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## Adolescent Attachment Trajectories with Mothers and Fathers: The Importance of Parent-Child Relationship Experiences and Gender

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### Abstract

This longitudinal study investigated how attachment with mothers and fathers changes during adolescence, and how gender and parent-child relationship experiences are associated with attachment trajectories. The relative importance of specific positive and negative relationship experiences on attachment trajectories was also examined. An initial sample of 223 adolescents reported on relationship experiences and attachment avoidance and anxiety with mothers and fathers in grades 6, 8, 10, and 12 (final  $N=110$ ;  $M_{\text{age}}=11.90$  years at onset,  $SD=.43$ ). Mothers and fathers reported on relationship experiences with adolescents. Hierarchical linear modeling showed that security with parents increased during adolescence. Positive relationship experiences (companionship, satisfaction, approval, support) predicted increases in security and negative experiences (pressure, criticism) predicted decreases in security. Females reported less avoidance than males.

### Keywords

attachment; adolescence; trajectories; relationship experiences; hierarchical linear modeling; HLM; multilevel modeling; relationship quality

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Attachment is a profound emotional connection between an infant and caregiver that is based on the quality of interactive experiences with the caregiver (Bowlby, 1969). Attachment relationships with parents serve important functions long after infancy, extending into adolescence and adulthood (Raudino, Fergusson, & Horwood, 2013). Specifically, attachment security with parents in adolescence and adulthood is associated with interpersonal and psychological outcomes, such as relatedness in other relationships, agreeableness, conscientiousness, and lower depression scores (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Fraley, Heffernan, Vicary, & Brumbaugh, 2011). Thus, studying attachment beyond infancy is important for optimizing developmental outcomes during adolescence and adulthood. Considerable recent research has found that early attachment security is only moderately associated with adolescent and adult attachment (Aikins, Howes, & Hamilton, 2009). These findings raise an important question: if infant

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This paper is dedicated to our dear friend and mentor, Dr. Duane Buhrmester.

attachment relationships only partially explain later attachment security, what other factors contribute to attachment in adolescence and adulthood?

Research suggests two factors that may influence attachment security: adolescent gender and relationship experiences. Although a few studies have examined these factors during early childhood and adulthood, there remain significant gaps in our knowledge concerning adolescent attachment relationships. By utilizing hierarchical linear modeling to examine parent-child relationships from grades 6 to 12, the current study investigated (1) trajectories of attachment with parents and (2) the role of individual differences (i.e., adolescent gender and parent-child relationship experiences) in adolescent attachment trajectories.

## To What Extent Does Attachment Security Change During Adolescence?

Adolescence is an important period to examine change in many aspects of development, and attachment is no exception. Adolescents are undergoing many physical, social, and cognitive changes during this time. For instance, adolescents are reaching physical maturity and cultivating their gender identities, which may change the nature and focus of parent-child interactions (Ainsworth, 1989; Cooper et al., 2013; Lee, 2008). Adolescents' social lives are also evolving due to the increased role of peers and the development of individuation from parents (Hay & Ashman, 2003). Lastly, adolescents are experiencing cognitive developments (e.g., increased autonomy, shared decision making with parents, formal operations to reflect upon interpersonal experiences), which may better enable adolescents to critically evaluate their relationships with parents (Allen, McElhaney, Kuperminc, & Jodl, 2004; Ammaniti, van IJzendoorn, Speranza, & Tambelli, 2000; Furman, Simon, Shaffer, & Bouchey, 2002; Hill, Bromell, Tyson, & Flint, 2007; Main, Kaplan, & Cassidy, 1985). These crucial developments help adolescents to relate to their parents, while being less emotionally and behaviorally dependent on them, leading to possible changes in attachment with parents (Buist, Dekovi, Meeus, & van Aken, 2002; Hay & Ashman, 2003). By examining change in adolescent attachment, researchers may gain insight into associated outcomes during and after adolescence. For instance, increases in adolescents' attachment security to parents predict adult outcomes such as decreases in drug use and depression scores (Raudino et al., 2013). Furthermore, because adolescent attachment is related to long-term outcomes, including self-esteem, adjustment to major life transitions, desires to be a parent, romantic outcomes, anxiety levels, criminal tendencies, and suicidal ideation, it is important to investigate the extent to which adolescent attachment is malleable (Doyle & Markiewicz, 2005; Raudino et al., 2013; Scharf & Mayseless, 2011; Seiffge-Krenke, Overbeek, & Vermulst, 2010).

Studies on change in adolescents' attachment with parents across one- to two-year periods in adolescence indicate that attachment with parents is correlated from one time to the next; however, there is considerable variability in attachment that is not accounted for by earlier attachment (Allen et al., 2004; Buist, Reitz, & Dekovi, 2008; Doyle, Lawford, & Markiewicz, 2009; Pierce & Lydon, 2001). Studies on the long-term stability of parental attachment (four or more years) show mixed findings, with some indicating substantial change (e.g., Aikins et al., 2009; Beijersbergen, Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2012; Choi, Hutchison, Lemberger, & Pope, 2012; Weinfield, Sroufe, &

Egeland, 2000; Weinfield, Whaley, & Egeland, 2004) and some indicating considerable stability over time (e.g., Ammaniti et al., 2000; Hamilton, 2000; Waters, Merrick, Treboux, Crowell, & Albersheim, 2003).

Mixed findings across these studies do not appear to be ascribable to the age periods in question. However, decreases in attachment security were often seen in higher-risk samples, whereas overall increases were seen in low-risk samples (e.g., Aikins et al., 2009; Allen et al., 2004; Weinfield et al., 2000). Characteristics of low-risk samples included not living in poverty, growing up in the same middle- and upper-middle class community throughout childhood, and living with both biological parents. Although findings are mixed, we expected that there would be at least some discontinuity in attachment in the current study, due to the many developments adolescents are experiencing at this time, including increased autonomy and individuation from parents, shared decision-making with parents, and improved perspective-taking skills (Allen et al., 2004; Choudhury, Blakemore, & Charman, 2006; Hay & Ashman, 2003; Hill et al., 2007; Main et al., 1985). Because of these beneficial developments, we hypothesized that attachment security would increase with mothers and fathers throughout adolescence (Hypothesis 1). Furthermore, we believed that security would increase because the sample in the current study was relatively low-risk (i.e., majority were middle- and upper middle-class and living with both biological parents). Testing the extent to which attachment changes over time served as a preliminary step in this study. It is only beneficial to examine the factors that may influence attachment outcomes if it is first established that attachment can change over time.

Given that attachment security is the product of relational experiences with attachment figures (e.g., Ainsworth, 1979; Beijersbergen et al., 2012; Bowlby, 1969) and that there is individual variation in relational experiences in different families (O'Connor, Dunn, Jenkins, & Rasbash, 2006), we hypothesized that there would be individual variation in levels of attachment. More importantly, we hypothesized that there would be individual variation in attachment trajectories (i.e., differing rates of linear change) over time (Hypothesis 2).

## **How Do Individual Differences Influence the Nature and Growth of Attachment?**

### **Adolescent gender**

Effects of gender on attachment relationships in adolescence often suggest that females report more attachment security with mothers and fathers than males during adolescence (Buist et al., 2002; Choi et al., 2012). However, research does not always find a relationship between gender and attachment. Mixed findings may be due to methods of measuring attachment. Studies using continuous measures of attachment (e.g., Buist et al., 2002; Choi et al., 2012) may better detect gender differences than studies using attachment classification systems (e.g., Aikins et al., 2009; Ammaniti et al., 2000; Forbes, Evans, Moran, & Pederson, 2007) due to measurement sensitivity (Fraley & Spieker, 2003). Thus, this study used a continuous measure to examine changes in attachment and the effects of gender and relationship experiences on attachment outcomes. Based on previous findings, we hypothesized that females would be lower in attachment avoidance and anxiety than males

(Hypothesis 3). Because limited evidence exists to suggest gender differences in attachment trajectories (Choi et al., 2012), no hypotheses were made about gender differences in attachment trajectories.

### Relationship experiences

Previous research and theory indicate that attachment varies across adolescents, and that early attachment is not necessarily related to later attachment (Aikins et al., 2009). Accordingly, specific factors may be responsible for adolescent attachment outcomes. For instance, research suggests that attachment security is determined by positive experiences with caregivers, including affection, sensitivity and responsiveness, emotional support, positive parental attitude, and parent-child synchrony (Ainsworth, 1979; Bowlby, 1969; De Wolff & van IJzendoorn, 1997; Schaffer & Emerson, 1964; Tracy & Ainsworth, 1981).

During adolescence, some of these relational experiences appear to remain influential, (e.g., parent-child *satisfaction*, parental *support*). Conceptualized as positive parental attitude and parent-child synchrony during infancy, parental satisfaction in the parent-child relationship is positively related to adolescent attachment security (Erich, Hall, Kanenberg, & Case, 2009). Furthermore, adolescent satisfaction with mothers and fathers is related to less attachment anxiety (Roberto, Carlyle, Goodall, & Castle, 2009). Similarly, parental support (e.g., guidance, advice, encouragement, availability) is related to secure adolescent attachment outcomes (e.g., Allen et al., 2004; Azam & Hanif, 2011; Mullis, Hill, & Readdick, 1999). For instance, a recent longitudinal study suggests that increases in support lead to increases in secure attachment from infancy to adolescence (Beijersbergen et al., 2012).

Although satisfaction and support may be important from infancy throughout adolescence, features of mature relationships (i.e., *approval*, *companionship*, *disclosure*) may also be related to adolescent attachment. For instance, adolescents' perceptions of parental acceptance and approval are positively related to attachment security with mothers and fathers (Gallarin & Alonso-Arbiol, 2012; Richaud de Minzi, 2006; Sirvanli-Ozen, 2004). Further, maternal acceptance is predictive of increases in adolescent attachment security (Allen et al., 2004). Research also suggests that parent-child companionship plays a role in adolescent attachment outcomes. For instance, feelings of connectedness during interactions and the perceived quality of parent-child interactions are related to attachment to parents (Kerns & Stevens, 1996). Relational disclosure has also been found to be related to adolescent attachment. Specifically, openness with parents is related to how adolescents seek proximity to their parents when experiencing stressful emotions (e.g., loneliness, depression, anxiety; Armsden & Greenberg, 1987). Based on previous research, we hypothesized that positive relational experiences (i.e., support, satisfaction, disclosure, approval, companionship) with mothers and fathers would predict increases in adolescent attachment security (Hypothesis 4). In order to further the existing literature, we explored the relative importance of these specific positive relationship experiences to determine which factors are the most influential in predicting change in attachment from early to late adolescence. Because limited research has directly compared the impact of different

relationship experiences on adolescent attachment, we did not make any specific hypotheses about which factors would be most influential.

Negative relationship experiences (i.e., *conflict, criticism, pressure*) may also be related to attachment outcomes. For instance, research suggests that decreases in attachment security are predicted by enmeshed, overpersonalized conflicts between adolescents and their mothers (Allen et al., 2004). Other research suggests that chronic and episodic interpersonal conflict (e.g., overt hostility, openly expressed anger) in parent-child relationships are related to less adolescent attachment security (Armsden & Greenberg, 1987; Davila, Burge, & Hammen, 1997; Van Ryzin & Leve, 2012). Parental criticism is also related to less attachment security during adolescence (Anhalt & Morris, 2008). For instance, adolescents' perceptions of parental criticism are related to more attachment avoidance and anxiety (Rice, Lopez, & Vergara, 2005). Additionally, parents who express more negative emotions about their children have adolescents who are more likely to be insecurely attached (Scott, Briskman, Woolgar, Humavun, & O'Connor, 2011). Attachment theory also suggests that parental pressures on adolescents to engage in certain behaviors can be detrimental to attachment outcomes, as they may prompt children to shut off feelings and thoughts, leading to more avoidant attachment (Jacobsen & Miller, 1998). Indeed, adolescent perceptions of verbal, physical, and psychological pressure are related to less security with mothers and fathers (Gallarín & Alonso-Arbiol, 2012). Based on previous research, we hypothesized that negative relational experiences (i.e., conflict, criticism, pressure) with mothers and fathers would predict decreases in attachment security throughout adolescence (Hypothesis 5). In order to further the existing literature, we also explored the relative importance of these specific negative relationship experiences on attachment trajectories.

## Contributions of the Current Study

The studies reviewed here shed light on how attachment changes over time and how some relational experiences impact attachment. However, there are several limitations to existing research that the current study will address. First, limited research has examined trajectories of adolescent attachment using data from more than two time points, or time spans longer than two years. Because data with more than two time points are necessary to assess patterns of change (Fraley, Vicary, Brumbaugh, & Roisman, 2011), this study utilized data from four time points across six years (grades 6, 8, 10, and 12) to examine attachment trajectories.

Second, a majority of research examining change in attachment over extended periods of time (four years or more) has used different attachment measures at different time periods (e.g., Aikins et al., 2009; Beijersbergen et al., 2012; Hamilton, 2000; Weinfield et al., 2004). The use of different measures may be necessary for assessing attachment at different periods in life, but may also indicate changes in attachment that are due to differences in the constructs being measured (Roisman, Holland, Fortuna, Fraley, Clausell, & Clarke, 2007; Weinfield et al., 2000). For instance, the Adult Attachment Interview (AAI) and Adult Attachment Projective Picture System (AAP) conceptualize attachment as cognitive-affective representations and measure general internal working models (Aikins et al., 2009; de Haas, Bakermans-Kranenburg, & van IJzendoorn, 1994; George, Kaplan, & Main, 1985; George & West, 2001). In contrast, self-report measures (e.g., Relationship Questionnaire,

Adult Attachment Scale) conceptualize attachment as either relationship-specific or general attachment orientations, depending on item wording (Bartholomew & Horowitz, 1991; Collins & Read, 1990). In order to assess the same construct throughout adolescence, and to assess relationship-specific attachment to mothers and fathers, the current study utilized the same modified Adult Attachment Scale throughout adolescence. This measure conceptualizes attachment with mothers and fathers on two continuous dimensions (avoidance and anxiety; Brennan, Clark, & Shaver, 1998; Collins & Read, 1990). Continuous measures of attachment offer more power for detecting individual variation and change in attachment and are not biased by differing base rates of attachment categories (Fraleigh & Spieker, 2003; Scharfe, 2002; Scharfe & Bartholomew, 1994).

Lastly, limited research has examined change in adolescent attachment to mothers and fathers separately. Although there is some consistency in attachment relationships with mothers and fathers during infancy, this is not always the case during adolescence (Fox, Kimmerly, & Schafer, 1991). For instance, some research suggests that adolescents are higher in attachment security with mothers than fathers (Doyle et al., 2009). Thus, this study measured relationship-specific attachment with mothers and fathers separately.

## Method

### Participants

This research utilized data from a six-year longitudinal study of adolescents recruited from a suburban school district in Texas. Adolescents were surveyed in grades 6, 8, 10, and 12. A total of 223 adolescents (108 females) and their families participated in the initial wave of the study. For the final wave, 110 adolescents (53 females) remained. At the study onset, adolescents' average age was 11.90 years ( $SD = .43$ ), and a majority of participants were European American (88.9%), followed by African American (3.9%), Hispanic (2.6%), and Other (4.6%). Most participants were from middle- and upper middle-class families (91.3% at grade 6, 97% at grade 12) according to reported family income, and the majority lived with both biological parents (82.4% at grade 6, 81.1% at grade 12). Regression analyses examining potential bias due to attrition indicated that data from key study variables at grade 6 did not predict missingness of data at subsequent time points. This indicated that data missingness was not due to the construct itself (i.e., attrition was not due to attachment or relationship experiences). Thus, the data were considered to be missing at random (Little, 1988).

### Procedure

Trained research assistants visited families in their homes at each measurement occasion. Once participants provided informed consent, adolescents, mothers, and fathers were taken into separate rooms to complete a series of self-report measures. Adolescents completed measures on their attachment and relationship experiences with both their mothers and fathers separately; parents completed questionnaires on relationship experiences with their adolescents. Families received monetary compensation for participating.

## Measures

**Relationship experiences**—The Network of Relationships Inventory—Relationship Qualities Version (NRI-RQV; Buhrmester, 1992) was used at each wave of the study. Adolescents reported on relationship experiences with mothers and fathers separately, and parents independently rated their relationship experiences with their adolescents. The NRI-RQV consists of 30 items, assessing five positive relationship experiences (support, satisfaction, disclosure, approval, and companionship) and five negative relationship experiences (conflict, criticism, exclusion, pressure, and power). Example items, scale scoring, and mean reliabilities for each relationship experience are shown in Table 1. Adolescents' ratings and ratings from mothers and fathers were used to create a composite score for each relationship experience in grades 6, 8, 10, and 12. For instance, companionship with mothers in grade 6 was based on adolescents' and mothers' ratings of companionship in the mother-child relationship at grade 6. This method helped to ensure that findings were not merely a product of raters' biases, as it took into account both partners' ratings of relationship experiences. Because reliability was low for the exclusion and power constructs, these two factors were excluded from primary analyses.

**Attachment security**—A modified Adult Attachment Scale (Collins & Read, 1990) was used to assess attachment avoidance and anxiety with parents in grades 6, 8, 10, and 12. Adolescents completed this measure separately for mothers and fathers. Based on recommendations from Brennan et al. (1998), the original subscales for dependence and closeness were used to assess attachment avoidance, whereas the subscale for anxiety was used to assess attachment anxiety. The avoidance subscale (7 items) measured how much adolescents are willing to rely on their attachment figures for comfort. Adolescents high in avoidance place a premium on independence and distance from others; they are uncomfortable eliciting closeness from attachment figures, even in times of stress (Brennan et al., 1998). The anxiety subscale (5 items) measured how much adolescents are preoccupied with thoughts of being rejected by their attachment figures. Adolescents high in anxiety are fearful of abandonment from attachment figures, and can be overly receptive to cues of rejection (Brennan et al., 1998). Specific items, scale scoring, and mean reliability coefficients for avoidance and anxiety are shown in Table 2.

## Data Analytic Plan

**Descriptive statistics**—Descriptive statistics were calculated at each grade level for adolescents' attachment avoidance and anxiety as well as positive and negative relationship experiences with mothers and fathers.

**Models**—Unconditional models were first conducted for adolescents' relationships with mothers and fathers for attachment avoidance and anxiety. These preliminary models only included grade as a Level 1 predictor of attachment for a given individual at a given time. Because individual variation may exist in attachment and attachment trajectories, grade and the intercept were allowed to vary randomly. Grade began at 0 for the initial wave in grade 6; because measurement points were consistently two years apart, grade was equal to 1 at the second wave, 2 at the third wave, and 3 at the final wave. This model was analyzed for

attachment avoidance and anxiety with mothers and fathers. The general model was as follows:

$$\begin{aligned} \text{Level 1: } \text{ATTACHMENT}_{ti} &= \pi_{0i} + \pi_{1i}(\text{GRADE}_{ti}) + \varepsilon_{ti} \\ \text{Level 2: } \pi_{0i} &= \beta_{00} + r_{0i} \\ \pi_{1i} &= \beta_{10} + r_{1i} \end{aligned}$$

After the unconditional models were analyzed, conditional models testing the relative importance of specific positive and negative relationship experiences were conducted. These models included distinct positive (support, satisfaction, disclosure, approval, companionship) and negative (conflict, criticism, pressure) relationship experiences as time-varying covariates. These relationship experiences, as well as grade, were included as Level 1 predictors. Adolescent gender was included as a Level 2 predictor (0=male, 1=female). The intercept and grade were allowed to vary randomly. All positive and negative relationship experiences were centered at the grand mean, whereas grade was centered at 0. This model was analyzed for attachment avoidance and anxiety with mothers and fathers. In general, this model was as follows:

$$\begin{aligned} \text{Level 1: } \text{ATTACHMENT}_{ti} &= \pi_{0i} + \pi_{1i}(\text{GRADE}_{ti}) + \pi_{2i}(\text{SUPPORT}_{ti}) + \\ &\quad \pi_{3i}(\text{SATISFACTION}_{ti}) + \pi_{4i}(\text{DISCLOSURE}_{ti}) + \\ &\quad \pi_{5i}(\text{APPROVAL}_{ti}) + \pi_{6i}(\text{COMPANIONSHIP}_{ti}) + \\ &\quad \pi_{7i}(\text{CONFLICT}_{ti}) + \pi_{8i}(\text{CRITICISM}_{ti}) + \pi_{9i}(\text{PRESSURE}_{ti}) + \varepsilon_{ti} \\ \text{Level 2: } \pi_{0i} &= \beta_{00} + \beta_{01}(\text{GENDER}_{1i}) + r_{0i} \\ \pi_{1i} &= \beta_{10} + \beta_{11}(\text{GENDER}_{1i}) + r_{1i} \\ \pi_{2i} &= \beta_{20} \\ \pi_{3i} &= \beta_{30} \\ \pi_{4i} &= \beta_{40} \\ \pi_{5i} &= \beta_{50} \\ \pi_{6i} &= \beta_{60} \\ \pi_{7i} &= \beta_{70} \\ \pi_{8i} &= \beta_{80} \\ \pi_{9i} &= \beta_{90} \end{aligned}$$

Models were tested using HLM for Windows, Version 6.34g, which fits an unstructured covariance structure for all models, thus estimating all covariances and variances (Raudenbush, Bryk, & Congdon, 2008). Because of the study's sample size, and because the data were missing at random (MAR), Restricted Maximum Likelihood (REML) was used for all analyses.

## Results

Descriptive statistics for adolescents' attachment and relational experiences with mothers and fathers at each grade level are shown in Tables 3 and 4, respectively. Significant variation in grade 6 attachment and attachment trajectories in the unconditional models suggested the need for additional predictors to explain individual variation. Akaike information criteria (AICs) for anxiety and avoidance with mothers in the unconditional models were 1025.15 and 1477.05, respectively. AICs for anxiety and avoidance with



fathers in the unconditional models were 1042.78 and 1472.70, respectively. Because the AICs for the conditional models (Tables 5 and 6) were smaller than the AICs for the corresponding unconditional models, the conditional models were the preferred models. Furthermore, the conditional models suggested that gender and relationship experiences are important in determining attachment outcomes. Thus, results discussed refer to the conditional models for mothers (Table 5) and fathers (Table 6).

### **To What Extent Does Attachment Security Change During Adolescence?**

The first hypothesis that attachment anxiety and avoidance with mothers and fathers would decrease during adolescence was supported. In partial support of Hypothesis 2, there was significant individual variation in avoidance and anxiety with mothers and fathers at grade 6. Additionally, there was individual variation in trajectories of anxiety, but not avoidance, with parents. Based on correlations between Level 2 residuals, or the true initial status and true change for each model (Tables 5 and 6), individuals who were high in avoidance and anxiety experienced greater decreases in avoidance and anxiety, respectively (Singer & Willett, 2003).

### **How Do Individual Differences Influence the Nature and Growth of Attachment?**

**Adolescent gender**—Hypothesis 3 was partially supported in that gender did not have an effect on anxiety with parents but did have an effect on avoidance with parents in early adolescence. Specifically, girls were, on average, lower in avoidance than boys with mothers and fathers at grade 6. Changes in attachment did not depend on the gender of the adolescent.

**Relationship experiences**—Both positive and negative relationship experiences had significant effects on avoidance and anxiety with mothers (Table 5) and fathers (Table 6). As predicted (Hypothesis 4), as certain positive relationship experiences increased, avoidance and anxiety with parents decreased. Specifically, as satisfaction and approval increased, anxiety and avoidance with both mothers and fathers decreased. Also, as support and companionship increased, avoidance with fathers decreased. Hypothesis 5 was also supported; as certain negative relationship experiences increased, avoidance and anxiety with parents increased. As criticism increased, anxiety with mothers increased and as pressure increased, avoidance with fathers increased. Neither disclosure nor conflict predicted attachment trajectories with parents.

## **Discussion**

This study examined attachment trajectories with mothers and fathers and investigated how gender and relationship experiences predict attachment outcomes. Additionally, this study assessed which relationship experiences are the most influential in predicting attachment trajectories with parents.

### **To What Extent Does Attachment Security Change During Adolescence?**

Attachment avoidance and anxiety appear to decrease during adolescence. This increase in security with parents may be explained by the physical, social, and cognitive changes that

adolescents are undergoing at this time. For instance, the progression of physical maturity may improve parent-child relationships by promoting supportive and caring exchanges between adolescents and parents as adolescents undergo emotionally challenging physical changes (Ainsworth, 1989; Lee, 2008). Avoidance and anxiety with parents may also decrease in adolescence due to the changing roles that parents have in their adolescents' lives. As adolescents develop more salient peer and romantic relationships, they may report more security with parents because they are less reliant on parents as a source of relational fulfillment (Hay & Ashman, 2003). Lastly, cognitive developments offer opportunities to re-conceptualize attachment relationships, such as increasing adolescents' independence without feeling overly anxious, and increasing adolescents' abilities to relate to and rely on parents without feeling overly avoidant (Allen et al., 2004). Because formal operations are developing during this period, adolescents' abilities to reflect on their relationships may improve (Furman et al., 2002; Main et al., 1985). These developments may help adolescents realize that parents are available for support and comfort, even if parents are scaffolding independence by withholding immediate assistance with everyday stressors.

Individual variation was found in avoidance and anxiety with mothers and fathers at grade 6. Because there is much variation in relational experiences for different parent-child dyads, it follows that there would be variation in attachment security (Choi et al., 2012; O'Connor et al., 2006). Individual variation in trajectories of anxiety with mothers and fathers was also found. Anxiety may change slightly over time at the mean level because it is highly discontinuous for some individuals, but relatively stable for others, since anxiety was highly variant at the individual level in this study. Surprisingly, there was no significant individual variation in avoidance trajectories with parents, suggesting that changes in avoidance do not vary significantly across adolescents. Overall decreases in avoidance may occur for most adolescents in this sample because most are experiencing increases in the coherence of their attachment models due to increases in maturity and perspective-taking (Allen et al., 2004).

Adolescents who were initially high in security at grade 6 experienced greater decreases in security. Although this finding should be interpreted with caution due to the presence of measurement error in the correlations between Level 2 residuals (Singer & Willett, 2003), it is possible that parents make greater attempts to help their adolescents feel more secure when adolescents show signs of insecurity. Because decreases in avoidance were seen for most adolescents, it is also possible that adolescents who were initially high in avoidance experienced greater decreases in avoidance because greater decreases were possible for these individuals.

### **How Do Individual Differences Influence the Nature and Growth of Attachment?**

**Adolescent gender**—The hypothesis that females would be higher in attachment security was partially supported. Specifically, females were lower than males in avoidance, but not anxiety, with mothers and fathers at grade 6. Females may be lower in avoidance because they wish to maintain relatedness with parents, whereas males are more focused on asserting autonomy from parents (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993). Furthermore, to avoid potential gender role stress that may occur if males are not consistent with their prescribed gender roles, adolescent males may believe that they must ascribe to

gender-specific traits related to avoidance, such as emotional inexpressiveness (McDermott & Lopez, 2013). Gender did not impact attachment trajectories, which indicates that females remain lower in avoidance throughout adolescence. This is consistent with findings of gender differences in attachment in late adolescence and early adulthood (Kobak et al., 1993).

In order to maintain parsimonious models, this study did not examine gender by relationship experience interactions in predicting attachment outcomes. However, some research has found gender differences in how relationship experiences impact parent-child relationships. For instance, male children utilize companionship to strengthen the parent-child relationship more than females (Harach & Kuczynski, 2005). Additionally, females perceive more support from parents than males, so support may impact attachment trajectories more for females than males (Kenny, 1994). This finding may explain why support did not appear to impact avoidance with mothers or anxiety with mothers and fathers. Future research should examine how relationship experiences impact attachment outcomes differently for males and females.

**Relationship experiences**—The hypotheses that relationship experiences would be related to attachment anxiety and avoidance were supported. Increases in specific positive relationship experiences predicted increased security with parents, whereas increases in specific negative relationship experiences predicted decreases in security with parents.

First, as satisfaction increased, anxiety and avoidance with both mothers and fathers decreased. It is possible that adolescents who do not feel fulfilled in their relationships with parents may become less willing to rely on their parents for comfort and may be more fearful of rejection from parents, especially if parents indicate that they are not satisfied with the relationship. In contrast, when adolescents feel satisfied with the relationship, they may feel more confident that the relationship is both resolute and reliable.

As approval increased, anxiety and avoidance with mothers and fathers decreased. By exuding pride, parents may assuage an adolescent's fears of rejection, while helping their adolescent to feel accepted, secure, and trusting toward parents (Richaud de Minzi, 2006). When parents approve of adolescents' behaviors, they may be more willing to give adolescents independence and responsibility, which may help adolescents to perceive that they are in an egalitarian relationship with parents. As a result, adolescents may engage in mutual trust and closeness with parents because they can rely on parents for advice on their newfound responsibilities and may begin to assume a more mature role in the relationship. Indeed, research suggests that offering adolescents autonomy while maintaining positive relatedness in the relationship has a positive influence on adolescents' psychological outcomes (Allen, Hauser, Bell, & O'Connor, 1994). Further research should examine the role of egalitarian parent-child relationships in nurturing attachment security.

As companionship increased, avoidance with fathers decreased. This result is consistent with findings that fathers' interest in their adolescents is related to attachment (Richaud de Minzi, 2006). Thus, father-child relationships may benefit from mutual engagement in fun activities, making adolescents feel more connected and more willing to rely on their fathers

for comfort. Furthermore, “fun time” together may offer a concrete opportunity to increase closeness in the relationship. Companionship did not significantly impact avoidance trajectories with mothers. Attachment theory suggests that paternal sensitivity and father-child cooperation during time spent together may be important in father-child relationships, whereas comforting and encouraging caregiving routines may be more important in mother-child relationships (Bowlby, 1969; Bretherton, Lambert, & Golby, 2005). Indeed, research suggests that fathers’ abilities to engage in sensitive and challenging interactive play are related to adolescents’ attachment at ages 16 and 22 (Grossmann, Grossmann, Kindler, & Zimmermann, 2008). It is important to note that the effects of mother and father relationship experiences on attachment outcomes cannot be directly compared within our study because mothers and fathers were not included in the same analyses. Thus, future research should consider directly comparing these effects to definitively determine whether parental effects on attachment differ for mothers and fathers.

As support increased, avoidance with fathers decreased. This is congruent with findings that fathers’ unsupportive reactions to children’s stress are related to less security with fathers (DeBoard-Lucas, Fosco, Raynor, & Grych, 2010). Supportiveness in the father-child relationship is thought to be related to attachment because fathers play an active role in helping their children achieve autonomy (Rubin et al., 2004). When fathers promote adolescents’ independence via supportive and warm exchanges, adolescents may approach their increasing autonomy in a positive manner, feeling able to maintain closeness and trust with fathers (Parke & Buriel, 1998).

With regard to negative relational experiences, as criticism increased, anxiety with mothers increased. Mothers are often expected to be the primary nurturers for their children (Zontini, 2007). Thus, criticism from mothers may be especially detrimental to adolescents’ fears of rejection. Further, research suggests that mothers may be emotionally expressive with their children (Fivush, Brotman, Buckner, & Goodman, 2000). Therefore, future research should examine the extent to which maternal criticisms are emotion-focused or constructive in nature, and the role that different types of criticisms may play in attachment outcomes.

Finally, as pressure increased, avoidance with fathers increased. Pressure from fathers may be perceived as stressful or coercive, which may explain why adolescents wish to distance themselves from their fathers when they feel pressured. This may be especially true as adolescents mature, as they may desire more autonomy and decision-making power. Future research should examine the changing role of pressure in determining security in father-child relationships during childhood, adolescence, and emerging adulthood.

Overall, these findings speak to the importance of specific relational experiences with parents during adolescence. Specifically, satisfaction and approval are related to attachment outcomes with both mothers and fathers. Additionally, companionship, support, and pressure are related to attachment outcomes with fathers, whereas criticism is related to attachment outcomes with mothers. Conflict and disclosure with parents do not appear to be related to adolescent attachment trajectories. These findings are consistent with previous research on the relations between conflict, disclosure, and attachment (Ducharme, Doyle, & Markiewicz, 2002). However, these relational experiences should not be overlooked during

adolescence, as these factors may indirectly play a role in attachment outcomes. For instance, the manner in which parents and adolescents interact during situations of conflict (e.g., promoting autonomy and relatedness) can impact attachment security (Allen et al., 2004; Van Ryzin & Leve, 2012). Thus, it is important that these relational experiences continue to be examined, particularly in environments that are especially high in conflict or low in disclosure. Although our hypotheses regarded the value of relationship experiences in predicting attachment outcomes, it is likely that the relationships between attachment and relationship experiences are reciprocal. Therefore, the potential for changes in attachment to lead to changes in specific relationship experiences should also be considered for each of the findings from the current study.

### Limitations and Future Directions

This longitudinal study offers insight into the malleability of attachment during adolescence and the relational factors that are related to attachment over time. With insight into the factors that are most predictive of attachment outcomes, researchers and interventionists can focus their efforts on improving attachment outcomes on the factors that truly matter during adolescence. However, there are several limitations to this study that should be considered.

First, as with most longitudinal research, attrition occurred during the study. Only 110 of the initial 223 participants remained by the final time point. However, restricted maximum likelihood was utilized to account for potential issues arising from missing data by utilizing all available data and generating unbiased estimates of variance and covariance parameters, much like multiple imputation techniques (Schafer & Graham, 2002; West, Welch, & Galecki, 2006). Thus, it is unlikely that differences in attachment over time were due to selective attrition.

This study relied on questionnaires, which have the potential for low reliability. Although reliability was good for measures of relationship experiences and attachment avoidance, it was low for attachment anxiety. This could be due to variation in adolescents' willingness to endorse different items in the measure. For instance, many adolescents may be disinclined to endorse "extreme" items regarding parental abandonment, whereas a majority of adolescents may find it suitable to endorse "normative" items regarding parental dependability. However, all items were included to encompass the wide range of possible responses by adolescents at both the high and low ends of the anxiety dimension. The Adult Attachment Scale was used because this dataset was part of a larger study of adolescents' lives with their parents, friends, and romantic partners. Thus, an attachment measure that was applicable to multiple types of relationships was necessary. The constructs in this measure are based on Hazan and Shaver's (1987) attachment style measure, which the authors have shown to be related to individuals' perceptions of the quality of their relationships with their parents. Furthermore, items in the Adult Attachment Scale are naturally phrased to focus on the general thoughts of an individual about him or herself, rather than an individual's thoughts about a specific partner. Thus, we believe this measure is quite suitable for assessing adolescents' attachment to parents.

An additional concern of using questionnaires is shared-method variance. In order to address this concern, both adolescent and parent reports of relationship experiences were utilized in

predicting attachment outcomes. This method is useful for accounting for potential biases in how adolescents may perceive the parent-child relationship. For instance, some adolescents may be overly sensitive to pressure from parents, even when parents are utilizing normative pressure to promote positive behaviors in their adolescents. Thus, the composite scores of relationship experiences were likely representative of the true nature of these relationships. It is important to note that accounting for adolescents' perceptions of their relationship experiences with parents is important, as perceptions themselves may be important in determining attachment outcomes (Sheehan & Noller, 2002). For instance, when adolescents perceive that their parents approve of their actions, they may feel more secure in these relationships, even if parents are not always approving. Future research should also consider alternative methods of assessing the impact of relationship experiences on attachment. For instance, self-reports or observations of parent-child relationship experiences could be examined in tandem with interview measures of attachment.

A similar concern is that changes in attachment may elicit positive or negative relationship experiences. Sullivanian theory (1953) postulates that insecure attachment can lead to maladaptive coping patterns in interpersonal situations, which may lead to loneliness and ostracism (Buhrmester & Furman, 1986). Similarly, anxiety may lead to socially undesirable behaviors, which may pose a threat to the quality of adolescents' relationships (Buhrmester & Furman, 1986). Although longitudinal data can assess congruent changes in relationship experiences and attachment outcomes, it cannot firmly establish causality between variables. However, this study does indicate that changes in relationship experiences are related to changes in attachment. Because these variables may be reciprocally related, future research should utilize experimental methodologies for revealing causality among these relationships. For instance, eliciting specific relationship experiences in a lab setting and then measuring attachment security could reveal how relationship experiences cause short-term changes in attachment.

Finally, this study examined an ethnically homogenous sample of middle-class families from a suburban area (i.e., low-risk). These results, therefore, may not be applicable to adolescents from high-risk environments. For instance, although the current study found that anxiety and avoidance decreased across adolescence, research on high-risk adolescents has found increases in attachment insecurity over time (e.g., Allen et al., 2004; Weinfield et al., 2000). Thus, the risk inherent in adolescents' environments should be taken into account when applying the findings of this study outside of relatively low-risk populations.

Despite the limitations in the current study, these findings shed light on the potential for future interventions to help adolescents feel more secure in their relationships with parents. Security with parents may lead to more secure relationships outside of the parent-child relationship (Doyle et al., 2009). Interventions based on this study should encourage parents to improve their relationships with adolescents during this period, with a focus on factors that are most highly related to optimal attachment outcomes. Furthermore, interventions should encourage mothers and fathers to focus on the specific factors that have been shown to influence their relationships with adolescents (i.e., approval, satisfaction, and criticism for mothers; approval, satisfaction, support, companionship, and pressure for fathers). Above all, this research indicates that it is still possible to improve relationships with adolescents

during this time, which may have important relational outcomes later in life with parents, friends, and romantic partners. Although adolescents may be increasing their time spent with friends and romantic partners, the role of mothers and fathers in adolescents' development is still crucial during this time.

## Conclusion

This study offers a unique contribution to existing literature on adolescent attachment. By utilizing longitudinal reports from adolescents, mothers, and fathers, a comprehensive view of parent-child relationships throughout adolescence is presented. Overall, these findings suggest that specific positive (companionship, satisfaction, approval, support) and negative (pressure, criticism) relationship experiences are related to adolescent attachment trajectories. This study also highlights that attachment can be influenced by an adolescent's gender. The remaining individual variation in attachment and attachment trajectories after accounting for these factors suggests that more research is needed to uncover other factors that may be important in determining adolescent attachment outcomes.

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**Table 1**

## Example Items and Mean Reliabilities of Relationship Experience Constructs

Relationship Experience	Example Item	Mean $\alpha$
Support	How often do you turn to this person for support with personal problems?	0.82
Satisfaction	How satisfied are you with your relationship with this person?	0.89
Disclosure	How often do you share secrets and private feelings with this person?	0.86
Approval	How much does this person like or approve of the things you do?	0.79
Companionship	How often do you spend fun time with this person?	0.79
Conflict	How often do you and this person get mad at or get in fights with each other?	0.87
Criticism	How often does this person point out your faults or put you down?	0.81
Exclusion	How often does it seem like this person ignores you?	0.62
Pressure	How often does this person push you to do things that you don't want to do?	0.77
Power	How often does this person get their way when you two do not agree about what to do?	0.59

*Note.* Mean  $\alpha$  is based on adolescent, mother, and father reports at grades 6, 8, 10, and 12. Adolescents, mothers, and fathers responded to all items on a scale from 1 (Never or hardly at all) to 5 (Always or extremely much), where higher scores indicate more of the experience in the relationship.

**Table 2**

Items Assessing Attachment Avoidance and Anxiety With Mothers and Fathers

Item	Mother	Father
<b>Avoidance (Mean <math>\alpha</math> = .81)</b>		
I am comfortable depending on these people and having them depend on me. (R)	_____	_____
I find it relatively easy to get close to these people. (R)	_____	_____
I do not worry about these people getting too close to me. (R)	_____	_____
I get nervous when these people get too close.	_____	_____
I am somewhat uncomfortable being close to these people.	_____	_____
I find it difficult to allow myself to depend on these people.	_____	_____
These people want to be closer to me than I feel comfortable being.	_____	_____
<b>Anxiety (Mean <math>\alpha</math> = .64)</b>		
These people do not seem to want to get as close as I would like.	_____	_____
I am not sure that I can always depend on these people to be there when I need them.	_____	_____
I worry that these people do not really care for me.	_____	_____
I worry that these people will not want to stay with me.	_____	_____
My strong desire to get really close sometimes scares these people away.	_____	_____

*Note.* (R) indicates that item was reverse coded. Participants provided ratings from 1 (False) to 5 (Very True), where higher scores indicated higher avoidance or anxiety.

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**Table 3**  
Relationship Experiences and Attachment With Mothers Across Grade and Gender

	6		8		10		12		Overall Min	Overall Max
	Male	Female	Male	Female	Male	Female	Male	Female		
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	
Support	3.90 (.68)	3.98 (.68)	3.20 (.75)	3.53 (.79)	3.04 (.79)	3.43 (.81)	3.05 (.78)	3.33 (.85)	1.17	5.00
Satisfaction	4.25 (.55)	4.23 (.64)	3.95 (.68)	3.89 (.72)	3.85 (.68)	3.85 (.65)	3.82 (.76)	3.70 (.77)	1.17	5.00
Disclosure	3.13 (.78)	3.50 (.82)	2.63 (.77)	3.11 (.85)	2.57 (.88)	3.11 (.84)	2.66 (.83)	2.91 (.85)	1.00	5.00
Approval	4.14 (.51)	4.11 (.58)	3.85 (.64)	3.92 (.55)	3.87 (.67)	3.94 (.64)	3.94 (.53)	3.87 (.67)	1.83	5.00
Companionship	3.71 (.62)	3.70 (.61)	3.30 (.64)	3.48 (.61)	3.01 (.65)	3.23 (.68)	2.79 (.64)	2.92 (.64)	1.50	5.00
Conflict	2.53 (.70)	2.56 (.71)	2.58 (.71)	2.70 (.75)	2.55 (.69)	2.57 (.64)	2.45 (.73)	2.52 (.79)	1.00	4.67
Criticism	1.80 (.49)	1.90 (.68)	1.91 (.57)	1.98 (.71)	1.89 (.58)	1.91 (.68)	1.81 (.58)	2.01 (.83)	1.00	4.33
Exclusion	1.77 (.51)	1.82 (.61)	1.88 (.54)	1.82 (.51)	1.75 (.42)	1.72 (.51)	1.62 (.44)	1.82 (.63)	1.00	4.00
Pressure	2.41 (.66)	2.32 (.60)	2.44 (.59)	2.50 (.68)	2.40 (.63)	2.36 (.70)	2.25 (.59)	2.16 (.77)	1.00	4.33
Power	3.40 (.63)	3.29 (.61)	3.42 (.57)	3.38 (.59)	3.25 (.53)	3.27 (.58)	3.14 (.51)	2.98 (.62)	1.33	4.83
Avoidance	1.90 (.74)	1.64 (.72)	1.99 (.84)	1.70 (.85)	2.12 (.87)	1.78 (.91)	1.81 (.89)	1.74 (.75)	1.00	5.00
Anxiety	1.43 (.56)	1.47 (.62)	1.49 (.62)	1.39 (.51)	1.49 (.56)	1.41 (.61)	1.26 (.42)	1.38 (.60)	1.00	4.00

*Note.* Overall Min and Max based on minimum and maximum for each construct across all grades when collapsed across gender.

**Table 4**

Relationship Experiences and Attachment With Fathers Across Grade and Gender

	6		8		10		12		Overall Min	Overall Max
	Male	Female	Male	Female	Male	Female	Male	Female		
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>		
Support	3.46 (.74)	3.45 (.77)	2.91 (.70)	2.93 (.76)	2.74 (.75)	2.89 (.71)	2.68 (.67)	2.93 (.77)	1.00	4.67
Satisfaction	4.16 (.61)	4.19 (.67)	3.85 (.62)	3.89 (.71)	3.84 (.58)	3.73 (.65)	3.88 (.56)	3.67 (.66)	1.00	5.00
Disclosure	2.72 (.69)	2.74 (.82)	2.37 (.67)	2.37 (.71)	2.41 (.80)	2.41 (.68)	2.36 (.69)	2.37 (.67)	1.00	4.67
Approval	3.93 (.57)	3.96 (.57)	3.60 (.55)	3.84 (.58)	3.60 (.57)	3.81 (.66)	3.69 (.53)	3.85 (.64)	1.67	5.00
Companionship	3.60 (.59)	3.49 (.69)	3.32 (.62)	3.21 (.68)	3.08 (.62)	2.94 (.64)	2.82 (.72)	2.79 (.68)	1.00	4.67
Conflict	2.39 (.65)	2.26 (.70)	2.46 (.68)	2.42 (.68)	2.27 (.66)	2.42 (.71)	2.21 (.66)	2.23 (.68)	1.00	4.83
Criticism	1.96 (.56)	1.76 (.55)	2.08 (.60)	1.89 (.62)	1.94 (.52)	1.85 (.66)	1.79 (.53)	1.70 (.58)	1.00	4.00
Exclusion	1.97 (.49)	1.90 (.51)	1.91 (.43)	2.02 (.49)	1.86 (.48)	1.89 (.55)	1.67 (.44)	1.87 (.46)	1.00	3.67
Pressure	2.37 (.63)	2.20 (.53)	2.46 (.61)	2.32 (.53)	2.40 (.61)	2.36 (.67)	2.23 (.62)	2.09 (.71)	1.00	4.33
Power	3.41 (.57)	3.20 (.60)	3.42 (.52)	3.28 (.58)	3.30 (.53)	3.26 (.57)	3.13 (.56)	3.01 (.64)	1.17	5.00
Avoidance	1.98 (.77)	1.74 (.81)	2.06 (.85)	1.75 (.83)	2.03 (.76)	1.91 (.94)	1.80 (.79)	1.82 (.84)	1.00	5.00
Anxiety	1.53 (.60)	1.53 (.64)	1.54 (.63)	1.43 (.49)	1.55 (.51)	1.44 (.57)	1.29 (.42)	1.43 (.64)	1.00	4.20

*Note.* Overall Min and Max based on minimum and maximum for each construct across all grades when collapsed across gender.

**Table 5**  
REML Estimates for Conditional Models of Attachment Anxiety and Avoidance with Mothers

Parameter	Anxiety		Avoidance	
	Estimate	SE	Estimate	SE
<i>Fixed Effects</i>				
Intercept (B00)	1.50***	0.05	2.04***	0.07
Gender (B01)	-0.01	0.07	-0.25**	0.09
Time: Linear (B10)	-0.07*	0.03	-0.10*	0.04
Gender (B11)	-0.00	0.04	0.02	0.05
Support (B20)	0.03	0.05	-0.04	0.07
Satisfaction (B30)	-0.16**	0.05	-0.23**	0.07
Disclosure (B40)	-0.04	0.04	-0.08	0.06
Approval (B50)	-0.12*	0.05	-0.15*	0.07
Companionship (B60)	-0.00	0.05	-0.13 <sup>†</sup>	0.07
Conflict (B70)	-0.05	0.04	-0.03	0.06
Criticism (B80)	0.14**	0.05	0.09	0.07
Pressure (B90)	0.01	0.04	0.09	0.06
<i>Variance Components</i>				
Level 1 (E)	0.39		0.56	
Intercept (R00)	0.38***		0.38***	
Linear (R11)	0.14***		0.15 <sup>†</sup>	
Deviance	845.93		1238.05	
Number of Parameters	4		4	
AIC	853.93		1246.05	
Correlation of change and initial status ( $\tau_{01}$ )	-0.80***		-0.28***	

Note.

<sup>†</sup>  $p < .10$ .

\*  $p < .05$ .

\*\*  $p < .01$ .



.100) < *d*  
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**Table 6**  
REML Estimates for Conditional Models of Attachment Anxiety and Avoidance with Fathers

Parameter	Anxiety		Avoidance	
	Estimate	SE	Estimate	SE
<i>Fixed Effects</i>				
Intercept (B00)	1.61***	0.06	2.15***	0.07
Gender (B01)	-0.03	0.08	-0.25*	0.10
Time: Linear (B10)	-0.11***	0.03	-0.18***	0.04
Gender (B11)	0.01	0.04	0.06	0.05
Support (B20)	-0.00	0.05	-0.15*	0.07
Satisfaction (B30)	-0.22***	0.05	-0.27***	0.07
Disclosure (B40)	0.03	0.05	0.06	0.07
Approval (B50)	-0.11*	0.05	-0.15*	0.07
Companionship (B60)	-0.09†	0.05	-0.15*	0.07
Conflict (B70)	-0.03	0.04	-0.01	0.06
Criticism (B80)	0.03	0.05	-0.01	0.07
Pressure (B90)	0.05	0.05	0.13*	0.06
<i>Variance Components</i>				
Level 1 (E)	0.40		0.57	
Intercept (R00)	0.44***		0.48***	
Linear (R11)	0.17***		0.14	
Deviance	868.10		1203.48	
Number of Parameters	4		4	
AIC	876.10		1211.48	
Correlation of change and initial status ( $\tau_0$ )	-0.87***		-0.72***	

Note.

†  $p < .10$ .

\*  $p < .05$ .

\*\*\*  $p < .001$ .