ADOLESCENT BEHAVIOR PROBLEMS AND INTERPARENTAL CONFLICT: THE
MODERATING ROLE OF PARENT-CHILD ATTACHMENT

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The current study examined the role that parent-child attachment plays in the relationship between marital conflict and the development of behavior problems in adolescents. To evaluate the hypothesis that attachment moderates this relationship, 57 families were recruited via e-mail invitation sent to families that participated in local church youth groups, school organizations, and a treatment program designed for adolescents with behavior problems. One custodial parent and his/her adolescent child completed an online or paper version of a survey consisting of the Achenbach’s Behavior Checklists, the Inventory of Parent and Peer Attachment, and the Children’s Perception of Interparental Conflict Scale. Hypotheses were evaluated using Baron and Kenny’s (1986) procedures to test moderating effects with multiple regression analyses. Mother attachment demonstrated a significant moderation effect between the intensity of interparental conflict and the parent’s report of externalizing behavior problems. Specifically, at low conflict intensity levels, relative to low attachment security, high attachment security was associated with fewer externalizing behavior problems, whereas at high intensities of interparental conflict high attachment security was associated with more externalizing behavior problems.
ACKNOWLEDGEMENTS

I would like to thank all of the people that have been instrumental in supporting me through this journey. First, thank you to JD, my wonderful husband who has been so incredibly supportive, patient and kind. I really appreciate all of the sacrifices you have made to help me pursue my dream. You have been amazing and I am so grateful to you. Thank you to my parents who have never stopped believing in me and have given me so much encouragement and support throughout the years – I truly could not have done this without you! To my sister, Kendall, thank you for all of the pep-talks and inspiration when I’ve needed it the most. You are wonderful.

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Thank you!
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Children’s attachment organization influences how they interpret and respond to their environment throughout early and later development (Bowlby, 1973). Researchers have clearly demonstrated links between children’s attachment organization and the development of behavior problems (DeKlyen, Speltz, & Greenberg, 1998; Kidwell et al., 2010; Speltz, DeKlyen, & Greenberg, 1999; Yang, Cai, He, 2010), as well as children’s responses to interparental conflict (Cummings, Goeke-Morey, & Papp, 2004; Jenkins & Smith, 1991). Research has also demonstrated that when interparental conflict is present in the home, children will develop more behavior problems than if there was little or appropriately handled marital conflict (Davies & Cummings, 1994; Deklyen & Speltz, 2001; Emery, 1999; Fauber Forehand, Thomas, & Wierson, 1990). Despite evidence of the links between attachment, interparental conflict and behavior problems, little research has examined whether a secure attachment to parents can buffer the effects of interparental conflict on the development of behavior problems in adolescence. This study tests the hypothesis that attachment orientation moderates the association between interparental conflict and behavior problems among adolescents.

Attachment Theory

According to Bowlby (1951), an early environment in which the primary caregiver is warm, intimate and consistent contributes to better mental health. Bowlby (1982) posited that internal working models (IWM) of the self and others develop in the context of early child-parent interactions and are the mechanism by which continuity in attachment is achieved.
Children learn to manage distress through experiences with the primary caregiver, which then influence emotional regulation later in life (Schore, 2000). These early experiences influence the development of expectations of others and are incorporated into the IWMs, which then guide responses to other distressing events later in life.

Behaviorally, attachment bonds are related to the way individuals seek and maintain a certain degree of physical or emotional closeness to the object of attachment (Ainsworth & Bell, 1969). Attachment behaviors function to promote proximity to the attachment figure and are most easily observed in infancy in acts of clinging, following, smiling, crying and calling (Ainsworth & Bell, 1969). Essentially these behaviors are children’s attempts to signal the caregiver that they need comfort or protection. How caregivers respond to these behaviors will determine the strategies infants develop to maintain the attachment relationship. Over the course of the first year of life, infants’ patterns of proximity seeking behaviors become more ingrained and relatively stable attachment strategies are formed (Ainsworth, 1989).

Bowlby (1982) suggested that infants form IWMs that establish patterns of relating throughout the lifespan. IWMs are thought to be relatively stable and tend to persist in the years following their stabilization in childhood, although they may undergo changes or transitions as children age. Ainsworth, Blehar, Waters, and Wall (1978) identified three patterns of infant attachment: secure, avoidant and anxious/ambivalent. A fourth attachment pattern, disorganized, was later recognized by Main and her colleagues (Main, Kaplan, & Cassidy, 1985). Ainsworth (1989) asserted that as children move from childhood through adolescence to adulthood, the original attachment pattern to parents continues even though parents become less involved in their children’s lives.
Attachment and Behavior Problems

“Behavior problem” can be loosely defined as any behavior that causes disruption in the lives of children, their families, teachers and friends (American Psychiatric Association, 2000). Children’s behavior problems can take the form of externalizing or internalizing behaviors. Externalizing behaviors include aggressiveness, direct disobedience, behavioral disruptions, poor impulse control, and attention-seeking behaviors; whereas internalizing behaviors include withdrawal, depression, anxiety, avoidance and low self-esteem (Neighbors, Forehand, & Bau, 1997).

Research has demonstrated that insecure parent-child attachment relationships are linked to behavior problems, though it is still somewhat unclear what specific role parent-child attachment plays in behavior problems (Rossman & Rosenberg, 1992). DeKlyen and Speltz (2001) asserted that many behaviors later deemed behavior problems are simply attachment strategies of seeking comfort and proximity from caregivers. Cognitive-affective IWMs of parents and the self set the stage for a reciprocal relationship of respect, warmth and growth, or conversely hostility, distance and rigidity. When developing IWMs, children test out acceptable and unacceptable behaviors. If parents treat children with responsiveness, warmth and trust, they model how to establish the foundation for meaningful social relationships and behave appropriately to get needs met. If the parents respond to children in ways that foster the development of insecure attachment, however, children learn to behave in ways that set the foundation for mistrusting and/or ambivalent relationships with others. Despite being conflictual, the relational pattern that develops becomes predictable and somewhat comforting for the children, and subsequently poorly regulated emotions reinforced by the parent are then acted out with others.
It is widely accepted that parent-child interactions are strongly correlated with behavior problems in children. However, the specific aspects of the relationship that contribute directly to behavior problems are less understood. Most of the research regarding attachment focuses on mother-child attachment patterns and less research has concentrated on father-child attachment relationships. However, there is some evidence that school-aged males with both internalizing and externalizing behavior problems may experience low parental involvement, a lack of fatherly warmth and generally unaffectionate father-son relationships (Day & Padilla-Walker, 2009; Dodge, Coie, & Lynam, 2006; Loukas, Zucker, Fitzgerald, & Krull, 2003). In a national sample that over represented minorities, Mosley and Thompson (1995) found that fathers’ positive engagement, even after controlling for maternal aspects, was associated with fewer internalizing and externalizing behaviors among their children. Although there is limited research on father-child attachment, many researchers have linked other aspects of early father-child relationships with later functioning, such as peer relationships (Verschueren & Marcoen, 2005; Youngblade & Belsky, 1992). The current study examines the moderating role of both mother-child and father-child attachment in the relationship between marital conflict and behavior problems.

Marital Conflict and Behavior Problems

Many researchers have demonstrated a link between marital conflict and child behavior problems (e.g., Jenkins & Smith, 1991; Cummings, Goeke-Morey, & Paap, 2004). The literature identifies six critical factors in predicting how children will react to marital conflict: frequency, intensity, duration, resolution, focus, and physical aggression (Davies & Cummings, 1994; Goodman, Barfoot, Frye, & Belli, 1999; Grych, & Fincham, 1990). When interparental conflict occurs regularly, with a high intensity and is long-lasting, children will likely have a stronger
reaction than if the arguments are short, infrequent and mild. Through trial and error, some children may learn that the most effective way of breaking up the argument is to become aggressive and act out in various destructive ways (Davies & Cummings, 1994; Grych & Fincham, 1990; Marcus, 2004). Reinforcement for externalizing behaviors occurs if the behavior is successful in stopping the marital argument.

Research also indicates that marital conflict is related to children’s cognitive and affective functioning. According to Grych and Fincham (1990), children’s internal processing of marital conflict involves two steps: (a) children recognize that there is some sort of disruption and respond emotionally to it, and (b) children attribute meaning, understanding, causality and responsibility for the conflict. Children then develop responses to the conflict and learn by trial and error the most effective means of coping. Grych and Fincham argued that there are distal and proximal factors that influence the cognitive and affective processing of the conflict. Distal factors are relatively stable qualities such as gender, temperament and previous experience with marital conflict. Proximal factors include expectations of the conflict and parent mood.

The Current Study: Attachment, Marital Conflict and Behavior Problems

Secure attachment organization may contribute to positive behavioral adaptations, particularly in terms of its influence on social interaction. It has been well documented that strong social support and secure attachment relationships can be protective factors against the development of behavior disorders (Pierrehumbert, Miljkovitch, Plancherel, Halfron & Ansermet 2000). In families with high levels of marital conflict, secure parent-child attachment may decrease the child’s risk for developing behavior disorders, whereas insecure parent-child attachment may exacerbate the risk (El Sheikh & Elmore-Staton, 2004). Secure attachment
relationships may serve as protection against the development of behavior disorders in the face of interparental conflict because they provide the children with positive IWMs of self and others. These IWMs make it less likely that the children will engage in self-blame or lose faith in their parents’ ability to provide a safe environment.

The current study examined how parent-child attachment, perceived interparental conflict, and their interaction contributes to behavior problems among adolescents. It was hypothesized that more severe interparental conflict is associated with more internalizing and externalizing behaviors. In addition, it was expected that greater security of attachment to one or both parents will predict fewer behavior problems. Third, based on earlier research demonstrating that supportive parent-child relationships can buffer the effects of marital conflict (Stocker et al., 2003), it was predicted that parent-child attachment moderates the relationship between interparental conflict and adolescent’s internalizing and externalizing behaviors.

Method

Sample

The sample consisted of 57 parent-child dyads that had a child between the ages of 12 and 17. The custodial parent’s mean age was 45.77 (SD = 5.60) and the target child’s mean age was 14.54 (SD = 1.92). Mothers constituted the majority of parent respondents totaling 38 (66.7%), and there was a fairly even split in gender among the adolescents with 28 male and 29 female respondents. The self-identified ethnicities of the custodial parents consisted of 93% White/European American, 3.5% African American, 1.8% Asian American, and 1.8% Native American. The self-identified ethnicities of the adolescents consisted of 91% White/European American, 5.3% African American, 1.8% Asian American, and 1.8% Native American.
Regarding the educational status of the responding parent, 8.8% held a doctoral degree, 28.1% a master’s degree, 57.9% a bachelor’s degree, and 5.3% a high school degree. The levels of combined family income varied, with 63.2% reporting income above $100,000, 12.3% between $75,001 - $100,000, 14% between $50,001 - $75,000, 8.8 between $35,001 - $50,000, and 1.8 between $20,001 - $35,000. With respect to current marital status, 77.2% of participants reported intact marriages, 15.8% were blended/cohabitating, and 7% were one-parent headed households.

**Instruments**

Participating parents completed a demographic questionnaire and responded to questions about the adolescent participant and their family composition. Adolescents provided background information about their perception of their relationship with their current parents, and adolescents from blended/cohabitating families were instructed to fill out additional questions that assessed their relationships with their parents’ current partners.

Marital conflict was assessed using the Child Perception of Interparental Conflict Scale (CPIC; Grych, Seid, & Fincham, 1992), which asks children to answer questions regarding their feelings and thoughts when they hear their parents argue. The three subscales used to evaluate the current hypotheses are frequency, Intensity, and perceived threat. Six items make up the frequency scale, which includes statements like, “I never see my parents arguing or disagreeing.” The Intensity scale includes seven items that are similar to statements like, “When my parents have an argument they yell at each other.” Six items make up the perceived threat scale, including statements like “I get scared when my parents argue.” Each item is rated on a 3-point likert scale, ranging from 0 = *not true* to 2 = *true* In addition, adolescents in
divorced/blended/cohabitating families were instructed to complete the CPIC twice: once with regards to the conflict between his or her biological parents and a second time with regard to the custodial parent and his or her current spouse or cohabitating partner. The CPIC has been mainly used for children between the ages of 9 and 12, but can be used with older and younger children (Bickham & Fiese, 1997). The current study found Cronbach alphas of .88 for the frequency scale, .80 for the Intensity scale, and .70 for the perceived threat scale.

Parent-child attachment was measured using the Mother and Father scales of 75-item Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987), which was developed based on Bowlby’s attachment theory to assess how well parents and friends serve as sources of security for adolescents. Although, the IPPA is made up of Mother, Father and Peer Scales, each comprised of 25 items, only the Mother and Father Total Attachment scales were used in this study. Respondents indicated how often each statement is true for them on a Likert-type scale, ranging from 1 = almost never to 5 = almost always. Higher scores indicate more secure attachment. The Cronbach’s alpha coefficients from the present study for the Mother and Father Total Attachment Scales were .96 and .97, respectively.

To determine the current level of child behavior problems, the Child Behavior Checklist (CBCL; Achenbach, 1991) was administered to the participating parent and its counterpart for children, the Youth Self Report (YSR), was used to assess these same characteristics from the viewpoint of the adolescent. The CBCL and YSR each consist of 112 questions that require respondents to indicate how true a statement with respect to the child’s interests, hobbies, chores, friends and academic performance as compared to others of similar ages. The composite internalizing and externalizing Scales were used in the present study. Cronbach’s alpha coefficients for these scales are .94 and .93 for the CBCL internalizing and externalizing Scales,
respectively, and are .91 and .90 for the YSR internalizing and externalizing Scales. Despite the well-accepted standard of using T-scores for ease of interpreting the YSR and CBCL, the current study used raw scores based on Achenbach and Rescorla’s (2001) recommendation, as well as a recent finding suggesting that T-scores truncated data and reduced variability among low-scoring individuals (Thurber & Sheehan, 2012).

**Procedures**

After obtaining approval from the university’s Internal Review Board (Appendix O), the current sample was recruited via an e-mail invitation that was distributed to current graduate students, local church youth groups, school organizations, and individuals whose child participated in a treatment program designed for adolescents with behavior disorders. Interested parents with a child between the ages of twelve and seventeen contacted the principal investigator (PI) and indicated whether they would like to complete the survey through ZOPE, a secure online server, or via a paper version sent to them through the mail. The PI created a secure username and password and e-mailed instructions to 12 participants (21%) and mailed an exact printout of the online survey to 45 participants (79%). For their participation, each adolescent received a $10 money order and each parent was entered into a raffle to win one of four $100 money orders. Data were entered into SPSS and examined for missing values and data entry errors. No data was missing from the three instruments used in this study.

The assumption of normality was assessed by analyzing residual plots and histograms of residuals and by examining skew and kurtosis. Assumptions of linearity, independence of errors and homoscedasticity were found to be within normal limits. All instruments were found to be reliable and no significant outliers were identified when standardized residual plots and values
greater than 3.3 were considered. In addition, VIF and Condition Indices indicated no concerns regarding multicollinearity and predictor variables were centered prior to analyses.

Results

Table 1 presents the means, standard deviations and intercorrelations for variables used in the study. YSR internalizing scores were significantly related to the ages of the adolescent ($r = .311, p < .05$) and responding parent ($r = .448, p < .05$). No other demographic variable, (e.g., sex, ethnicity, income, current marital status) was related to the dependent variables. Based on these findings, the age of the teen and age of the responding parent were controlled for in analyses for YSR internalizing outcomes. Intercorrelations among study variables were in the expected direction. While a highly significant correlation between CPIC frequency and Mother Attachment ($r = -.740$) suggested multicollinearity, the VIF statistic and Condition Index indicated these variables are within the normal range. In addition, the predictor variables were centered and entered into the models in a hierarchical manner to minimize variance overshadowing.

Hierarchical multiple linear regression models were run using IBM SPSS (Version 20) to test the hypothesis that parent-child attachment moderates the relationship between interparental conflict and behavior problems. To control for family-wise error, a Bonferroni correction was used to adjust the overall alpha level. A “family” is defined by the smallest unit of selective inference in the analysis. For the purposes of this study, the four outcome variables, YSR and CBCL internalizing and externalizing Behavior Problems each comprised a family, so the adjusted alpha level of $0.05/4 = .0125$ was used for all multiple regression models.
Table 1

*Bivariate Correlations, Means, and Standard Deviations for all Continuous Variables*

<table>
<thead>
<tr>
<th></th>
<th>YSRI</th>
<th>YSRE</th>
<th>CBCLI</th>
<th>CBCLE</th>
<th>IPPAF</th>
<th>IPPAM</th>
<th>CPICI</th>
<th>CPICF</th>
<th>CPICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>YSRI</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>YSRE</td>
<td>.532**</td>
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<tr>
<td>CBCLI</td>
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<td>.206</td>
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<td></td>
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</tr>
<tr>
<td>CBCLE</td>
<td>.432**</td>
<td>.530**</td>
<td>.592**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>IPPAF</td>
<td>-.382**</td>
<td>-.239</td>
<td>-.389*</td>
<td>-.406**</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>IPPAM</td>
<td>-.614**</td>
<td>-.491**</td>
<td>-.280*</td>
<td>-.320*</td>
<td>.624**</td>
<td></td>
<td></td>
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<tr>
<td>CPICI</td>
<td>.231</td>
<td>.430**</td>
<td>-.092</td>
<td>.111</td>
<td>-.297*</td>
<td>-.486**</td>
<td></td>
<td></td>
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<tr>
<td>CPICF</td>
<td>.439**</td>
<td>.317*</td>
<td>.185</td>
<td>.148</td>
<td>-.512**</td>
<td>-.740**</td>
<td>.723**</td>
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<tr>
<td>CPICT</td>
<td>.301*</td>
<td>.308*</td>
<td>.126</td>
<td>.064</td>
<td>-.145</td>
<td>-.339**</td>
<td>.394**</td>
<td>.366**</td>
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</table>

**Note.** N = 57. YSRI = YSR internalizing Scale; YSRE = YSR externalizing Scale; CBCLI = CBCL internalizing Scale; CBCLE = CBCL externalizing Scale; IPPAF = IPPA Father; IPPAM = IPPA Mother Scale; CPICI = CPIC Intensity Scale; CPICF = CPIC frequency Scale; CPICT = CPIC threat Scale. *p < .05, **p < .01, ***p < .001

Table 2 presents results for YSR and CBCL internalizing problems. In all YSR internalizing models, parent age was a significant positive predictor. This result indicates that as the age of the parent increases, there is an increase in the adolescents’ rating of internalizing behavior problems. In the YSR internalizing models with IPPA attachment to father as the moderator, IPPA attachment to father, CPIC threat, frequency, Intensity, and the interactions were not significant. In the YSR internalizing models with IPPA attachment to mother as the moderator, IPPA attachment to mother was a negative predictor, but CPIC threat, frequency and Intensity were not significant, nor were any of the interactions. This finding indicates that
adolescents’ perception of greater attachment security to mother was associated with their self-report of decreased internalizing behavior problems after controlling for age and threatening aspects of interparental conflict.

Table 2

*Multiple Linear Regression for Internalizing Behavior Problems*

<table>
<thead>
<tr>
<th>Explanatory Variable</th>
<th>YSR</th>
<th>CBCL</th>
</tr>
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<tr>
<td></td>
<td>BETA</td>
<td>R Square</td>
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<tr>
<td>Model 1a: threat and IPPA Father</td>
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<tr>
<td>Adolescent Age</td>
<td>.309</td>
<td>.096</td>
</tr>
<tr>
<td>Parent Age</td>
<td>.391</td>
<td>.210</td>
</tr>
<tr>
<td>Threat</td>
<td>.301</td>
<td>.296</td>
</tr>
<tr>
<td>IPPA Father</td>
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<td>.325</td>
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<td>Threat X IPPA Father</td>
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<td>.337</td>
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<tr>
<td>Model 1b: frequency and IPPA Father</td>
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<tr>
<td>Adolescent Age</td>
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<td>.096</td>
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<tr>
<td>Parent Age</td>
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<tr>
<td>Frequency</td>
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<td>IPPA Father</td>
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<td>Frequency X IPPA Father</td>
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<td>Model 1c: Intensity and IPPA Father</td>
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<td>Parent Age</td>
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<td>Intensity</td>
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<td>Model 1d: threat and IPPA Mother</td>
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<td>Adolescent Age</td>
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<td>Parent Age</td>
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<tr>
<td>Threat</td>
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<td>Threat X IPPA Mother</td>
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<td>.096</td>
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<td>Frequency</td>
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<td>Model 1f: Intensity and IPPA Mother</td>
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<td>.096</td>
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<tr>
<td>Intensity X IPPA Mother</td>
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<td>.435</td>
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Note. N = 57. *p<.05, **p<.01, ***p<.001
In the CBCL internalizing models with IPPA attachment to father as the moderator, IPPA attachment to father was a negative predictor; however, CPIC threat, frequency and Intensity were not significant, nor were any of the interactions. This finding indicates that adolescent’s perception of greater attachment security to father was associated with parent’s report of decreased internalizing behavior problems after controlling for all aspects of interparental conflict. For the CBCL internalizing model with attachment to mother as the moderator, attachment to mother was a significant negative predictor only after controlling for the effect of CPIC Intensity, indicating that adolescents’ perception of greater attachment security to mother was associated with parent-reported decreased internalizing behavior problems after controlling for intensity of interparental conflict.

Table 3 presents the results for YSC and CBCL externalizing behavior problems. In the YSR externalizing models, CPIC threat and frequency were not significant predictors, but CPIC Intensity was a significant positive predictor. This result indicates that as the intensity of conflict increases, there is an increase in the rating of externalizing behavior problems from the adolescents’ perspective. Although IPPA attachment to father was nonsignificant, IPPA attachment to mother was a significant negative predictor. In addition, a marginally significant interaction effect for CPIC frequency and IPPA Father emerged. Figure 1 shows Modgraph results indicating (Jose, 2004) show that father attachment demonstrated a marginally significant moderation effect between the frequency of interparental conflict and the adolescent’s self-report of externalizing behavior problems. However, contrary to predictions, when there was infrequent interparental conflict, an adolescent’s attachment to his or her father had negligible influence on his or her externalizing behavior, but at higher frequencies of conflict, greater attachment security to father was associated with an increase in externalizing behavior.
Table 3

Multiple Linear Regression for Externalizing Behavior Problems

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<tr>
<th>Explanatory Variable</th>
<th>YSR</th>
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<th>CBCL</th>
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<td>BETA</td>
<td>R Square</td>
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<tr>
<td>Intensity</td>
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Note. N = 57. *p < .0125

Figure 1. Moderation by father attachment on YSR externalizing behavior problems and CPIC frequency.
In the CBCL externalizing models, IPPA attachment to father was a negative predictor, but attachment to mother, and CPIC threat, frequency, and Intensity were not significant predictors. In addition, marginally significant interaction effects were found for CPIC frequency and IPPA Mother, as well as CPIC Intensity and IPPA Mother. As demonstrated in Figure 2, Modgraph results (Jose, 2004) show that mother attachment demonstrated a marginally significant moderation effect between the frequency of interparental conflict and the parent’s report of externalizing behavior problems. Specifically, when there was infrequent interparental conflict, greater attachment security to mother was associated with lower levels of externalizing behavior, but at higher frequencies, the effect of attachment was negligible. As demonstrated in Figure 3, Modgraph results (Jose, 2004) show that mother attachment demonstrated a significant moderation effect between the intensity of interparental conflict and the parent’s report of externalizing behavior problems. Specifically, at low conflict intensity levels, relative to low attachment security, high attachment security was associated with fewer externalizing behavior problems, whereas at high intensities of interparental conflict high attachment security was associated with more externalizing behavior problems.

Figure 2. Moderation by mother attachment on CBCL externalizing behavior problems and CPIC frequency.
Discussion

The present study sought to examine the roles of parent-child attachment and interparental conflict in the exhibition of internalizing and externalizing behavior problems reported by adolescents and parents. Results did not support the theoretical prediction that a secure attachment to either parent mitigates the negative effect of interparental conflict on behavior. The following discussion will first address findings demonstrating moderating relationships among interparental conflict, attachment relationships and behavior problems. Subsequently, significant findings among demographic variables will be addressed. Finally, clinical and theoretical implications, limitations of the current study, and implications for future researchers will be addressed.

Results did not support the hypothesis that a secure parent-child attachment to either parent can serve as a protector factor in the development of behavior problems in the context of interparental conflict. In fact, models with significant interaction terms yielded results that directly contradicted the hypothesis and existing theoretical frameworks. Results indicated that

Figure 3. Moderation by mother attachment on CBCL externalizing behavior problems and CPIC intensity.
father attachment moderated the relationship between frequency of interparental conflict and adolescent’s perception of externalizing behavior problems. However, contrary to predictions, when there was infrequent interparental conflict, an adolescent’s attachment to his or her father had negligible influence on his or her externalizing behavior, but at higher frequencies of conflict, greater attachment security to father was associated with an increase in externalizing behavior. Also, when interparental conflict was characterized by low intensity, an adolescent’s attachment to mother was associated with lower levels of externalizing behavior, but when the conflict was more intense, greater security of attachment to mother was associated with an increase in the risk of externalizing behavior.

Many factors could influence this surprising finding. Results suggest that while a secure parent-child attachment can provide some protection against the development of behavior problems, its impact is limited to environments with low interparental conflict. In support of this conclusion, when Dekovic (1999) examined multiple risk and protective factors and the impact they had on the development of internalizing and externalizing behavior problems during adolescence, she found that parent-child attachment was not as important as peer attachment, and neither moderated the relationship between the risk factors and behavior problems. Dekovic concluded that the additive effect of all risk factors significantly contributed to the development of behavior problems and there was no main or moderating effect from any of the protective factors either individually or cumulatively (Dekovic, 1999).

These findings could also be understood if one considers the possibility that instead of using the secure attachment as a source of comfort, the adolescent begins to question the authenticity of that attachment based on a fear that parental fighting could lead to divorce. In particular, if teenagers see increasing conflict and decreasing love between their parents, they
may wonder if their parents might also stop loving them. Davies and Cummings’ (1994) Emotional Security Hypothesis, highlights the roles of both the parent-child attachment relationship and the interparental bond and the effect both have on the children’s reaction to marital conflict. According to this hypothesis, marital conflict threatens the children’s emotional security by disrupting discipline, inducing stress, lessening parental availability, impairing parental sensitivity and endangering children’s emotional and/or physical well-being. Consequently, marital discord may have a negative impact on children’s emotional security, regulation of emotions, and ability to cope with future disruptions. Along with negatively affecting children’s emotional regulation, low emotional security causes children to seek alternative means to reduce their anxiety. To end the stress, children might attempt to intervene, ask parents to stop, or use distraction strategies, such as getting hurt or exhibiting externalizing behaviors to draw the parents’ attention away from the marital conflict. It is possible that at higher levels of attachment security, the adolescent feels more threatened by the interparental conflict and thus intensifies the acting out behavior in an attempt to detour the attention onto him/herself in order to detour attention away from conflict. Alternatively, it is also possible that these results reflect low variability in a small sample, so that a larger sample with a larger range of scores would produce different results.

Preliminary analyses indicated that in the current sample, older adolescents and older parents tend to report higher levels of internalizing behavior problems. The increased pressure to behave according to social norms in adolescence, as well as the increased cognitive functioning and ability to process events as opposed to acting out externally may have contributed to this finding. Developmentally, adolescents begin to rely more on their peers for approval and may internalize feelings in order to fit in with others. Also, due to their increased cognitive capacity,
teenagers have the ability to contain their experiences as opposed to reacting to them in the form of externalizing behavior. A possible explanation for the finding that adolescents of older parents exhibit more internalizing behavior problems could be the transmission of values and customs passed down from their parents. Older parents may have been raised in families where emotional expression was not valued nor encouraged, promoting an environment more conducive to withdrawal, shame, confusion and other internalizing problems. Older parents may also be more disengaged in general and less involved in the emotional lives of their adolescents, which could contribute to internalizing behavior problems.

Another interesting finding is that there were no significant interaction effects for internalizing behavior problems. While the current study’s finding of nonsignificance replicated a previous study (Howes, Matheson, & Hamilton, 1994), a recent meta-analysis explored this issue because there have been many contradictory findings about whether parent-child attachment is associated with internalizing behavior problems (Madigan, Atkinson, Laurin, Benoit, 2013). Madigan et al. concluded that overall insecure attachment is associated with internalizing behavior problems, but the effect sizes are not strong. Alternatively, the current study’s nonsignificant results may be due to the relatively high security of attachment in the sample and a lack of significant variability in the scores.

Clinical Implications

Based on current findings demonstrating that adolescents report more externalizing behavior problems when they perceive more interparental conflict, it is important that clinicians who work with adolescents and families look at the family system as an interconnected attachment network (Dallos & Vetere, 2011). In addition, clinicians should understand that an
adolescent’s attachment security can intensify the exhibition of behavior problems. In particular, the results of the current study, suggest that adolescents may act out in order to detour the interparental conflict towards themselves as a strategy to keep their parents together. Family therapists would benefit from viewing the behavioral symptoms as the adolescents attempt to maintain homeostasis within the family system. Therapy could also focus on helping adolescents verbalize his or her underlying fears and discuss them openly with his or her parents.

Results of the current study also can assist clinicians in conceptualization and treatment planning. Specifically, the role that age and attachment security plays in internalizing and externalizing behavior problems suggests that clinicians should assess and promote secure parent-child attachment bonds throughout childhood and adolescence. Clinicians can do this by teaching parents in effective communication skills (La Valley, 2009), emphasizing stability in caregiver behavior (Main, Hesse, & Kaplan, 2005), and emphasizing good parent mental health (Weinfield et al., 2000). Couples counseling may reduce interparental conflict and potential of parental divorce (Bretherton, Walsch, Lependorf, & Georgeson, 1997; Waters et al., 2000). In couples counseling, Davila (2006) recommends that the clinician follow four suggestions for enacting significant change in couples. These include: conducting an assessment of attachment security, conceptualize the controlling problem as attachment based, emphasize and support skills in addition to conflict resolution skills, and reduce abandonment fears and increase comfort with intimacy. Based on current results that attachment security alone did not buffer the development of behavior problems when there are various levels of marital conflict, it may also be beneficial to build adaptive coping skills in addition to support and conflict resolution skills. Emotion Focused Therapy has been found to be especially helpful in assisting couples in the de-
escalation of negative cycles, shaping new cycles of responsiveness and accessibility, and consolidating and integrating new ways of relating to one another (Johnson, 1996).

*Limitations and Directions for Future Research*

A strength of the current study was the inclusion of multiple informants on different aspects of adolescent functioning. The sample was recruited from clinical and nonclinical populations with the goal of generalizing to families with various levels of conflict who experience varying types and amounts of adolescent problem behavior including, acting out, impulsivity, social problems, withdrawal, and anxiety. However, adolescents with severe behavior problems (e.g., Oppositional Defiant Disorder, Attention Deficit/Hyperactivity Disorder, and Conduct Disorder) may have been unwilling or unable to complete the surveys. In addition, there was a minimal level of collaboration required between the parent and child in order to complete the survey. Specifically they both had to agree to participate and coordinate computer time or mail-in packets. Future research may consider alternate ways of gathering data to circumvent these limitations. Also, the fact that these parent-child dyads volunteered to participate in the current study could indicate a selective sampling bias.

No cause-and-effect conclusions can be drawn due to the correlational nature of the data. Future prospective and longitudinal studies may better address causal factors. In addition, alternate measures may allow for future researchers to gain a more complete perspective. For example, a higher N may be obtained if data is collected from only a parent or adolescent perspective. Additionally, future researchers should consider using alternative measures that are not susceptible to self-report biases. It is possible that participants in this study did not accurately report the frequency in which they engaged in behaviors that they considered
unattractive. Also, it is possible that adolescents could have feared that their parents would have seen their answers so they may have been hesitant to accurately report their true perceptions of their relationships with their parents or their perceptions of interparental conflict.

The current study’s findings suggest that mother and father attachment and interparental conflict influence adolescent behavior problems in distinct ways. Specifically, adolescents who have a secure attachment to a parent tend to exhibit less internalizing and externalizing behavior problems than adolescents with an insecure attachment. In addition, adolescents whose parents engage in less intense and less frequent interparental conflict and who perceive this conflict as less threatening tend to exhibit less internalizing and externalizing behavior problems, but attachment orientation does not necessarily moderate this relationship in predictable ways.

While the results of this study contribute to the field’s current understanding of the relationship between parent-child attachment and interparental conflict and the impact it has on internalizing and externalizing behavior problems, it is clear that further exploration is needed to better understand the complexity of how these two aspects of family functioning contribute to adolescent development.

References


Main, M., Hesse, E., & Kaplan, N. (2005). Predictability of attachment behavior and representational processes at 1, 6, and 19 years of age. In Klaus E. Grossmann, Karin Grossmann, and Everett Waters (Eds.), *Attachment from infancy adulthood*. The Guilford Press.


APPENDIX A

EXTENDED LITERATURE REVIEW
Introduction and Literature Review

In formulating his theory, Bowlby (1982) was predominately influenced by the psychodynamic principles governing behavior, but exploration led him to integrate aspects of other theories, including ethological, evolutionary, and cognitive elements. Using ethological principles, Bowlby (1982) proposed that infant attachment to caregivers is an instinctive behavior that had evolved over generations. These instinctive patterns of behavior are similar for all members of a species, usually run a set course and contribute to the survival of the species (Bowlby, 1969). In accordance with the ethological perspective, Bowlby (1973) hypothesized that infants are born with these instinctive behaviors, which then become organized into complex behavior systems that guide the individual’s interactions.

Attachment behaviors are most easily observed when children perceive threat. When children begin to sense danger, they become motivated to gain or maintain close contact with their primary caregiver for protection. In early life, simple separation from the attachment figure is the perceived danger, which affects attachment and exploratory behaviors (Sable, 2004). When consistently separated from the primary caregiver, the child becomes anxious and engages in behaviors to seek comfort through less adaptive means. The separations have a cumulative effect and can make the child more sensitive to periods of later separation from the primary caregiver or other attachment figures (Sable, 2004).

Infant Attachment Patterns

Securely attached infants use their caregiver as a secure base from which to explore their environment and retreat to in times of distress when they need comfort or protection (Ainsworth & Bell, 1969). Secure children tend to develop higher self-esteem and feel an inherent sense of
worthiness that comes from knowing that they are deserving of their caregiver’s attention and care (Calkins & Leerkes, 2011; Easterbrooks & Abeles, 2000). Avoidant infants do not seek comfort from their caregivers, but instead attempt to alleviate negative emotions through their own means and generally minimize emotions and distrust others; conversely, anxious/ambivalent infants are overly clingy and demanding, which reflects uncertainty regarding their caregivers’ availability and competency in providing security (Marchand, Schedler, & Wagstaff, 2004).

Main and her colleagues (1985) noticed some infants seemed insecure, but did not exhibit any definitive characteristics that would identify them as either avoidant or ambivalent. Main et al. categorized these infants as being disorganized/disoriented because they appeared dazed and exhibited mannerisms suggesting confusion and apprehension, including contradictory behavior upon reunions and separation from caregivers. Parents of disorganized children often reported trauma in their own childhoods and appeared embarrassed or flustered upon reunion with their children.

Ainsworth (1989) described how attachment organization is demonstrated throughout development. As children grow in relation to the attachment figure, they begin to learn the caregiver’s plans and motivations. Subsequently, children learn how to influence caregivers so their plans and actions align with what the children want. This is a learning process that is adaptive to all individuals and serves useful purposes throughout life (Gergely & Watson, 1996; Sroufe, 1979; 1976). With the development of cognitive processes and language, children can better understand the caregivers’ needs and plans, and thus tolerate separation better because the separations are not permanent and do not necessarily reflect upon their relationship with the caregiver. As children become more mobile and interested in exploring the environment, in the context of a secure attachment relationship children feel free to venture outside of previously set
comfort zones while knowing that the attachment figure is still there in times of distress when comfort and security is sought.

According to Ainsworth (1989), these patterns continue and will play out in important adult relationships, either allowing for productive and adaptive relationships, or contributing to unhealthy and disruptive relationships. Although individuals seek new objects of attachment (e.g., romantic partners and peers), this does not imply that the original bond with the primary caregiver no longer exists. For example, the response to the death of the primary caregiver demonstrates how the attachment bond endures through the changing dynamics of the relationship (Ainsworth, 1989).

Continuity of Attachment

According to Fraley (2002), there are two schools of thought regarding the stability of attachment: revisionist and prototype. The revisionist perspective claims that the internal working models that are established in infancy are relatively flexible and may be revised or altered depending on one’s experiences through life. The prototype perspective claims that there is a prototypical internal model of attachment, learned through interactions with the primary caregiver, and it remains intact although ongoing experiences may later contribute to alterations in attachment strategies. An extension of the prototype perspective is Fraley’s connectionist model (Fraley, 2007). This model asserts that an individual can have a global template as well as more specific representations. Specifically, if an individual interacts with multiple partners (i.e. parents, peers, romantic partners, etc.), a representation of core features of these significant relationships can be extracted and maintained into a more cohesive representation. All three
perspectives reflect the idea that while relatively stable, attachment patterns have the potential to change.

However, there is ongoing debate over how stable attachment security is throughout individual development. The majority of research has found that attachment security is stable throughout the developmental transitions from infancy to early adulthood (Hamilton, 2000; Waters, Merrick, Treboux, Crowel, & Albersheim, 2000; Waters, Weinfield, & Hamilton, 2000). Waters et al. (2000) showed that classification using Adult Attachment Interview was generally consistent with Strange Situation classification measured twenty years earlier. Hamilton (2000) found that continuity of attachment is dependent on attachment orientations. Specifically anxious/ambivalent individuals’ attachment style is more vulnerable to change, while secure and disorganized individuals are the least likely to change (Vice, 2005). Discontinuity in attachment patterns, on the other hand, appear to be related to significant negative life experiences, including divorce, separation, poverty and parental substance abuse (Hamilton, 2000; Waters et al., 2000; Weinfeld et al., 2000). For example, Weinfeld et al. found that when attachment classification did change, the new behaviors could be predicted based on the types of negative life experiences that the children encountered. Hamilton (2000) posited that insecurely attached individuals are more likely to experience negative life events than securely attached individuals, so a definitive statement cannot be made regarding whether secure attachment serves as a protective factor or other internal and external forces contribute to the management of negative life experiences.

IWMs are not deterministic of later behavior, but rather guide ongoing development in predictable ways. Although IWMs do not change drastically due to minor life events, they can be modified in response to major relationship shifts that occur in response to normative and non-normative transitions (Waters, Hamilton, Weinfield, 2000; Weinfeld, Whaley, & Egeland,
Research has suggested that changes in IWMS and discontinuity of attachment is associated with the significant illness or loss of a parent, primary caregiver, or child (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000), instability in caregiver behavior (Main, Hesse, & Kaplan, 2005), parental divorce (Bretherton, Walsch, Lependorf, & Georgeson, 1997; Waters et al., 2000), early family experiences (Weinfield, Sroufe, & Egeland, 2000), trauma (Main, Hesse, & Kaplan, 2005), child abuse (Egeland, Jacobvitz, & Sroufe, 1988; Waters et al., 2003; Weinfield et al., 2000), parent mental health (Weinfield et al., 2000). Allen and Land (1999) also proposed that the major interpersonal and cognitive transformations that occur in adolescence have the potential to cause significant discontinuities of attachment organization over the life span. However, due to increasing maturity in adolescence, it is likely that in the absence of severe stressors, attachment orientation becomes more stable as an individual ages (Allen, McElhaney, Kuperminc, & Jodl, 2004).

As individuals age, specific attachment behaviors change but demonstrate “coherence across transformations” (Sroufe, 1983) in the meaning and significance of behavioral and intrapsychic patterns. Individual proximity-seeking behaviors may change, but the underlying meaning and intent do not. Specifically, as children grow and develop, so do their manifestations of their attachment strategies. For example, a secure child will learn to verbal his or her needs to a caregiver or substitute caregiver like a teacher or babysitter. There is also evidence supporting the notion that infants who demonstrated various types of insecure attachment grow up to manifest attachment insecurity in theoretically consonant ways (Weinfield, Sroufe, Egeland, & Carlson, 1999). For example, anxiously attached infants may often demonstrate anxiety and depression in later life (Lee & Hankin, 2009). Children who demonstrate avoidant infant attachment patterns, as adolescents tend to blame others more and are viewed as more hostile.
than those considered securely attached (Suess, Grossmann, & Sroufe, 1992). Teyber (2006) posited that when children continually receive messages that they are not worthy of getting these needs met, evidenced by any of the insecure attachment orientations, they experience anxiety and develop a core conflict. This conflict is a struggle between primary instincts to survive and trying to understand what is wrong with them that is preventing their caregiver from meeting their basic needs. Typically these individuals seek a compromise by developing inflexible interpersonal coping styles resulting in various mental illnesses.

Assuming continuity of attachment across the lifespan, early researchers used the same terminology to describe parent-child attachment to romantic attachment orientation. Based on the Strange Situation paradigm, Ainsworth (1978) classified infants, as secure, avoidant, or anxious, and later Main, Kaplan, and Cassidy (1985) introduced disorganized. As researchers began to apply infant attachment patterns to romantic relationships, it became useful to designate romantic attachment categories that correspond to infant categories but better explain the manifestation of attachment strategies as they are exhibited by adults. Based on Ainsworth, Blehar, Waters, and Wall’s (1978) early work on attachment style classification across two dimensions, avoidance and anxiety, Bartholomew (1990) proposed that four romantic attachment styles can be derived from a combination of these two dimensions, which reflect internal working models of self and others. Bartholomew (1990) theorized that a negative view of self is closely related to anxiety about abandonment and that a negative view of others is closely related to avoidance. Individuals who demonstrate low avoidance and anxiety have a positive view of self and others and are described as having a “secure” attachment orientation. Individuals who demonstrate low avoidance and high anxiety have negative view of self and a positive view of others are described as having a “preoccupied” attachment orientation. Individuals who
demonstrate high avoidance and high anxiety have a negative view of self and others and are described as having a “fearful” attachment orientation. Individuals who demonstrate high avoidance and low anxiety have a positive view of self and a negative view of others are described as having a “dismissing” attachment orientation. As children develop and move from infancy to adolescence, they maintain consistency in attachment orientation and develop new attachment relationships.

Adolescent Attachment

In support of this theory, Freeman and Brown (2000) found that secure adolescents sought comfort from their mothers more than friends, boy/girlfriends and fathers. However, Ognibene and Collins (1998) found that college students with a secure attachment perceive and seek more support from friends and family, thus suggesting that the shift of significance from parent to peer attachment occurs in later adolescence or early adulthood. (Raja, McGee, & Stanton, 1992; Dekovic & Meeus, 1997; Paterson, Prior, & Field, 1995). Secure attachment to a parent promotes psychological health, well-being and the absence of psychological distress among adolescents (Wilkinson & Walford, 2001), however researchers have not found the same effects for quality of peer attachment (Greenberg, Siegel, & Leitch, 1983; Raja, McGee, & Stanton, 1992; Dekovic & Meeus, 1997; Paterson, Prior, & Field, 1995). A study by Ducharme, Doyle, and Markiewicz (2002) found that adolescents who were securely attached to their mother described less negative interactions with their parents, thought of themselves as more emotionally expressive, and reported less conflict in their peer relationships. Other studies have confirmed the findings that secure attachment to at least one parent promotes better self-esteem, sense of self, coping abilities and social competence (Patterson, Pryor & Field, 1994; Arbona,
2003). These studies suggest that adolescent attachment to a parent serves as a better protective factor against maladjustment than attachment to peers when the attachment orientation is secure. In contrast, adolescents with an insecure attachment were found to identify a boy/girlfriend or best friend as the person with whom they had a primary attachment over mothers (Freeman & Brown, 2000).

According to Mackey (2003), anxiously attached adolescents continue to behave in ways consistent with descriptions of anxiously attached infants, often appearing needy, demanding, immature, impulsive, and insecure. Focused primarily on their own needs and feelings, they tend to become defensive or conversely overly self-critical and passive.

Avoidant adolescents tend to present themselves as self-reliant, unwilling to accept help, and highly defensive (Mackey, 2003). These individuals minimize the expression of emotion or feelings and also are more likely to exhibit externalizing behaviors. Avoidantly attached individuals tend to keep others at a distance and do not let people become emotionally close to them; they tend to be “the loner,” “the bully,” or possibly “codependent.” In a study of college students, Dismissing (high avoidance, low anxiety) individuals were less likely to seek support and more likely to avoid social situations (Ognibene & Collins, 1998). In another study, nearly thirty percent of adolescents classified as dismissing actually identified themselves as their primary attachment figure (Freeman & Brown, 2007).

As children move from childhood to adolescence, the value of peers as sources of companionship and intimacy increases (Buhrmester, 1996; Fraley & Davis, 1997; Nickerson, 2002; Wintre and Crowley, 1993). Carbery and Buhrmester (1998) showed that as individuals progress through the life stages, their attachment orientation remains relatively stable, but the reliance on parents decreases as the importance of relationships with peers increases. Parents
serve as the original source for learning how to behave in ways to meet individual needs, but it is during adolescence and young adulthood that individuals increasingly explore other relationships.

There are two existing theories on the role of peer and family attachment (Cooper, & Ayers-Lopex, 1985; Cooper, & Cooper, 1992). The Compensatory/Competition Model suggests that adolescents seek peer support because they are attempting to meet needs not fulfilled by their parents. This perspective posits that an adolescent’s relationships with parents and peers are in conflict with each other and are a source of tension. From this view, adolescents transition from a heavy dependence on parents to greater reliance on their friends and romantic partners (Cooper et al., 1998; Furman, & Buhrmester, 1992; Hazan and Zeifman, 1994). In contrast, the Continuity/Cognitive Model posits that the form and quality of relationships an adolescent forms to peers is an extension of their relationship with their parents (Bowlby, 1969/1967; Ofer et al., 1981; Sullivan, 1953).

**Child Behavior Problems**

The origin of behavior problems can depend on many factors including socio-economic strata (Dumka, Roosa, & Jackson, 1997; Dyer, Dodge, & Valente, 1995), ethnicity (Grunbaum, et al., 2002; Kelder, et al. (2001), & Roberts, 2001; Ma, & Shive, 2000, MacKay, Fingerhut, & Duran, 2000; Roberts, Chen, & Roberts, 1997), parental factors (Patterson & Bank, 1989; Patterson, Capaldi, & Bank, 1991; Patterson, Chamberlain, & Reid, 1982; Patterson, DeBaryshe, & Ramsey 1989) among many other biological and social factors. Research shows conflicting evidence over whether behavior problems are primarily caused by biological or environmental factors (Bullock, Deater-Deckard, & Leve, 2006; Van Goozen, Fairchild, Snoek, & Harold,
Environmental factors can be broken down further into different aspects of the environment that affect the development of behavior problems. Schnoll, Burshteyn and Cea-Aravena (2003) even demonstrated that some problem behaviors stem from food allergies. Sibling relationships (Barrera, Chassin, & Rogosch, 1993; Fuhrman & Holmbeck, 1995), parent-child relationships (DeKlyen & Speltz, 2001; Patterson, DeBaryshe, & Ramsey, 1989) and inter-parental relationships (El-Sheikh, Hinnant, & Erath, 2011; El-Sheikh, Kouros, Erath, Cummings, Keller, Staton, Beauchaine, & Moore, 2009; Jenkins & Smith, 1991; Cummings, Goeke-Morey, & Paap, 2003; Zimet & Jacob, 2001) are also crucial contributors to patterns of children’s behaviors.

Biological Explanations

Some researchers postulate that problem behaviors are related to minor neurological dysfunction (MND) because children with MND are at a higher risk for developing behavior problems than children without this dysfunction (Batstra, Neeleman, & Hadders-Algra, 2003). Batstra et al. found that if children had one or two clusters of neurological dysfunction there was only a slight increase in problem behaviors. In contrast, if the children had three or more clusters of dysfunction there would be a much higher risk of developing behavior problems. Moreover, complications during a mother’s pregnancy created a higher risk for having more clusters of neurological dysfunction. These findings indicate that if children experience troubled prenatal development and birth, they are more likely to have more neurological dysfunction, which in turn is associated with a higher risk of behavior problems. Furthermore, Batstra et al. reported that internalizing behavior problems are more specifically related to fine manipulative
dysfunction and externalizing behavior problems are related to choreiform movements and coordination problems.

The effect that diet and nutrition have on behavior problems, specifically ADHD symptoms, has also been discussed in the literature. For example, it has long been believed that refined sugars aggravate symptoms of hyperactivity (Langseth & Dowd, cited in Prinz & Riddle, 1986). One hypothesis for this link is that hyperactive children have abnormal glucose tolerance curves (Langseth, & Dowd, cited in Prinz & Riddle, 1986). Feingold (1975) introduced the notion that food additives, particularly synthetic coloring and flavoring and salicylates, can also increase hyperactivity in children (Eigenmann & Haenggeli, 2004; Feingold, 1975). Another interesting suggestion that food allergies are associated with hyperactivity (Rapp, 1978) has been supported by evidence of improvement in children’s hyperactive symptoms when known allergic foods are removed from their diet (Carter, Urbanowicz, Hemsley, Mantila, Strobel, Graham, & Taylor 1993; Egger, Carter, Graham, Gumley, & Soothill, 1985; Breaky 1997; Boris & Mitchell 1994; Schnoll, Burshtyn, Cea-Aravana, 2003). Other research has indicated a link between certain fatty acids and the development of behavior problems. For example, Stevens, Zentall, Abate, Kuczek, and Burgess (1996) found that children with lower omega-3 fatty acid concentrations exhibited more behavior problems than a control group. Similarly, Mitchell, Aman, Turbott, and Manku (1987) found that DHA, DGLA, and AA omega-6 fatty acids were significantly lower in individuals with behavior problems than in individuals without behavior problems.
Socio-cultural Explanations

A popular theory that attempts to explain the etiology of behavior problems is the Social Development Model (SDM) (Fleming, Catalano, Oxford, & Harachi, 2002). This model posits that young children learn patterns of behavior from socializing with family and school-aged peers. Children become socialized by moving through four ordered constructs: perceived opportunities for involvement in activities and interactions with others; the degree of involvement in activities and interactions; the skills to participate in the involvement and interaction; and the reinforcement they perceive from this involvement and interaction. Through consistent socialization experiences, an attachment forms between the individual and socializing unit. Once this bond is formed, the individual acts according to the values and beliefs that were learned in this early period of development. Essentially the behaviors exhibited by an individual, whether pro-social or anti-social, reflect the values formed from the socialization process.

Coercive family interaction model, another popular theory that attempts to explain aggressive behavior in children developed by Patterson, DeBaryshe, and Ramsey (1989), posits that children learn to act aggressively by imitating their parents aggressive behaviors and for being reinforced by their parents for behaving aggressively. Another theory of the etiology of behavior problems proposes that the neighborhood in which children grow up influences the development of behavior problems. This hypothesis is difficult to test due to confounding variables such as family genetics, level of stress in the home due to poor finances and other life strains, and the amount of support received from parents and for parents. However, Caspi, Taylor, Moffitt, and Plomin (2000) reported that children living in deprived neighborhoods were at a higher risk for developing behavior problems regardless of genetics. They found that neighborhood deprivation only accounted for 5% of the population variance for the development
of behavior problems, whereas environmental factors shared by family members accounted for 20% of the variance. This finding suggests that the environmental effects of a deprived neighborhood can lead to a higher occurrence of behavior problems, particularly when combined with other family risk factors.

Attachment and Behavior Problems

In a discussion of ADHD, Erdman (1998) theorized that when children experience parents becoming distant or unresponsive, they continue to explore their environment but may use anger to alert their parent of situations that they perceive as dangerous. Parents typically respond when their children’s behavior is aggressive, and thus the anger affords children a feeling of power and control when they are otherwise powerless. This repetitive cycle reinforces the children’s feelings of anxiety and vulnerability and their tendency to react to these feelings in an aggressive manner. In turn, parents learn to only respond to the most extreme behaviors exhibited by their children. Erdman posited that these behaviors are not the result of ADHD, but simply of attempts to establish relational strategies necessary to survive in an insecure environment. Thus, to discriminate between ADHD and insecure attachment behaviors, one must look at the context in which they are present.

Many studies have found that mothers of children who exhibit behavior problems are less warm, harsher in interactions with their children, more coercive (Hart, DeWolf, & Burts, 1993; Pettit & Harrist, 1993; Snyder, Cramer, Afrank, & Patterson, 2005), less positively involved with their children (Leckmen-Westin, Cohen, & Stueve, 2009; Russell & Russell, 1996) and more often diagnosed as having a personality disorder than mothers of children without behavior problems (Johnson, Cohen, Kasen, & Brook, 2006). A noteworthy study conducted by Speltz,
DeKlyen and Greenberg (1995) found that 54% of preschool-aged boys, who were later diagnosed with early onset Conduct Disorder in adolescence, demonstrated insecure attachment to both parents as preschoolers, as opposed to only 18% of boys with no diagnosed behavior problems in adolescence. They found that all three insecure attachment categories were overrepresented in their clinical sample. A similar study comparing preschool children who were later diagnosed with ODD to a control group reported that only 16% of the children diagnosed with ODD had a secure attachment in preschool compared to 72% of the control group (Greenberg, Speltz, DeKlyen, & Endriga, 1991). Children with an ODD diagnosis also showed more distress and protest at separation from parents compared to the control children. Results demonstrated that attachment orientation discriminated between the clinical and control groups better than other parent-child interaction variables, such as parent commands and criticism, or child noncompliance (Speltz, DeKlyen, Greenberg, and Dryden, 1995).

Resolution of the conflict is important to signal the end of heightened stress. If the argument is not resolved, children may perceive the tension as everlasting. In contrast, if the argument is resolved, then the children’s estimate of parental efficacy increases and this in turn allows the children to feel more secure about the ability of parents to work things out in future disagreements. Grych et al. (2004) found that children can be affected by becoming the target of parent’s anger or aggression, being drawn into the parental disagreements (triangulation) and feeling pressure to side with a particular parent. For example, when children are the focus of the argument, they may feel greater responsibility and react in a way to try to distract the parents.

Many studies have found that after controlling for genetic similarities, siblings vary drastically in their reactions to marital discord (Plomin & Daniels, 1987; Richmond & Stocker, 2003, 2008; Scoop, McDonald, Manke, Jouriles, 2005). Turkheimer and Waldron (2000)
differentiated between the observed environment and the effective environment. The observed environment refers to the observable and measurable environment in which the children live, and is separated into aspects that are unique to each child and aspects that are shared across siblings. The effective environment is the differences between siblings that cannot be measured directly, such as behavior and personality. Factors that might explain individual differences in the development of behavior problems in the face of marital conflict are attachment orientation, birth order, early childhood experiences, different environments (Plomin & Daniel, 1987), and perceived parental threat (Richmond & Stocker, 2003, 2008; Scoop et al., 2005).

Diversity of Family Structure

In today's world where almost half of marriages end in divorce (US Census Bureau, 2002), an examination of marital conflict and child behavior problems must necessarily consider the impact of the divorce and subsequent reorganizations of family structure. Although some studies indicate that the negative effects of divorce appear to be decreasing as divorce becomes more common (Amato, 1994; 2001), there exists contrary evidence that children of divorce continue to be at risk for problems such as disobedience, aggression, delinquency, depression, anxiety and poor self-esteem (Amato & Cheadle, 2005; Emery, 1999; Hetherington, 1999; McLanahan, 1999). Yet, the impact of divorce on the development of behavior problems has not been shown to differ significantly from the impact of pre-divorce marital conflict (Kelly, 2000). Researchers have concluded that events leading to divorce, such as marital conflict, are the primary contributor to children’s behavior problems rather than the divorce *per se*. Over half of behavior problems identified in children whose parents’ marriage failed, were present four to twelve years before the parents divorced (Cherlin et al., 1991). Additionally, in cases where
marriages that were marked by low conflict ended in divorce, children experienced negative consequences, but the dissolution of marriages marked by high conflict had beneficial effects on the children (Booth and Amato 2001).

However, divorce also intensifies other factors that could negatively affect child behaviors, such as economic, social, and physical or mental health problems, and ongoing interactions of parents with the ex-spouse and children after divorce. In the three years following divorce, although it is unlikely that a high intensity of conflict will continue, the negative effects will remain (King & Heard, 1999; Maccoby & Mnookin, 1992). When marital conflict is low after a divorce, children’s adjustment tends to be more positive; conversely, when marital conflict is high after a divorce, the children are more likely to exhibit poorer adjustment (Amato & Rezac, 1994). Interestingly, these effects appear to vary depending on custody arrangements. If interparental conflict is high, there are typically more behavior problems in children if the parents share custody as opposed to one parent having sole custody (Johnston, 1995).

Research suggests that children of divorce characterized by a high degree of marital conflict tend to become more dependent, disobedient, aggressive and demanding, whereas parents tend to become less consistent, less affectionate and less able to control their children’s behavior (Fauber, Forehand, Thomas, & Wierson, 1990; Harold & Conger, 1997; Harold, Fincham, Osborne, & Conger, 1997; Hetherington & Clingempeel, 1992; Hetherington, Cox, & Cox, 1976; Krishnakurnar, & Buehler, 2000). These findings imply that when parents are struggling with their own major life disruptions, they are less able to parent effectively, especially at a time when children need the most attention.

The effect that divorce has on parent-child relationships is an area of interest that yields many different findings and possibilities for further investigation. Many researchers have found
that it is not necessarily the divorce that has the most negative impact on the children, but rather
the quality of relationship between children and their parents before the divorce (Afifi, Huber, &
Ohs, 2006; Block, Block, Gjerde, 1986; Cherlin, Chase-Lansdale, & McRae, 1998; Doherty &
Needle, 1991; Lau, 2007). In addition, when parents divorce, the renegotiation of the parent-
child relationship is a key factor in determining the effect of the divorce on the child (Simons,
Whitbeck, Beaman, & Conger, 1994). A comprehensive study by Zill, Morrison, and Coiro
(1993) showed that after a divorce adolescents were more likely to have poor relationships with
their fathers. However, girls tended to exhibit more problems in their relationships with their
mothers after divorce, but not their fathers. Participants in early adolescence (12-16 years-old)
were more likely to have behavior problems and receive psychological help if their parents
divorced earlier in their life as opposed to later. Similarly, older adolescents (age 18-22 years-
old) were more likely to have a poor relationship with their father, have more behavior problems
and drop out of high school if their parents divorced earlier in their development (Zill et al.,
1993).

When divorce occurs in a family system, it is likely that eventually one or both of the
parents will remarry or re-partner. Koerner, Rankin, Kenyon and Korn (2004) found that
adolescent perceptions of their mothers did not differ in relation to remarriage or cohabitation,
suggesting that the effects are the same regardless of whether a parent re-marries or lives with a
partner. Because it can be difficult to tease apart the effects of divorce and remarriage on the
development of adolescent behavior problems, there is little research to date that examines the
role that remarriage plays in this process. However, it is clear that children in step-families often
experience more problems in school, higher rates of externalizing and internalizing behaviors,
less initiative, and a lower quality of life than children in intact families (Hanson, McLanahan, &
Potential areas of conflict in re-marriages that can affect children are adolescent stress, parental discipline, and power (Chapman, 1991).

The effects that the adolescent’s attachment relationships have on adjusting to the new marital dyad is also an issue that has not been received much attention. The general consensus of the existing literature is that remarriage and divorce can leave the adolescent-parent relationships in a vulnerable state. Weiss (1982) suggested that the threat, distress, possible sexual arousal towards the cross-gender step-parent, or other emotional states may trigger the adolescent’s proximity seeking behavior, intensifying old bonds or increasing the need to seek new attachment figures among peers as a means to gain comfort. Love and Murdock (2004) found that children from stepfamilies often had less secure attachment to their parents than children from intact families. They also found that secure children from stepfamilies tended to be better adjusted and have a better sense of well-being than insecure children from step-families, indicating that attachment orientation had a moderating effect on overall adjustment and blended families.

Aggression in Marital Conflict

Evidence indicates that different types of marital conflict are associated with increased behavior problems in children, especially internalizing and externalizing behaviors (El Sheikh & Elmore-Staton 2004; Marchand, Schedler, & Wagstaff, 2004; Neighbors, Forehand, & Bau, 1997; Richmond & Stocker, 2008). Negative conflict behaviors are maladaptive means of solving marital disputes, such as yelling, name-calling, demeaning comments and physical aggression. Many researchers have hypothesized that it is the aggressive nature of fighting that
affects children, whereas a calmer, more productive means of working out disagreements may conversely have a positive effect on children. Martin and Clements (2002) found that children who witness inter-parental aggression react more strongly and in more negative ways than children who do not witness violent interactions between parents. Conversely, if parents engage in positive conflict behaviors (e.g., compromising, calm debates, exhibiting love despite differences in opinion), children are not as likely to exhibit externalizing behavior problems (Marchland et al., 2004). Moreover, externalizing behaviors are more likely if a parent shows overt hostility and anger; whereas, internalizing behaviors are more likely if the parent demonstrates avoidance and withdrawal (Marchland et al., 2004).

Jenkins and Smith (1991) identified three different dimensions of disharmony that could negatively affect children’s behaviors. First, overt parental conflict may be distressing and encourage similar behavior in the children. Second, covert parental conflict (i.e., disharmony that changes how family members interact with one another) could impair children’s adjustment. Finally, marital discord could affect the way parents interact with their children, thus encouraging each parent to behave in a different manner toward the children, which was termed parental discrepancy in child-rearing. Webster-Stratton and Hammond (1999) found that critical parenting and low emotional responsivity of parents were strongly predictive of child conduct problems and thought to stem from the marital conflict. Cummings, Goeke-Morey, and Papp (2004) also studied three aspects of marital conflict: conflict tactics (constructive versus destructive); parental emotions (positive versus negative); and conflict topics (child, marital, social, and work). Cummings et al. found that marital aggression increased aggression in children, especially when parents’ tactics and emotions were negative and the children were the object of the argument.
Bidirectional Nature of Marital Conflict and Behavior Problems

While the link between marital conflict and behavior problems in children has been well established, less research has focused on the mutual influence between these two phenomena. There is some evidence suggesting a bidirectional relationship between children’s behavior and marital functioning. At the broadest level, couples without children have higher marital satisfaction than couples with children (Ryder, 1973; Orathink & Van Steenwegen, 2007 White & Edwards, 1990). Relatedly, Cowan and Cowan (2000) demonstrated that the birth of a baby marks a decline in marital quality and an increase in marital distress. Other studies have reported that the parents of challenging children, whether in temperament (Leve, Scaramella, & Fagot, 2001) or physical health (Gaither, Bingen, & Hopkins, 2000), also show less marital satisfaction. In a longitudinal study over three years, O’Conner and Insabella (1999) found that marital conflict predicted an increase in adolescent behavior problems, and that adolescent’s externalizing behavior predicted a more negative rating of the marital relationship by fathers. These findings do not indicate a clear causal relationship, but do lead one to believe that the interaction between marital conflict and children’s behavior problems is significant.

The Current Study: Attachment, Marital Conflict and Behavior Problems

Conversely, insecurely attached children may feel that they are at fault for their parents’ arguments, and subsequently begin to internalize blame and or engage in externalizing behaviors as a way to cope with this feeling of responsibility. Research has demonstrated that marital conflict can potentially disrupt children’s emotional security with parents (Corinne, Steele, Forehand & Armistead, 1996; Davies & Cummings, 1994; 1998; Davies, Harold, Goeke-Morey & Cummings, 2002; Willhelm,
Brownhill & Boyce, 2000). Frosch, Mangelsdorf, and McHale (2000) explored how positive and negative marital behaviors affect children’s attachment to parents. They proposed that marital conflict inhibits children from seeking comfort from their parents in times of distress, which affects the attachment system and usually leads to disruption in many areas of the children’s lives. Frosch et al. reported that warm and interconnected marital interactions were associated with the security of father-child attachment but not mother-child attachment. In turn, they also found that more hostile marital behavior was linked with a less secure mother-child attachment, but not father-child attachment. Consequently, it is important to look at attachment to both mother and father independently, as proposed in the current study.

Davies and Cummings (1994) proposed the Emotional Security Hypothesis, which suggests that both the parent-child attachment relationship and the interparental bond affect the children’s reaction to marital conflict. According to this hypothesis, marital conflict threatens the children’s emotional security by disrupting discipline, inducing stress, lessening parental availability, impairing parental sensitivity and endangering children’s emotional and/or physical well-being. Children can also over-interpret the conflict and fear that it will lead to divorce even when that is not the intention of the parents. Consequently, marital discord may have a negative impact on children’s emotional security and regulation of emotions. Repeated arousal of negative emotion due to marital conflict depletes the resources available for children to cope with later disruptions. Children may become hypervigilant to conflict and respond more negatively in the face of any conflict regardless of its nature. Along with negatively impacting the children’s emotional regulation, low emotional security causes children to seek alternative means to reduce their anxiety. As mentioned previously, to end the stress, children might attempt to intervene, ask parents to stop, or use distraction strategies, such as getting hurt or
exhibiting externalizing behaviors to draw the parents’ attention and themselves away from the marital conflict.

Children’s insecure representations of parents’ marital relationships mediated the link between marital conflict and children’s internalizing behaviors (Davies & Cummings, 1998). This study emphasizes the role that a child’s perception of the marital relationship plays in child reactions, and it helps explain how internalizing behavior problems develop. In a study taking into account both of these findings, Stocker, Richmond, Low, Alexander, and Elias (2003) found that children’s perceptions of mother’s and father’s child-directed negativity significantly mediated the association between marital conflict and children’s internalizing and externalizing problems. They also reported that supportive parent-child relationships buffer the stress produced by marital conflict. On the other hand, marital conflict may spill over into the parenting dyad and lead to more negative affect and hostility directed from parents to children. Children in these environments report more depression Grych & Fincham, 1990; Jenkins & Smith, 1991) and exhibit more hostility in everyday interactions (Cummings, 1987; Stocker et al., 2003).

Hypotheses and Analysis

The current study examined the relationship of attachment orientation on the development of behavior problems in adolescents when in the presence of marital conflict. The hypothesis was primarily evaluated with data from the adolescent instruments and demographic information provided by the parent. In order to accommodate a low response rate, extraneous hypotheses were deleted from the original proposal to maintain adequate power (power = .80) despite the obtained sample size of 57 dyads and using an estimated medium effect size of
\( R^2 = .15 \), based on Cohen’s (1988) guidelines for power and effect size. Using Green’s (1991) two-step procedure for determining sample size, it was determined that with 4 explanatory variables, or predictors, there should be an N of at least 70. A general rule of thumb for the analyses required to evaluate the hypothesis in question is to have at least 10 participants for every predictor. As stated previously, the hypotheses have been modified to reduce redundancies and minimize the number of analyses required while still maintain being able to examine the role that parent child attachment plays in the relationship between interparental conflict and behavior problems. In addition, it was determined that the obtained sample size was deemed adequate due to the exploratory nature of the study.

After running Pearson correlations and centering all predictor variables on their scale mean, the above hypothesis was evaluated using multilevel modeling (MLM) following Baron and Kenny’s (1986) procedures to test moderating effects. Two separate sets of moderation analyses were planned to assess the moderation of mother and father attachment. With four outcome variables (i.e., CBCL externalizing, CBCL internalizing, YSR externalizing, YSR internalizing), there were a total of ten regression equations. Perceived interparental conflict was a predictor variable and it was represented in the first step by scores on the CPIC frequency, intensity, and perceived threat subscales. Parent-child attachment was the moderating variable in the second step and was measured by mother and father scores on the IPPA. Appropriate interaction terms were entered in the third and final step, which were formed by using the products of the predictors and the moderators (e.g. CPIC frequency X IPPA-mother/father; CPIC Intensity X IPPA-mother/father; CPIC Intensity X IPPA-mother/father).
Figure A1

Many Secure = Dashed
Moderately Secure = Dotted
Insecure = Solid

Behavior Problems

Few

Low Medium High

Marital Conflict

Figure A2

Marital Conflict

Parent-Child Attachment

Behavior Problems

Marital Conflict × Parent Attachment
APPENDIX B

ADDITIONAL RESULTS
Preliminary Analyses: Demographics

Demographic statistics for all continuous variables are presented in Tables 3 and 4. Before testing the hypothesis, preliminary analyses examined associations among demographic variables (i.e. age, sex, ethnicity, educational achievement) and the continuous variables. Age and grade of the adolescent were positively correlated with the child’s perception of his or her level of internalizing behavior problems \((r = .311, p < .05)\) and \((r = .269, p < .05)\), respectively, indicating that as age increased, so did the perception of internalizing behavior problems as evidenced by the YSR internalizing Behavior Problem Scale. In addition, as the responding parent’s age increased, so did the adolescent’s perception of internalizing behavior problems as evidenced by the YSR internalizing Behavior Problem Scale \((r = .448, p < .05)\). Father attachment was negatively correlated with the age and grade of the adolescent \((r = -.288; -.291, p < .05)\), and the age of the responding parent \((r = -.369, p < .05)\) and the child’s other parent \((= -.364, p < .01)\), indicating that as the age and grade increased for the adolescents, and as the age increased for both parents, the security of attachment to the father decreased. The responding parent’s age was negatively correlated with mother attachment \((r = -.458, p < .05)\), and positively correlated with the CPIC frequency \((r = .344, p < .05)\) and coping efficacy \((r = .327, p < .05)\). This means that as the responding parent’s age increases, the child’s attachment to his or her mother decreases, the perception of frequency and coping efficacy of interparental conflict increases. Not surprisingly, changes in marital status is positively correlated with CPIC Intensity \((r = .355, p < .001)\), and CPIC frequency \((r = .381, p < .001)\) indicating that the more changes in marital status, the higher intensity and frequency of interparental conflict. Interestingly, changes in marital status were also positively correlated with interparental conflict Resolution \((r = .500, p \)
< .001), indicating that the more changes in marital status, the higher the perception of conflict resolution.

To determine if there were significant differences between demographic groups for the continuous variables, multiple univariate analysis of variances models were performed. There were no significant differences found between groups for behavior problems, father attachment, intensity of conflict, or perceived threat of conflict. When parent and child ethnicity was collapsed into “white” and “non-white” given the small minority distribution, white children were found to be more securely attached to their mothers ($F = 5.320, p < .05$) than non-white children. In addition, non-white children perceived their parents as engaging in more frequent conflict ($F = 5.412, p < .05$) than white children.

Preliminary Analyses: Correlations

A significant correlation that is noteworthy is the positive correlation between Mother and Father Attachment ($r = .623, p < .001$) which indicates that the more securely attached an adolescent is to his or her father, the more securely he or she is to be attached to his or her mother. With regards to interparental conflict, Intensity was positively correlated with frequency ($r = .723, p < .001$) and perceived threat ($r = .394, p < .001$). Mother Attachment was negatively correlated with Intensity ($r = .486, p < .001$), frequency ($r = -.740, p < .001$), and perceived threat ($r = -.339, p < .001$) indicating that the intensity, frequency and perceived threat of interparental conflict increased, security of attachment to mothers decreased. Father Attachment was also negatively correlated with Intensity and frequency of interparental conflict ($r = -.297/- .512, p < .005/.001$) respectively.
Adolescents’ self-report of internalizing behavior problems were significantly and positively correlated with YSR externalizing Behavior Problems \(r = .532, p < .01\), CBCL internalizing Behavior Problems \(r = .626, p < .01\), and CBCL externalizing Behavior Problems \(r = .432, p < .001\), indicating that from the adolescents perspective, higher frequencies of internalizing behaviors were associated with higher frequencies of the adolescents perspective of externalizing behavior problems and their parents perspective of both internalizing and externalizing behavior problems. There also appeared to be some agreement between the adolescents and parents report of externalizing behavior problems as evidenced by a significant and positive correlation between YSR and CBCL externalizing Behavior Problems \(r = .530, p < .01\). Parental responding also indicated a significant correlation between internalizing and externalizing behavior problems \(r = .592, p < .01\).

Father attachment was significantly and negatively correlated with YSR internalizing Behavior Problems \(r = -.382, p<.01\), CBCL internalizing \(r = -.389, p<.05\) and CBCL externalizing Behavior Problems \(r = -.406, p<.01\). This indicates that as security to their father decreased, the adolescents perspective of their internalizing behavior problems increased, and the parent’s perspective of both the adolescents internalizing and externalizing behavior increased. Mother attachment was significantly and negatively correlated with YSR internalizing Behavior Problems \(r = -.614, p<.01\), YSR externalizing Behavior Problems \(r = -.491, p<.01\), CBCL internalizing Behavior Problems \(r = -.280, p<.05\), and CBCL externalizing Behavior Problems \(r = -.320, p<.05\). This indicates that as security to their mother decreased, the adolescents perspective of their internalizing and externalizing behavior problems increased, and the parent’s perspective of both the adolescents internalizing and externalizing behavior increased.
The adolescents report of their externalizing behavior problems was significantly and positively correlated with CPIC threat \( (r = 0.308, p < 0.05) \), CPIC frequency \( (r = 0.317, p < 0.05) \), and CPIC Intensity \( (r = 0.430, p < 0.01) \). This indicates that as an adolescents’ perception of interparental threat, frequency, and intensity increased, so did their exhibition of externalizing behavior problems. The YSR internalizing Behavior scale was also significantly and positively correlated with CPIC Intensity \( (r = 0.301, p < 0.05) \) and CPIC frequency \( (r = 0.439, p < 0.01) \), indicating that as an adolescents’ perception of interparental threat and frequency, increased, so did their exhibition of internalizing behavior problems.

Discussion

Interestingly, as the age of the adolescent increased their attachment security to their father decreased, but no such effect was found with attachment to mothers. The majority of research has found that attachment security is stable throughout the developmental transitions from infancy to early adulthood (Hamilton, 2000; Waters, Merrick, Treboux, Crowel, & Albersheim, 2000; Waters, Weinfield, & Hamilton, 2000) and individuals identify their mothers as their primary attachment figure (Bowlby, 1980; Ainsworth, 1979; Freeman & Brown, 2001). Also, according to the existing literature, the major developmental tasks during adolescence are to establish independence and autonomy from the family of origin and to form a stable self-identity (Cretzmeyer, 2003; Makey, 2003). During this period, adolescents fully test the IWMs that have been established in their early years, but still rely on parents to serve as a secure base from which to explore and develop autonomy. Consequently, adolescence is characterized by the persistence of strong and complex bonds to parents. Therefore, the current finding supports existing literature that mothers remain the primary attachment figure and adolescents begin to
transfer those bonds to other relationships. Similarly, as the parent’s age increased, the security of attachment to both mother and father decreased. This could be due to the lack of connection felt by the adolescent to the parent due to the discrepancies in ages, or this could be more reflective of the adolescents becoming more reliant on their peer relationships for attachment security.

Parental age was also found to be associated with higher incidences of interparental conflict. This is somewhat unexpected, as most of the current literature has found that length of marriage and age is associated with a decline in frequency of interparental conflict (Condie, 1989; Gilford & Bengtson, 1979; Johnson, White, Edwards, & Booth, 1986; Keith & Schafer, 1986; Levenson, Cartensen, & Gottman, 1993). However, Hatch & Bulcroft (2004) challenged this common finding and demonstrated that the frequency of marital conflict can increase depending on many factors including spousal age, length of marriage, cohort effects, and the presence of children in the home. Specifically they found that the highest marital conflict frequency was found for couples aged 40-59 who had been married between 10-20 years which corresponds to the demographic sample of the current study (Hatch & Bulcroft).

A seemingly surprising finding was that the more changes in marital status, the higher adolescents rated their parents on interparental conflict resolution. There are two logical explanations for this finding. First, the adolescents were instructed to fill out the CPIC according to the relationship between the parents that they currently live with or spend the most time with (i.e. mother and step-father, or father and step-mother, etc.). Therefore, if their biological parent’s marriage was marked by significant conflict and ended in divorced, and thus indicated by the responding parents number of changes in marital status, that would not necessary be the case in their current marriage. Further, the parent could have learned from the mistakes made in
their previous relationship and may work harder to avoid repeating similar mistakes in their current relationship. Second, items that make up the Resolution scale could also reflect partner’s coping skills as they relate to marital conflict. For example, two of the six items ask about parents’ ability to find solutions to problems.

Preliminary analyses suggesting ethnic differences in attachment security should be interpreted with extreme caution due to the small number of non-White men in this study. However, this discrepancy has been found between African American and white children (Bakermans-Kranenburg, van Ijzendoorn, & Kroonenberg, 2004) which made up the majority of the “non-white” minority subgroup. These researchers posit three possible explanations for cross cultural differences among attachment styles: culturally biased attachment measures, attachment quality and attachment behaviors may have different cultural significances, and a third variable that is related to both attachment and culture could confounding the results (2004). These explanations could apply to members of all minority groups and explain the current study’s finding.

Analyses also demonstrated that non-white children perceived their parents as engaging in more frequent conflict than white children’s parents. Again, this result should be interpreted with extreme caution due to the small number of participants that make up this category. The predominant ethnic group that comprises this subgroup was African American respondents and there is ample research demonstrating that African Americans are more likely to get divorced than their white counterparts (Sweeney and Phillips, 2004; South, 1993).
Table B1

*Demographic Characteristics of Custodial Parents*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Custodial Parent</th>
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<tr>
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<tr>
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<tr>
<td>Native American</td>
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<tr>
<td>Other</td>
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<td>Native American</td>
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<td>Other</td>
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<tr>
<td>20,001 – 35,000</td>
<td>1.8</td>
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<tr>
<td>35,001 – 50,000</td>
<td>8.8</td>
</tr>
<tr>
<td>50,001 – 75,000</td>
<td>14</td>
</tr>
<tr>
<td>75,001 – 100,000</td>
<td>12.3</td>
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<td>&gt;100,000</td>
<td>63.2</td>
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<tr>
<td>Married</td>
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<tr>
<td>Single, cohabitating</td>
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<td>Divorced</td>
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<td>Divorced, remarried</td>
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Table B2

Demographic Characteristics of Target Children

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<th>Characteristic</th>
<th>Participants</th>
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<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Female</td>
<td>29</td>
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<tr>
<td>Asian/Pacific Islander</td>
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</tr>
<tr>
<td>White/European American</td>
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<tr>
<td>Native American</td>
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<td><strong>Target Child’s Diagnosis</strong></td>
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<td>ADHD</td>
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<td>ODD</td>
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<tr>
<td>Behavior Disorder, NOS</td>
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<td>Other</td>
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<td><strong>Target Child’s Medication</strong></td>
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<td>Antidepressant</td>
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<td>Attention regulator</td>
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<td>Other</td>
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<td><strong>Target Child’s Primary Residence</strong></td>
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<tr>
<td>Both Biological Parents</td>
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<tr>
<td>Biological Mother</td>
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<td>Biological Father</td>
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<tr>
<td>Relationship</td>
<td>Count</td>
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<td>-----------------------------------</td>
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<tr>
<td>Biological Mother and Step Father</td>
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<td>Biological Mother and her Partner</td>
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<td>Adoptive Parent</td>
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</tbody>
</table>
APPENDIX C

RESEARCH CONSENT FORM
Title of Project:
Adolescent Behavior in the Context of Parent-Child and Marital Relationships

Principal Investigators:
Carlyn Aldrich, B.A., cma0066@unt.edu
Shelley A. Riggs, Ph.D., riggs@unt.edu

This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940) 565-3940

Before agreeing to participate in this research study, it is important that you read and understand the following explanation. It describes the procedures, benefits, risks and discomforts of the study. It is important for you to understand that no guarantees or assurances can be made as to the results of the study. Your participation is completely voluntary and you may withdraw at any time.

Purpose of the study:
The purpose of this study is to examine adolescent behavior in the context of parent-child and marital relationships. Specifically, the study is designed to determine whether adolescent attachment to parents and views of the interparental relationship interact in the prediction of behavior problems.

Description of the study including procedures to be used:
Individuals who have been living with their current spouse for at least a year and with a child between the ages of 12 and 18 are eligible for this study. You will be asked to read the online consent form, and click the “I accept” button if you are willing to participate in the study. Next you will be asked to fill out an online survey, which will take approximately 30 to 40 minutes to complete. A weblink, username and password has also been provided for your child, which will allow your child to log into the adolescent survey, which will take approximately one hour to complete. Each questionnaire must be completed in one sitting, although parents and adolescents may complete the surveys at different times (e.g. once parents have the child’s log-in code, the child may complete the instruments at any later time). Once the separate parent or child questionnaires are submitted, you will not be able to log in and access the responses again. Therefore, we encourage parents to examine the adolescent questionnaires BEFORE the child completes and submits the survey.

Description of procedures/elements that may result in discomfort or inconvenience:
Although not expected, it is possible that you or your child may experience some discomfort as a result of the questions asked in this survey. If excessive discomfort is experienced, you may choose to stop answering questions at any time without penalty. If you feel that you need to discuss your discomfort further, please contact the researcher, who will refer you to the appropriate services.

Description of procedures that are associated with foreseeable risks:
The researchers have tried to prevent any problem that could happen because of this research, but the study may involve risks to you or your child that are currently unforeseeable. You should
contact the researchers if there is a problem, and they will do their best to help you locate appropriate resources. However, the University of North Texas does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

Benefits to the participants:
We believe that participation in this study could potentially be beneficial to you in that the questions may help you to think about your own experiences and how you wish to relate to others in the future. The indirect benefit of your participation will be your contribution to the knowledge base regarding child behavior problems and family relationships. Results of the study will have implications for individual, couple, and family therapy and inform intervention programs designed to prevent the development of behavior problems. In addition, once both the parent and the adolescent surveys are completed, each parent will be entered into a raffle to potentially win one of four $100 VISA gift cards, and each child will receive a $10 VISA gift card.

Confidentiality of research records:
All information gathered in this study will be kept confidential to the extent that is allowed by law. A number of steps will be taken to minimize the risk of loss of confidentiality. The survey will include no identifying information; codes, rather than your name or your child’s name, will be used by the researchers. Once you or your child clicks the “submit” button on the respective questionnaires, no one except the principal investigator and research supervisor will have access to the data. This means that your child will not have access to your responses, nor will you have access to your child’s responses after the “submit” button is pressed. Once again we encourage you to view the adolescent questionnaire prior to allowing your child to respond to the survey. The data collected will not be shared with any individual or agencies, and will only be used for research or educational purposes. It is anticipated that the research will be published in a psychological journal; however, no identifying information will be included in any publication of the data collected in the study.

By clicking the “I Accept” button below, you are agreeing that you understand your rights as a research participant, and you voluntarily consent to participate in this study. You are also consenting to your child’s participation in the study. You understand also what the study is about and how and why it is being conducted.

If you agree to participate in this study, please click the “I Accept” button below.
If you choose not to participate, please click the “I Decline” button and close your browser.
APPENDIX D

RESEARCH CONSENT FORM (PAPER VERSION)
Title of Project:
Adolescent Behavior in the Context of Parent-Child and Marital Relationships

Principal Investigators:
Carlyn Aldrich, B.A., cma0066@unt.edu
Shelley A. Riggs, Ph.D., riggs@unt.edu

This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940) 565-3940

Before agreeing to participate in this research study, it is important that you read and understand the following explanation. It describes the procedures, benefits, risks and discomforts of the study. It is important for you to understand that no guarantees or assurances can be made as to the results of the study. Your participation is completely voluntary and you may withdraw at any time.

Purpose of the study:
The purpose of this study is to examine adolescent behavior in the context of parent-child and marital relationships. Specifically, the study is designed to determine whether adolescent attachment to parents and views of the interparental relationship interact in the prediction of behavior problems.

Description of the study including procedures to be used:
Individuals who have been living with their current spouse for at least a year and with a child between the ages of 12 and 17 are eligible for this study. You will be asked to read this consent form, and mark the “I accept” box on the following page if you are willing to participate in the study. Next you will complete the included survey that is in the ‘parent’ envelope which will take approximately 30-40 minutes. After reviewing the survey included in the ‘adolescent’ envelope please give it to your adolescent to complete, which will take approximately one hour to complete. If he or she has any questions that you are not able to answer, please e-mail me or give them my e-mail address and I will be able to answer them directly. Each questionnaire can be completed in multiple sittings, and parents and adolescents may complete the surveys at different times. Once the separate survey’s are completed, please mail them back in the included SASE envelopes. Please make sure to return them separately and in the appropriately designated envelope (the parent survey should be returned in the envelope with ‘parent’ written on it). The return envelopes have already been coded to protect anonymity.

Description of procedures/elements that may result in discomfort or inconvenience:
Although not expected, it is possible that you or your child may experience some discomfort as a result of the questions asked in this survey. If excessive discomfort is experienced, you may choose to stop answering questions at any time without penalty. If you feel that you need to discuss your discomfort further, please contact the researcher, who will refer you to the appropriate services.

Description of procedures that are associated with foreseeable risks:
The researchers have tried to prevent any problem that could happen because of this research, but the study may involve risks to you or your child that are currently unforeseeable. You should contact the researchers if there is a problem, and they will do their best to help you locate appropriate resources. However, the University of North Texas does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.

**Benefits to the participants:**
We believe that participation in this study could potentially be beneficial to you in that the questions may help you to think about your own experiences and how you wish to relate to others in the future. The indirect benefit of your participation will be your contribution to the knowledge base regarding child behavior problems and family relationships. Results of the study will have implications for individual, couple, and family therapy and inform intervention programs designed to prevent the development of behavior problems. In addition, once both the parent and the adolescent surveys are completed and returned, each parent will be entered into a raffle to potentially win one of four $100 VISA gift cards, and each child will receive a $10 VISA gift card.

**Confidentiality of research records:**
All information gathered in this study will be kept confidential to the extent that is allowed by law. A number of steps will be taken to minimize the risk of loss of confidentiality. The survey will include no identifying information; codes, rather than your name or your child’s name, will be used by the researchers. Once you or your child returns the completed surveys, no one except the principal investigator and research supervisor will have access to the data. This means that your child will not have access to your responses, nor will you have access to your child’s responses after the surveys are returned. Once again we encourage you to view the adolescent questionnaire prior to allowing your child to respond to the survey. The data collected will not be shared with any individual or agencies, and will only be used for research or educational purposes. It is anticipated that the research will be published in a psychological journal; however, no identifying information will be included in any publication of the data collected in the study.

By marking the “I Accept” box on the next page, you are agreeing that you understand your rights as a research participant, and you voluntarily consent to participate in this study. You are also consenting to your child’s participation in the study. You understand also what the study is about and how and why it is being conducted.

**If you agree to participate in this study, please mark the “I Accept” button on the following page.**
**If you choose not to participate, please mark the “I Decline” button and mail back the uncompleted survey in the included SASE envelope.**
APPENDIX E

RESEARCH CONSENT FORM – ADOLESCENT
Welcome
Thank you for volunteering to participate in this study. Your answers to the following questions are very valuable, and by participating you will help us to learn more about what it is like to be a teenager.

Purpose of the Study
The purpose of this study is to examine how your relationship with your parents can help you cope when you are upset about things that are happening in the family.

Description of the Study
You will be asked some questions about many different things. To answer the questions you just click on the circle next to the answer you want and go on to the next question. At the end of each page there will be a button you can press to move to the next page. It should only take you about an hour to answer all the questions so please take your time and answer each question carefully. It is not likely that these questions will upset your or cause any discomfort, but if they do please let your parents know so they can help you feel better or find someone who can help you. Your participation is completely voluntary and you may stop at any time. If you have any problems when answering the questions, please ask your parents so they can help explain the directions. When you are done, press the “submit” button, after which no one but the research will have access to your answers.

If you agree to participate in this study, please click the “Submit” button below.
If you choose not to participate, please click the “I Decline” button and close your browser.
APPENDIX F

ADULT DEMOGRAPHIC QUESTIONNAIRE
Target child's age


Target child's gender

- Male
- Female

Target child's grade in school


Target child's GPA

Target child's ethnicity/racial background

- African American
- Native American
- Caucasian
- Asian
- Hispanic
- Other

Target child's diagnosis, if applicable:

- [ ] ADHD
- [ ] Conduct Disorder
- [ ] Oppositional Defiant Disorder
Behavior Disorder Not Otherwise Specified
☐ Major Depressive Disorder
☐ Bipolar Disorder
☐ Not Applicable
☐ Other: (please specify)

Medications your child is currently taking:
Select all that apply
☐ None
☐ Antidepressant
☐ Antipsychotic
☐ Antianxiety
☐ Mood Stabilizer
☐ Attention Regulators
☐ Other: (please specify)

Your relation to the target child
• Biological Father
• Biological Mother

Your Age ___________
Your Gender

- Male
- Female

Your ethnic/racial background

- African American
- Native American
- Caucasian
- Asian
- Hispanic
- Other

Your highest level of education

- No educational degree
- High school degree
- College degree
- Masters degree
- Doctoral degree

Annual family income

- <12,000
- 12,001 - 20,000
- 20,001 - 35,000
- 35,001 - 50,000
- 50,001 - 75,000
75,001 - 100,000
>100,000

Your child's other biological parent's age_______________

Your child's other biological parent's gender
- Male
- Female

Your child's other biological parent's ethnic/racial background
- African American
- Native American
- Caucasian
- Asian
- Hispanic
- Other

Your child's other biological parent's highest level of education
- No educational degree
- High school degree
- College degree
- Masters degree
- Doctoral degree

Number of changes in your marital status since birth of target child______________
Number of marital separations since birth of target child

Number of divorces since birth of target child

Number of remarriages since birth of target child

Number of live-in partners since birth of target child (including child's other biological parent)

Number of your child's siblings currently living in your household

Number of your child's siblings currently living elsewhere

With whom does your child primarily reside?

- Both biological parents
- Biological mother
- Biological father
- Biological mother and step father
- Biological father and step mother
- Biological mother and her romantic partner
- Biological father and his romantic partner
- Other biological relative (grandparent, Aunt/Uncle, sibling)
- Adoptive parent
- other legal guardian

Your current marital status
- Single, never married
- Married
- Single, cohabitating
- Divorced
- Divorced, cohabitating
- Divorced, remarried
Length of marriage to your child's biological parent in years

How old was your child when you separated/divorced his/her biological parent?

Were you in your first marriage when your child was born?

- Yes
- No

APPENDIX H

CHILD DEMOGRAPHIC QUESTIONNAIRE
How close is your relationship with your biological mother?

- We are best friends
- I can talk about my problems with her most of the time
- I can talk about my problems with her some of the time
- I am not very comfortable talking to her about my problems
- I do not feel like I can trust her with my problems at all

How close is your relationship with your biological father?

- We are best friends
- I can talk about my problems with him most of the time
- I can talk about my problems with him some of the time
- I am not very comfortable talking to him about my problems
- I do not feel like I can trust him with my problems at all

As compared to your relationship when you were really young, how would you describe your relationship with your biological mother now?

- Much better
- Slightly better
- About the same
- Slightly worse
- Much worse

As compared to your relationship when you were really young, how would you describe your relationship with your biological father now?

- Much better
- Slightly better
- About the same
- Slightly worse
- Much worse

Are your biological mother and father still married?

- Yes
- No
APPENDIX I

CHILD DEMOGRAPHIC QUESTIONNAIRE (BLENDED)
Instructions: Please answer the following questions about your relationship with your step-parents. If you do not have step-parents OR your parents are still married, please skip these questions and click the “Continue to Next Page Button” below.

How close is your relationship with your biological mother?

- We are best friends
- I can talk about my problems with her most of the time
- I can talk about my problems with her some of the time
- I am not very comfortable talking to her about my problems
- I do not feel like I can trust her with my problems at all

If applicable, how close is your relationship with your stepmother?

- We are best friends
- I can talk about my problems with her most of the time
- I can talk about my problems with her some of the time
- I am not very comfortable talking to her about my problems
- I do not feel like I can trust her with my problems at all

How close is your relationship with your biological father?

- We are best friends
- I can talk about my problems with him most of the time
- I can talk about my problems with him some of the time
- I am not very comfortable talking to him about my problems
- I do not feel like I can trust him with my problems at all

If applicable, how close is your relationship with your stepfather?

- We are best friends
- I can talk about my problems with him most of the time
- I can talk about my problems with him some of the time
- I am not very comfortable talking to him about my problems
- I do not feel like I can trust him with my problems at all
As compared to your relationship when you were really young, how would you describe your relationship with your biological mother now?

- Much better
- Slightly better
- About the same
- Slightly worse
- Much worse

As compared to your relationship when you were really young, how would you describe your relationship with your biological father now?

- Much better
- Slightly better
- About the same
- Slightly worse
- Much worse

As compared to your relationship when you were really young, how would you describe your relationship with your stepmother right now?

- Much better
- Slightly better
- About the same
- Slightly worse
- Much worse

As compared to your relationship when you were really young, how would you describe your relationship with your stepfather now?

- Much better
- Slightly better
- About the same
- Slightly worse
- Much worse
If you do not live with your biological mother, how often do you see her?

- Almost every day
- At least once a week
- At least once a month
- About once every 6 months
- About once a year
- About once every few years
- Never

If you do not live with your biological father, how often do you see him?

- Almost every day
- At least once a week
- At least once a month
- About once every 6 months
- About once a year
- About once every few years
- Never

The amount of conflict between my biological mother and father in the last six months that we all lived together was

- Multiple times a day
- Once a day
- Once every few days
- Once a week
- A couple times a month
- Once a month

The amount of conflict between my biological mother and father since the divorce is

- Multiple times a day
- Once a day
- Once every few days
Once a week
A couple times a month
Once a month

Since the divorce, I have seen my parents be mean to each other

Multiple times a day
Once a day
Once every few days
Once a week
A couple times a month
Once a month

Since the divorce, I hear my parents say bad things about each other

Multiple times a day
Once a day
Once every few days
Once a week
A couple times a month
Once a month

Since the divorce, when my parents argue I end up getting involved somehow

True
False

Since the divorce, if my parents argue I try to stop them or intervene

True
False

Since the divorce, my mom wants me to be on her side when she and my dad argue

True
False
Since the divorce, my dad wants me to be on his side when he and my mom argue

- True
- False
APPENDIX J

IRB APPROVAL LETTER
October 13, 2011

Carlyn Aldrich Daubs  
Department of Psychology  
University of North Texas

Institutional Review Board for the Protection of Human Subjects in Research (IRB)  
RE: Human Subject Application #07169

Dear Ms. Daubs:

The UNT IRB has received your request to modify your study titled “Adolescent Behavior Problems and Interparental Conflict: The Moderating Role of Attachment.” As required by federal law and regulations governing the use of human subjects in research projects, the UNT IRB has examined the request to ask community clinics to distribute the recruitment flyer to be used in this study. Also requested is to change the age of participants to 12 – 17 and to revise the time of participation to approximately 30 minutes on the consent form and to include the principal investigator’s telephone number on the recruitment flyer. The modifications to this study are hereby approved for the use of human subjects.

The study noted above has received an Expedited review. Federal Policy 45 CFR 46.109(e) stipulates that IRB approval is for one year only, October 13, 2011, to October 12, 2012.

The IRB must review this project prior to any other modifications.

Please contact Shelia Bourns, Research Compliance Analyst, at (940) 565-3940, or Boyd Herndon, Director of Research Compliance, at (940) 565-3941, if you wish to make changes or need additional information.

Sincerely,

Patricia L. Kaminski, Ph.D.  
Associate Professor  
Chair, Institutional Review Board
REFERENCES


