romantic attachment styles also predict how married people feel and behave in other types of relationships, such as those with toddlers (e.g., the way mothers feel and behave toward their toddlers when teaching them new tasks; Rholes, Simpson, & Blakely, 1995) and newborns (e.g., the way mothers view and relate to their newborns, even when marital satisfaction is controlled; Rholes, Simpson, Campbell, Tran, & Wilson, 2002). This cross-relationship evidence strongly suggests that adult attachment orientations contain at least some variance associated with general traitlike tendencies, even in married individuals.[13]

One way to interpret the current results is in terms of whether highly ambivalent women might have good reasons to be concerned about the quality of support available from their spouses. Chronically ambivalent wives who enter the transition perceiving lower levels of support or higher levels of anger from their husbands may have legitimate grounds to act on their ambivalent working models, given the perceived deficient actions of their spouses. This would explain why these women are particularly susceptible to experiencing increased depressive symptoms across the transition. On the other hand, chronically ambivalent wives who enter the transition perceiving greater spousal support or less spousal anger still harbor ambivalent working models, but they have less need to use or act on them. These women, therefore, should not experience increased depressive symptoms.[14]

### *Ambivalence and Depressive Symptoms*

Viewed as a whole, the results of this study confirm that perceptions of partners and relationships play a pivotal role in evoking and maintaining depressive symptoms in highly ambivalent women confronting a chronic life stressor. Although previous research has found that highly ambivalent people are more prone to depression (e.g., Carnelley et al., 1994; Mickelson et al., 1997), the present study reveals some of the conditions under which highly ambivalent women manifest depressive symptoms. Indeed, this is one of the first studies to identify specific interpersonal processes—perceptions of heightened spousal anger and deficient spousal support—that may trigger and sustain depressive symptoms in ambivalent women (see also Davila, Bradbury, Cohan, & Tochluk, 1997).

The interaction displayed in Figure 3 reveals that less ambivalent women (i.e., those more likely to be securely attached) who entered parenthood perceiving lower levels of spousal support actually became less depressed across the transition. It is conceivable that these women were coping well and did not require much support from their husbands. This finding and interpretation make sense in light of the fact that these women did not experience pre-to-postnatal declines in perceived spousal support. As the stress and demands of the transition to parenthood accumulated, these resilient women may have perceived or received steady, abiding support from their husbands. This sense of loyalty may have strengthened their personal well-being. It also might have helped these women cope more effectively with the early demands of parenting, which could have allowed them to glean more pleasure from their relationships with their new babies. In addition, the more positive, benevolent working models possessed by these women might have led them to perceive greater spousal support than their husbands actually offered.

The discriminant analyses indicated that the variables predicting change in marital satisfaction also predicted change in depressive symptoms independently. Specifically, after statistically controlling for changes in marital satisfaction, both of the prenatal interactions for women—Ambivalence × Perceived Prenatal Support and Ambivalence × Perceived Prenatal Anger—still predicted significant changes in depressive symptoms. Marital satisfaction was significantly correlated with depressive symptoms during the prenatal period, replicating the results of many previous studies

[13] When general and specific models are correlated, it is usually assumed that the specific model shapes the general model. The causal arrow, however, can go in either direction. Strong theoretical arguments can be advanced that the specific model can, in fact, be more strongly shaped by the general one (see Bowlby, 1973).

[14] We thank Margaret Clark for suggesting this interpretation.

(for a review, see Anderson et al., 1999).[15] When perceived prenatal support was statistically controlled, however, the association between satisfaction and depressive symptoms became nonsignificant. In contrast, the association between perceived support and depressive symptoms remained highly significant after marital satisfaction was partialed. Future research needs to identify which components of marital satisfaction account for the effects of marriage on health and psychosocial adjustment.

Two general, competing perspectives have guided most of the psychosocial research on depression during the past 2 decades. Cognitive theorists (e.g., Abramson, Seligman, & Teasdale, 1978; Beck, 1976) have argued that maladaptive thought processes are largely responsible for generating depression. They suggest that, among persons prone to depression, cognitive schemas distort perceptions of the environment and create feelings of loss and inadequacy, thereby initiating and maintaining depressive symptoms. Interpersonal theorists (e.g., Brown & Harris, 1978; Coyne, 1976a; Lewinsohn, 1974), in contrast, have focused on the rewards and punishments present in the social environments of depression-prone persons. This perspective, which is more closely aligned with social learning theory, emphasizes actual, objective differences in the environments of depressed versus nondepressed persons (rather than cognitive distortions). Interpersonal theories contend that depressed individuals have problems interacting with or obtaining support and gratification from others and that these factors trigger and sustain depressive symptoms.

Attachment theory incorporates aspects of both of these approaches (see Anderson et al., 1999; Hammen, 2000). Bowlby (1973, 1980) argued that the working models of persons with insecure attachment orientations bias perceptions of the social environment in ways that confirm and sustain the insecure person's fears, pessimistic beliefs, and negative expectations regarding attachment figures. He also contended, however, that insecure working models influence behavior in ways that may alienate partners and undermine relationships. Some evidence for this latter process was found in the present study. Before childbirth, the husbands of highly ambivalent women reported providing as much support to their wives as did the husbands of other women. Six months after birth, however, the husbands of highly ambivalent women reported that they provided less support relative to the husbands of other women. These findings suggest that the husbands of highly ambivalent women may have become more alienated from their spouses over the transition period. Dispositional ratings at the postnatal period confirmed that men who were married to highly ambivalent women viewed them as comparatively more dependent, more immature, less emotionally stable, and weaker. Moreover, these ratings mediated the connection between wives' ambivalence and husbands' reports of providing less spousal support at Time 2.

These findings are consistent with research on depression conducted by interpersonal theorists, who have shown that (a) excessive protest, nagging, pleading, and reassurance seeking are displayed more frequently by depressed people than nondepressed people in marital interactions, and (b) these behaviors often alienate even well-intentioned partners (Biglan, Lewin, & Hops, 1990; Coyne, 1976b; Joiner & Metalsky, 1995). If highly ambivalent women in the present study viewed their husbands as available and supportive, they should have worried less about loss and abandonment (Anderson et al., 1999). Under these circumstances, these women should have displayed less intense protest and anger, and they might have sought reassurance and support in a less intrusive, less demanding, or more constructive manner. This, in turn, might have allowed their husbands to offer more or better comfort and reassurance, instilling greater felt security in their highly ambivalent wives. Conversely, if highly ambivalent women thought that their husbands could not or would not provide sufficient support, their concerns about loss and abandonment should have loomed large. This should have instigated strong and perhaps excessive protest, anger, and reassurance seeking, fueling even greater felt insecurity. Simpson et al. (1996), in fact, observed that highly ambivalent women display some of these behaviors in interactions with their romantic partners, but only when they are distressed and trying to resolve a major relationship-based problem.

The present study also provides some evidence of biased perceptions of spousal anger and support. The Time 1 data revealed that more ambivalent women perceived less spousal support, despite the fact that their husbands reported providing as much support as the husbands of other women. Highly ambivalent women also perceived less support and more anger than did other women during Time 2, even when their husbands' reports of support and anger, their own marital satisfaction, their husbands' marital satisfaction, and other marital perceptions were statistically controlled. These findings suggest that the perceptions of highly ambivalent women may be partly driven by biases stemming from their insecure working models. Consistent with this interpretation, laboratory research by Collins and Feeney (2000) has confirmed that a single unsupportive act from their partners can cause highly ambivalent persons to perceive significantly less support from their partners in subsequent (and unrelated) interactions than neutral, objective raters observe.

We suspect that the negative partner perceptions harbored by highly ambivalent women may be reinforced and sustained by complex dyadic processes. One possibility is that ambivalent working models generate negative expectations and views of romantic partners, which then produce negative and dysfunctional interaction behaviors. These behaviors, in turn, may cause their partners–spouses to reciprocate negative behaviors, which simply confirms the negative expectations of highly ambivalent people, making them feel even more depressed. Future research needs to disentangle the complicated patterns of effects likely to exist between wives' perceptions of their husbands, wives' behavioral reactions in response to their perceptions, their husbands' reciprocal behavioral responses, and temporal changes in wives' depression.

Although highly ambivalent women tend to perceive and receive less support from their husbands, this does not fully explain their vulnerability to depressive symptoms. As discussed above, highly ambivalent women react most strongly when they perceive low or inadequate support. Why is the well-being of highly ambivalent women so closely bound to their perceptions of support?

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[15] Concurrent analyses at Time 1 revealed that prenatal marital satisfaction was significantly associated with prenatal depressive symptoms when husbands' and wives' attachment orientations were partialed, $F(1, 101) = 7.22$, $p < .01$ ($\beta = -.25$). However, this effect became nonsignificant when perceived prenatal support was partialed from depressive symptoms, $F(1, 100) < 1.0$, *ns.* In contrast, the relation between perceived support and depressive symptoms at Time 1 remained highly significant when marital satisfaction was partialed, $F(1, 100) = 9.97$, $p < .005$ ($\beta = -.33$).

Highly ambivalent people have a strong, pressing need to maintain close psychological proximity with their attachment figures. During adulthood, this need is expressed as a persistent desire to feel supported and cared for. These concerns should make highly ambivalent people sensitive to signs of possible rejection (Downey & Feldman, 1996) and motivate them to continually test for their partner's support and loyalty (Mikulincer, 1997). When these pressing needs are perceived as being unmet, highly ambivalent persons may feel hopeless about their current relationship or relationships in general (Rholes & Simpson, in press), launching depressive symptoms (Abramson, Metalsky, & Alloy, 1989). Perceptions of deficient care and support might also prime preexisting feelings of low self-esteem or of not being worthy of care and support, which might also aggravate depressive symptoms. Consistent with this view, Roberts, Gotlib, and Kassel (1996) have found that the connection between insecure attachment and depression is mediated in part by dysfunctional attitudes pertaining to the self and low self-esteem.

For reasons elaborated earlier, our predictions focused on changes in depressive symptoms in women rather than in men. Because the first few months of the transition tend to be much more difficult for wives than husbands, we did not assess men's perceptions of how much support or anger they received from their wives. During latter stages of the transition period (when men are no longer expected to provide primary support), highly ambivalent men who perceive deficient support from their wives might also experience increased depressive symptoms (see Feeney, Hohaus, Noller, & Alexander, 2001).

### *Avoidance*

As expected, highly avoidant men and women reported greater prenatal depressive symptoms, but they did not experience significant increases in depressive symptoms across the transition. This is understandable when one recognizes that highly avoidant people value close relationships less than other people (Hazan & Shaver, 1987), may base their self-worth on a larger number of different life domains (e.g., work; Hazan & Shaver, 1990), minimize and more effectively control negative affect in stressful situations (Kobak & Duemmler, 1994), and presumably worry less about the quality and functioning of their relationships. Given these considerations, most well-defended avoidant people (i.e., those who score high on the avoidance dimension and low on the ambivalence dimension) should not exhibit increased depressive symptoms, at least during the early months of the transition when the constraints of having a baby may not be fully apparent. If stress becomes severe, however, even well-defended avoidant people might eventually experience increased depressive symptoms. The present results clearly show that although both highly avoidant and highly ambivalent persons may be more vulnerable to depressive symptoms, the nature of their vulnerabilities differs. To our knowledge, this is the first study to illustrate this point.

It is important to emphasize that our support measures assessed emotional rather than instrumental forms of social support. Deficient instrumental support could trigger depressive symptoms in highly avoidant people, especially during latter stages of the transition when child care responsibilities begin to interfere with other life tasks (e.g., work, recreation, travel). Although there clearly are situations in which highly avoidant individuals become depressed, these situations are likely to involve issues and events outside the scope of relationships (e.g., poor performance at work, poor or failing health, financial problems).

### *Caveats and Conclusions*

The results of this study must be interpreted bearing several caveats in mind. First, despite the prospective design of the study, the data do not permit causal inferences. Second, this study examined the early stages of the transition process. As discussed above, highly ambivalent men and highly avoidant men and women might experience elevated depressive symptoms at latter stages of the transition (beyond 6 months postpartum). Third, this study assessed emotional rather than instrumental support. Changes in depressive symptoms in highly avoidant people might be more responsive to deficits in instrumental support, particularly once the full stress and limitations of being a parent are realized. Fourth, the findings of the present study may be specific to the transition to parenthood. Other major life stressors (e.g., losing a job, experiencing chronic health problems) might generate depressive symptoms more readily in highly avoidant persons. Fifth, prenatal and postnatal levels of depressive symptoms were rather low in this study. One therefore cannot assume that the pattern of results found in this study would replicate in individuals exhibiting very high (e.g., clinically diagnosed) levels of depression. Sixth, although Bowlby (1988) explicitly proposed that the transition to parenthood should evoke depressive symptoms in highly ambivalent women who perceive deficient spousal support, this study did not have a nontransition control group. Although there are compelling reasons to believe that highly ambivalent women should not experience increases in depressive symptoms in the absence of major stressors (see Mikulincer & Florian, 1998), stressful events other than the transition to parenthood might generate similar findings. Finally, the current results might be specific to Western cultures. A different pattern of results, for example, might emerge in cultures in which husbands are not expected to serve as primary support providers during the first few months of the transition period.

These caveats notwithstanding, the present study provides preliminary support for a diathesis-stress model of depression originally proposed by Bowlby (1988). Across a common, major life stressor, it reveals the way in which a theoretically important personal vulnerability (ambivalent attachment) interacts with important interpersonal perceptions (negative prenatal perceptions of spousal anger and support) to forecast increases in depressive symptoms in women. This study also confirms that if highly ambivalent women enter parenthood with negative perceptions of their husbands, they tend to perceive declining spousal support across the transition period, which plays an important mediating role in making these women susceptible to depressive symptoms. In doing so, it sheds new light on the interpersonal origins and nature of postnatal depression.

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