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Family Interactions in Adoptive Compared to Nonadoptive Families

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Abstract

Despite the large and growing numbers of adoptive families, little research describes interactions in families with adopted adolescents. Yet, adopted adolescents' increased risk for adjustment problems, combined with the association between family interactions and adolescent adjustment in nonadoptive families, raises questions about differences in adoptive and nonadoptive family interactions. We compared observed and self-reported family interactions between 284 adoptive and 208 nonadoptive families and within 123 families with 1 adopted and 1 nonadopted adolescent. Adolescents averaged 14.9 years of age. Comparisons were made using analysis of variance incorporating hierarchical linear methods in SAS PROC MIXED to control family-related correlations in the data. Parents and children reported more conflict in adoptive families when compared with nonadoptive families. Families with 1 adopted and 1 nonadopted adolescent reported more conflict between parents and adopted adolescents. Observed parental behavior was similar across adoptive and nonadoptive children although adopted adolescents were less warm and, in families with 2 adopted children, more conflictual than nonadopted adolescents. These findings suggest a need for further investigation of the association between family interactions and adopted adolescent problem behavior.

Keywords

adoption; family interactions; adolescence; adoptive families

Several decades of research firmly establish the centrality of family interactions in explaining variations in adolescent adjustment (Steinberg, 2001). This research consistently demonstrates that family interactions characterized by warm, supportive communication and firm, consistent parental enforcement of developmentally appropriate expectations are related to positive adolescent adjustment. Hostile, angry, and conflictual family interactions, on the other hand, are related to poor adolescent adjustment (Steinberg, 2001).

Despite a growing literature on stepparenting (c.f. Crosbie-Burnett & Giles-Sims, 1994; Wallerstein, & Lewis, 2007), the accumulated family interactions research is mostly limited to samples of intact, biologically related families in which parents and children share both common genes and a common family environment. Yet, today's families are increasingly formed through nonbiological means such as child adoption. In the United States, about 120,000 children are adopted annually, with adopted individuals constituting 1.5 million (or at least 2% of) children younger than age 18 years (Nickman et al., 2005). Despite the popularity of adoption, we know little about how family interactions in adoptive families compare to those

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in families with biologically related parents and children. This lack of knowledge leaves us unable to evaluate how current research and theories apply to adoptive families.

Theoretical Perspectives

Many theoretical models have been developed to explain the association between family interactions and adolescent adjustment. Two perspectives relevant to the present study are main effects models and goodness-of-fit models. Main effects (O'Connor, Deater-Deckard, Fulker, Rutter, & Plomin, 1998; Sameroff, 1975) or unidirectional effects models (Sanson, Hemphil, & Smart, 2004), propose that child adjustment is directly influenced by individual family member characteristics. Original proponents of this theory focused on parental behavior as the primary influence on child adjustment. Social mold theory, for example, proposes that parental behavior acts to "mold" or shape child behavior (Hartup, 1978) whereas social learning theory (Bandura, 1977) suggests that children's behavior is learned by observing and modeling parental behavior. To date, most family interaction studies take the parent main effects perspective. Thus, numerous studies provide cross-sectional, longitudinal, and experimental support for the association between warm, supportive parental communication and control and adolescent adjustment as well as the association between parent–child conflict and child maladjustment (c.f. Amato & Fowler, 2002; Darling & Steinberg, 1993; Fletcher, Steinberg, Williams-Wheeler, 2004; Steinberg, 2001).

Although less researched, main effects models also recognize that children play a role in determining their own adjustment (Bell; 1968; Lewis, 1981; Thomas & Chess, 1977). Child characteristics most often associated with adjustment include a child's behavior and temperament. For example, adolescents with difficult temperaments are more likely to be involved in conflictual parent–child interactions than "easier" adolescents (Barber, 1994), increasing their risk for adjustment problems.

A second perspective proposes a more complex relationship between parent and child characteristics and their effect on adolescent adjustment. Sometimes referred to as goodness-of-fit models or interactional models, these theories suggest that it is the mix or "fit" of parent and child characteristics that explains variations in child adjustment (Lerner, 1993; Thomas & Chess, 1977). From this perspective, a good fit is typically seen as the mix of similar characteristics in parents and children resulting in compatibility and positive adjustment. For example, similarity in parent and adolescent personalities, measured as Big 5 factors (Goldberg, 1992), has been associated with fewer adolescent internalizing and externalizing problems (Van Tuijl, Branje, Dubas, Vermulst, & Van Aken, 2005). A poor fit is sometimes defined as the mix of similar risk-inducing characteristics such as a propensity for conflictual interactions (Burt, Krueger, McGue, & Iacono, 2003) or high novelty seeking (Rettew, Stanger, McKee, Doyle, & Hudziak, 2006). More often, a poor fit is defined as a mix of dissimilar characteristics that could lead to incompatibility and conflictual interactions. For example, Galambos & Turner (1999) found that the mix of a less adaptable, rigid mother and a highly active adolescent was associated with parent conflict, particularly when the adolescent was a girl.

Adopted Adolescent Adjustment

As noted earlier, these theoretical perspectives are limited by a reliance on research using biologically related families. This is particularly significant given recent evidence showing that, although most adopted adolescents are well-adjusted, as a group adopted children are more likely to experience adjustment problems than nonadopted children (Bimmel, Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2003; Juffer & van IJzendoorn, 2005; Keyes, Sharma, Elkins, Iacono, & McGue, 2008; Lee, 2003; O'Brien & Zamostny, 2003; Rueter & Koerner, 2008). In our sample, the odds of being diagnosed with a disruptive behavior disorder were

approximately twice as high in adopted as compared to nonadopted adolescents (Keyes et al., 2008), and the odds of experiencing general externalizing problems such as school problems or delinquency were three times greater among adoptees than nonadoptees (Rueter & Koerner, 2008).

Adjustment problems among adopted adolescent likely stem from various sources, including factors directly related to adoption such as pre-adoption adversity or identity development challenges due to limited information about birth parents and/or cultural origins (Brodzinsky, Schechter, & Henig, 1992; Haugaard & Hazan, 2003; Lee, 2003). Based on the well-established link between family interactions and adolescent adjustment (Steinberg, 2001), differences in family interactions between adoptive and nonadoptive families may also be associated with adjustment differences between adopted and nonadopted adolescents. Documenting the presence of family interactions differences would be a first step in testing this hypothesis.

Adoptive Compared to Nonadoptive Family Interactions

Only a handful of studies have examined differences in family interactions across adoptive and nonadoptive families. Lansford and her colleagues (Lansford, Ceballo, Abbey, & Stewart, 2001) compared family interactions between adoptive, two-parent biological, single parent, and stepparent families as reported by mothers, fathers, and an adolescent child. Among several measures tested, only one statistically significant difference between adoptive and nonadoptive families emerged. Adoptive mothers reported more parent–adolescent disagreements than nonadoptive mothers. Another research team compared adoptive family interactions to those in nonadoptive intact and separated families (Lanz, Iafrate, Rosnati, & Scabini, 1999; Rosnati, Iafrate, & Scabini, 2007; Rosnati & Marta, 1997). Using the Parent–Adolescent Communication Scale (Barnes & Olson, 1985), adopted adolescents reported more positive communication with their parents than nonadopted adolescents. Parent reports were mixed, adoptive parents reported more supportive parent–child interactions than nonadoptive parents, but adoptive mothers reported more problematic communication relative to nonadoptive mothers (Lanz et al., 1999). Finally, Rueter and Koerner (2008) assessed family communication patterns across adoptive and nonadoptive families based on observer ratings of warmth, support, and parental control. They found no differences in the distribution of family-level communication patterns.

Thus, previous research in this area is marked by inconsistency. In addition, confidence in study findings is degraded by methodological limitations. For example, no previous study included all three aspects of family interaction known to relate to adolescent adjustment: warm, supportive communication; parental control; and parent–child conflict. Most studies relied solely on self-report (Lansford et al, 2001; Lanz et al, 1999; Rosnati et al., 2007; Rosnati & Marta, 1997), which may be particularly susceptible to reporter bias in studies of adoptive family interactions (Dalton, 1994). Rueter & Koerner (2008) used only aggregated, family-level measures, precluding the possibility of detecting differences in specific dyadic interactions or individual family member perceptions or behavior (Bean, Barber, & Crane, 2006).

The Present Study

The present study addressed each of these methodological weaknesses. We assessed warm, supportive communication; parental control; and parent–child conflict using both self-report and independent observer ratings. Both self-report data and independent observer ratings were gathered from mothers, fathers, and children. We also recognized that we cannot measure and control all possible differences across adoptive and nonadoptive families. Therefore, we not only compared interactions across adoptive and nonadoptive families, we also compared

parent–child interactions within families with an adopted and a nonadopted child. Finally, we used a relatively large sample comprised of 1,230 adolescents from 615 families.

Method

Sample

Study families were participants in the Sibling Interaction and Behavior Study (SIBS; McGue et al., 2007), a longitudinal study designed to investigate sibling influences on adolescent drug and alcohol use. Each of the families consisted of at least one parent and two adolescent children (*M* age = 14.9 years, *SD* = 1.9), who were required to differ in age by no more than 5 years. Families with adopted children were identified through records from three large adoption agencies (average of between 600 and 700 placements each year). Nonadoptive families were identified using state birth records. Researchers located 90% of the identified adoptive families and 85% of the identified nonadoptive families. Once located, a parent in each family was interviewed to establish study eligibility. In addition to the children's age requirement described above, study eligibility was limited to families living within driving distance of the research lab and to children with no physical or mental handicap that would preclude completing the daylong intake assessment. All adopted children were required to be placed for adoption prior to 2 years of age (*M* = 4.7 months, *SD* = 3.4 months).

Sixty-three percent of the eligible adoptive families and 57% of the eligible nonadoptive families agreed to participate in the study. To determine the representativeness of participating families, a brief phone interview assessing parents' education, occupational status, marital status, and the number of parent-reported behavioral disorders in their eligible to participate children was administered to 73% of nonparticipating but eligible families. Results showed that the study sample is generally representative of the population of families from which it was drawn and, based on census data, did not differ from families with two or more children in the metropolitan region where the university is located (McGue et al., 2007).

The adopted adolescents reflected the ethnic diversity, and female preponderance of adopted infants placed in Minnesota during the relevant years (McGue et al., 2007). Seventy-four percent of adoptees were born outside the United States. Among international adoptees, 90% were adopted from South Korea and 60% were female. Among domestic adoptees, 79% were White and 41% were female. Consistent with Minnesota demographics in the relevant birth years, 95% of the nonadoptive adolescents were White and 50% were female.

The study sample consisted of two subsamples. The first subsample included 285 families with two adopted children and 208 families with two children biologically related to their parents and to one another. This subsample provided comparisons between adoptive and nonadoptive families. The second subsample included 124 families with one adopted and one nonadopted child, the latter biologically related to at least one of the parents. This sample provided within family comparisons between an adopted and non-adopted adolescent.

Subsequent to study participation, it was determined that two adopted children, one from each subsample, did not meet study participation requirements. They and their families were excluded from the final sample. Thus, the final between family comparisons subsample contained 615 families: 284 adoptive families, including 568 adopted adolescents, 283 mothers, and 260 fathers, and 208 nonadoptive families, including 416 non-adopted adolescents, 207 mothers and 177 fathers. The final within family comparisons subsample contained 123 families, including 123 adopted adolescents, 123 nonadopted adolescents, 122 mothers, and 111 fathers.

Procedures

Participating family members visited the research lab to complete informed consent forms and a battery of assessments, including the self-report surveys and two 5-min videotaped family interactions that are used in this study. Self-report surveys of parent–child interaction characteristics were independently completed by each family member. The videotaped family interactions were designed to elicit a variety of family interactions, including warm, supportive behavior, parental control, and hostile, conflictual behavior. The videotaping took place in a room decorated to look like a living room/dining room, with family members seated around a dining table. The video camera was inconspicuously placed in a bookcase. However, family members were aware that they were being videotaped. A trained interviewer explained the tasks to the family members, and then left the room for videotaping. For the first task, families were presented with a novel object, a Rorschach inkblot (Exner, 2002), and asked to come to a consensus about what the inkblot resembled. For the second task, families were presented with a moral dilemma (Kohlberg, 1981). In the story, a man's wife has been diagnosed with a fatal disease but he cannot afford to buy the only drug that can save her life. Families were asked to decide: (a) Whether the man should steal the drug for his wife? and (b) Whether he should also steal the drug for a stranger in need?

Measures

In this study, we compared levels of warm, supportive communication; parental control; and parent–child conflict across adoptive and nonadoptive families. We assessed these concepts using self-reported and observer-reported measures, as described below.

Self-reported family interactions were assessed using the Parental Environment Questionnaire (PEQ; Elkins, McGue, & Iacono, 1997). This paper-and-pencil questionnaire asks family members to rate statements describing their interactions with other family members on a 5-point scale ranging from 1 (*definitely true*) to 4 (*definitely false*). Parents independently rated their interactions with each child, and adolescents rated interactions with each parent.

Self-reported warm, supportive communication was assessed using the PEQ Involvement subscale. This subscale contains 12 statements. Parent statements included, for example, "My child talks about his/her concerns and experiences with me" and "I praise my child when he/she does something well." Adolescent statements were similar: "I talk about my concerns and my experiences with my mother/father" and "My mother/father praises me when I do something well." Each family member's responses were summed, creating four measures: mother to adolescent, father to adolescent, adolescent to mother, and adolescent to father. Interitem reliability ranged from .82 to .86.

Self-reported parental control was assessed using the five-item PEQ Structure subscale. Our interest was in measuring parents' attempts to influence adolescent behavior and attitudes. Therefore, only parent reports of control were used in this study. Parental control statements included, "I make it clear what I want my child to do or not do" and "It is important to me that my child obeys the law." Each parent's responses were summed, creating two measures, mother to adolescent and father to adolescent control; with interitem reliability ranging from .46 to .49.

Self-reported parent–child conflict was assessed using the 12-item PEQ Conflict subscale. Parent-report conflict statements included, "Often there are misunderstandings between my child and me," "My child and I often get into arguments," and "My child often angers and annoys me." Adolescent statements included: "Often there are misunderstandings between my parent and me," "My parent and I often get into arguments," and "My parent often angers and annoys me." Each family member's responses were summed to create four measures: mother

to adolescent, father to adolescent, adolescent to mother, and adolescent to father. Interitem reliability ranged from .87 to .89.

Observer-reported family interactions—Trained observers viewed the family interaction tasks described above and globally rated 12 family interaction characteristics using the Sibling Interaction and Behavior Study Rating Scales, adapted from the Iowa Family Interaction Rating Scales (IFIRS; Melby et. al, 1998). Each family member's behavior toward each of the other family members was rated using a 10-point scale ranging from 1 (*not at all characteristic of the person*) to 9 (*mainly characteristic of the person*). The IFIRS has been used in more than a dozen research studies with consistently high interrater reliabilities assessed as intraclass correlations (ICC) ranging from .55 to .85 (Melby & Conger, 2001). For the present study, each observer received approximately 100 hr of training and was required to pass written and observation examinations before viewing videotapes. Observers attended biweekly coder meetings for ongoing training and to prevent "rater drift." Observer reliability was assessed by randomly assigning 25% of all tapes to be rated by a second observer, and then comparing the primary and secondary ratings using ICC (Shrout & Fleiss, 1979; Suen & Ary, 1989).

Observed warm, supportive communication—Observed warm, supportive communication was measured using four IFIRS scales. The Communication scale assessed a family member's ability to clearly and appropriately express his/ her own point of view, needs, and desires. Those who expressed views in a way that encouraged conversation received higher scores than those who did not. The Listening scale assessed the extent to which a family member verbally and nonverbally attended to another member who was speaking. The Warmth scale assessed verbal and non-verbal expressions of caring, concern, and support. The Prosocial scale assessed the extent to which a family member treated others politely and with respect. Each family member received a separate score for their behavior to each of the other family members. Thus, parents received two sets of four scores, one set for each child. Adolescents also received two sets of scores, one for each parent. Each set of four scores was summed to create measures of mother to adolescent, father to adolescent, adolescent to mother, and adolescent to father observed warm, supportive communication. Interitem reliability ranged from .74 to .77. ICCs ranged from .61 to .76.

The Control scale—The IFIRS Control scale measured observed mother control (ICC = .60) and observed father control (ICC = .61). Observers coded the extent to which each parent attempted to or succeeded in controlling or influencing the adolescent's attitudes, behavior, and family interactions.

Observed conflict—Observed conflict was measured using two IFIRS scales. The Hostility scale assessed the extent to which a family member's behavior was characterized by anger, hostility, and contempt. The Angry Coercion scale assessed how much family member used hostile threats or demands to gain compliance. Scores from these two scales were summed to create measures of mother to adolescent, father to adolescent, adolescent to mother, and adolescent to father observed conflict. Correlations between the two scales ranged from .84 to .93. ICCs ranged from .58 to .78.

Analysis Plan

In this study, we compared levels of warm, supportive communication; parental control; and parent–child conflict between adoptive and nonadoptive parent–child dyads. As described above, each aspect of family interaction was assessed by adolescents, mothers, fathers, and independent observers. We used two subsamples to make the comparisons. The first subsample consisted of families with two adopted children and families with two biologically related children. Comparisons using this subsample were made between adoptive and nonadoptive

families. The second subsample consisted of families with one adopted child and one nonadopted child. Comparisons using this subsample were made within families by comparing family interactions between parents and their adopted children to family interactions between those same parents and their nonadopted children. This is an especially powerful test in that it controls for unmeasured differences between adoptive and non-adoptive families.

Comparisons were made using analysis of variance (ANOVA). Offspring sex, birth order, and age did not differ significantly as a function of adoptive status in the between family subsample. However, in the within family subsample, adopted adolescents were more likely to be male (54.5% vs. 37.1%, $p < .001$), the older sibling (81.3% vs. 18.7%, $p < .001$), and chronologically older (15.5 yrs. vs. 14.3 yrs., $p < .001$) than nonadopted adolescents. Therefore, adolescent age, sex (male/female), and birth order (elder/younger) were included as covariates in each ANOVA model. The correlated nature of the family data was accounted for with hierarchical linear methods as incorporated into the Statistical Analysis System (SAS) PROC MIXED (Littell, Milliken, & Stroup, 1996). Effect sizes were estimated by dividing the difference in the covariate-adjusted means by the residual standard deviation.

Results

Between Family Comparisons

Family interaction comparisons between adoptive and nonadoptive families are shown in Table 1. We found evidence of less warm, supportive communication in adoptive families compared to nonadoptive families but statistically significant differences were limited to adopted adolescent's perceptions of communication with mother (effect size [ES] = −.20) F [1, 484] = 6.40, $p < .05$, and observed behavior directed to both mother (ES = −.22) F [1, 477] = 6.88, $p < .05$, and father (ES = −.23), F [1, 375] = 6.16, $p < .05$. None of the parent comparisons reached statistical significance.

We also found evidence of more parent–child conflict in adoptive compared to nonadoptive families. All adoptive family members consistently reported more parent–child conflict than nonadoptive family members (ES range: .32 to .25). According to the trained observers, however, conflictual behavior in adoptive families was confined to adolescent behavior directed to parents.

Parental control findings were mixed and not confirmed across self- and observer reports. Nonadoptive mothers reported significantly more parental control than adoptive mothers. Observers saw nonadoptive fathers as exhibiting more parental control than adoptive fathers.

Within Family Comparisons

Within family comparisons (see Table 2) partially replicated the between family findings. For example, we found evidence of less warm, supportive communication between parents and adopted adolescents compared to communication between the same parents and their nonadopted children. This evidence was primarily derived from adolescent self-reports and observed adolescent behavior, although mothers also reported less warm, supportive communication with their adopted children (ES = −.50, F [1, 116] = 8.59, $p < .05$). Mothers and adolescents also reported greater conflict between parents and adopted children compared to nonadopted children (ES range: .49 to .65). Within families, we found no differences in parental control of adopted versus nonadopted adolescents.

Post Hoc Analyses

Associations between family interactions and age at adoption placement or adoptee race or ethnicity might contribute to these findings. Using SAS PROC MIXED and controlling for the

adopted adolescent's sex, age, and birth order, and age at placement (measured continuously in months) produced only two contradictory statistically significant associations. However, associations between family interactions and adoptee race/ethnicity (White/ethnic minority) showed a pattern of more negative interactions between parents and White adoptees (self-reported conflict: adolescent to mother, ES = .33, $p < .007$; adolescent to father, ES = .25, $p < .032$); mother to adolescent, ES = .54, $p < .001$; and mother's observed warmth, support (ES = −.55, $p < .008$). Contrary to this pattern, fathers reported more warm, supportive communication with White adoptees (ES = .43, $p < .007$).

Discussion

Recent studies show that a small, yet notable group of adopted adolescents are at increased risk for developing adjustment problems relative to nonadopted adolescents (Bimmel et al., 2003; Juffer & van IJzendoorn, 2005; Keyes et al., 2008; Lee, 2003; O'Brien & Zamostny, 2003; Rueter & Koerner, 2008). The strong link between family interactions and child adjustment in nonadoptive families (Steinberg, 2001) suggests that differences in levels of warm, supportive communication; parental control;, or parent–child conflict across adoptive and nonadoptive families could be associated with this increased risk. However, we know little about how adoptive family interactions compare to those in nonadoptive families. By addressing methodological weaknesses in the few prior studies, this investigation produced solid evidence of similarities and important differences in adoptive and nonadoptive family interactions.

In many ways family interactions in adoptive and non-adoptive families were found to be more similar than different. Levels of warm, supportive parent communication and parental control were similar across adoptive and non-adoptive families and within families with an adopted and a nonadopted child. Parent–child conflict and adolescent behavior were exceptions. Family members consistently reported more conflict between parents and adopted adolescents. Further, independent observers rated adopted adolescents as less warm and, in families with two adopted children, more conflictual than nonadopted adolescent. Post hoc analyses demonstrated that these effects could not be attributed to age at placement or ethnic minority status.

Findings from earlier research comparing adoptive and nonadoptive family interactions have appeared to produce inconsistent results. Two points of agreement between this study's findings and those of earlier studies help to bring out consistencies across the available research. First, earlier studies also reported more similarities than differences in adoptive and nonadoptive family interactions (Lansford et al, 2001; Lanz et al, 1999; Rosnati et al., 2007; Rosnati & Marta, 1997; Rueter & Koerner, 2008). Second, in the two prior studies that compared parent–child conflict in adoptive and nonadoptive families, mothers also reported more parent–child conflict in adoptive than in nonadoptive families (Lansford et al, 2001; Rosnati & Marta, 1997).

Thus, the available evidence suggests that although most interactions are similar between adoptive and nonadoptive families, there is more conflict between parents and adopted adolescents than between parents and nonadopted adolescents. This finding is significant because substantial research implicates parent–child conflict in the development of adolescent adjustment problems (Adams & Laursen, 2007; Burt, McGue, Krueger, & Iacono, 2005; Caples & Barrera, 2006; Smetana, 1996). Further, increased negativity in adoptive families was mostly observed in adopted adolescent behavior. Parental behavior was similar across adopted and nonadopted children but adopted adolescents were, on average, seen as more conflictual and less warm than nonadopted adolescents.

We interpret these study findings based on two theoretical perspectives, main effects models and goodness-of-fit models. In doing so, this descriptive report helps to lay the groundwork for future studies examining factors related to increased conflict in adoptive families relative to nonadoptive families and its association to adopted adolescent adjustment.

Theoretical Discussion of Study Findings

The first theoretical perspective to consider encompasses the main effects models. These models propose that variations in either parental or adolescent behavior explain adolescent adjustment (O'Connor et al., 1998; Sameroff, 1975; Sanson et al., 2004). Although the current study did not test this or any other theory, we can use the main effects perspective to interpret our findings. From this perspective, differences in behavior between adoptees and nonadoptees, in the absence of differences in parent behavior, would be interpreted as an adolescent main effect. Specifically, this would suggest that the adopted adolescents' observed tendency to engage in less warm, more conflictual interactions stems directly from dispositional and behavioral differences between adopted and nonadopted adolescents.

The source of this potential adolescent main effect is a topic for future research. For now we can speculate that adoptee temperament or personality characteristics, the most often studied source of child main effects (c.f., Shiner & Caspi, 2003), may play a role. If so, this would suggest a gene-environment correlation (Scarr & McCartney, 1983) such that adopted adolescent characteristics may evoke higher levels of parent–child conflict than nonadopted adolescents. Research showing that U.S. domestically adopted children experience greater behavior problems and more mental health referrals (Juffer & van IJzendoorn, 2005; Keyes et al., 2008) support this possibility. Adoption researchers have also described adoption-specific stressors that could increase adoptee negativity. For example, identity development, a potentially stressful task for any adolescent, can be compounded for adopted adolescents by differences in appearance between family members and peers and questions about birth parents (Bimmel et al., 2003; Grotevant, Wrobel, van Dulmen, & McRoy, 2001; Lee, 2003).

Goodness-of-fit models (Lerner, 1993; Thomas & Chess, 1977) provide a second framework for interpreting this study's findings. According to this perspective, how parent and adolescent characteristics fit together influences adolescent adjustment. Proponents of this perspective would explain this study's findings as a mismatch in parent and adopted child characteristics such that the same behavior directed toward different family members can produce different results. Our observational data from families with one adopted and one nonadopted child are particularly relevant here (see Table 2). In these families, both adopted and nonadopted children were observed while interacting with the same parents. On average, these parents were seen as treating their two children similarly. Yet, adopted adolescents were rated as less warm and supportive than their nonadopted siblings.

Support for the perspective can also be found in adoption research. For example, two studies have shown that parental perception of a mismatch between parent and adopted child temperament and behavior is associated with less positive child social interactions (Grotevant et al., 2001) and child behavior problems (Grotevant, McRoy, & Jenkins, 1988; Grotevant et al., 2001). A third paper demonstrated that the same family interactions can be associated with different risk levels for adopted and nonadopted adolescents (Rueter & Koerner, 2008). Specifically, adopted adolescents in families whose interaction style de-emphasized communication were at 3 to 5 times greater risk of behavior problems compared to nonadopted adolescents whose families used the same interaction style.

Overall, these perspectives suggest two potential sources of greater conflict in adoptive compared to nonadoptive families. Testing the main effects perspective will require a deeper understanding of those predictors of negative child behavior specific to adoption and the

adoption experience. Testing the goodness-of-fit perspective will require the additional understanding of adoptive parent experiences and characteristics and how parent and child experiences fit together such that adoptive families experience higher levels of conflict.

Methodological Discussion of Study Findings

Explanation of the study findings can also be based, in part, on sample characteristics and study methods. For example, similarities in parental behavior and differences in adolescent behavior across adoptive and nonadoptive dyads could be accounted for by parent and child maturity levels. Parents, even those faced with a difficult child, are probably more capable of moderating their behavior during videotaped interactions than adolescents and adoptive parents may be particularly responsive to social desirability (Dalton, 1994). Although this explanation is quite plausible, it is weakened by the adoptive parents' willingness to report elevated conflict with adopted children. If adoptive parents wished to portray themselves and their families in a desirable light, one would expect social desirability to also extend to the conflict measures.

Possibly adoptive parents have a lower threshold for reporting conflict than nonadoptive parents just as adoptive parents may have a lower threshold for turning to professional help for their adopted children's behavior problems (Warren, 1992). However, the finding of more conflict with an adopted child in both the between—and within—family comparisons makes this explanation less likely. In families with an adopted and a nonadopted child, it seems unlikely that parents would hold their adopted child to a different standard for conflict than their nonadopted child.

We believe the most plausible explanation for this study's findings lies in our use of both self-reports and observer ratings, allowing us tap into the different processes represented by the two approaches. As described by Darling & Steinberg (1993), self-reported family interactions tend to measure global, dyadic interactions whereas observers typically rate specific family member behaviors. Questionnaire items like "Often there are misunderstandings between my child and me" or "My child often angers and annoys me" could be endorsed in response to negative behavior initiated by either a parent or child but the observational rating scales focused on individual behavior. Thus, adoptive parents and children may have reported more conflictual interactions resulting from negative behavior exhibited by the adopted child only.

In addition to using self-report and observational measures, this study included other significant methodological advances over earlier studies. For example, in a single study, we assessed the three broad family interaction characteristics most often cited as associated with adolescent adjustment (Steinberg, 2001), allowing us to compare our findings across the range of earlier studies. We also controlled unmeasured differences between adoptive and non-adoptive families by comparing adoptive to nonadoptive family interactions both across and within families. These comparisons produced similar results, lending confidence to the study findings.

Methodological strengths aside, this study's results and their interpretation are limited in specific ways. First, we compared family interactions in families with adolescent children. Our findings may not generalize to comparisons of adoptive and nonadoptive families with younger or older children. Also, the nonadoptive families in this sample were all families with biologically related parents and children. Other types of nonadoptive families could include stepfamilies and families formed through assisted reproductive technologies. Comparisons using a broader sample of nonadoptive families are needed to fully understand how adoptive family interactions compare to those in all nonadoptive families. Finally, lower reliability for the parent control measures may have contributed to the lack of significant findings for that construct.

Considering both strengths and limitations, we can conclude that there is good reason to further investigate the unique aspects of adoptive family interactions and their influence on adopted child adjustment. This conclusion is based on evidence of more conflictual interactions in parent-adopted child dyads than in nonadoptive dyads. It draws on the substantial support for an association between parent–child conflict and adolescent adjustment (Adams & Laursen, 2007; Burt et al., 2005; Caples & Barrera, 2006; Smetana, 1996) as well as indications that adopted adolescents are at greater risk for adjustment problems than non-adopted adolescents (Bimmel et al., 2003; Juffer & van IJzendoorn, 2005; Keyes et al., 2008; Lee, 2003; O'Brien & Zamostny, 2003; Rueter & Koerner, 2008). Our findings further suggest that future research should pay close attention adopted adolescent behavior as a source of family conflict, either as a main effect or a response to incompatibility in parent and child personality or behavioral characteristics.

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Table 1

Between Family Comparisons: ANOVA Results of Comparing Mean Family Interactions Between Adoptive and Nonadoptive Families

	Self-report of interactions					Observer report of interactions				
	Adopted adolescents[a]	Nonadopted adolescents[b]	*F*	*p*	ES	Adopted adolescents[a]	Nonadopted adolescents[b]	*F*	*p*	ES
Adolescent to mother										
Warmth, support	38.97 (6.3)	39.85 (6.0)	6.40	<.05	−.20	10.22 (2.9)	10.70 (2.8)	6.88	<.05	−.22
Conflict	22.51 (7.6)	21.00 (6.5)	9.93	<.05	.28	3.64 (2.4)	3.23 (2.0)	5.92	<.05	.20
Adolescent to father										
Warmth, support	37.89 (6.4)	38.12 (6.7)	0.75	.39	−.08	10.07 (3.0)	10.59 (2.8)	6.16	<.05	−.23
Conflict	22.04 (7.1)	20.75 (6.5)	8.70	<.05	.25	3.22 (2.0)	2.87 (1.7)	8.38	<.05	.26
Mother to adolescent										
Warmth, support	42.76 (4.2)	43.05 (4.0)	2.07	.15	−.17	15.35 (4.1)	14.79 (3.7)	2.39	.12	.30
Control	17.59 (1.7)	17.90 (1.5)	5.91	<.05	−.43	5.12 (1.5)	5.19 (1.3)	0.43	.51	−.12
Conflict	21.60 (6.5)	20.04 (6.1)	10.35	<.05	.32	2.57 (1.6)	2.63 (1.8)	0.10	.76	−.04
Father to adolescent										
Warmth, support	39.66 (4.9)	39.53 (5.3)	0.01	.92	−.01	13.97 (3.9)	13.92 (4.1)	0.01	.92	.02
Control	17.64 (1.6)	17.83 (1.7)	1.89	.17	−.26	5.09 (1.5)	5.41 (1.4)	5.14	<.05	−.55
Conflict	22.92 (6.3)	21.65 (6.1)	7.33	<.05	.31	2.38 (1.2)	2.40 (1.3)	0.01	.93	.01

Note. ANOVA = analysis of variance; ES = effect size.

[a] $N = 568$.

[b] $N = 416$.

Table 2

Within Family Comparisons: ANOVA Results of Comparing Mean Family Interactions Across Adopted and Nonadopted Adolescents in the Same Family

	Self-report of interactions					Observer report of interactions				
	Adopted adolescents[a]	Nonadopted adolescents[b]	*F*	*p*	ES	Adopted adolescents[a]	Nonadopted adolescents[b]	*F*	*p*	ES
Adolescent to mother										
Warmth, support	37.49 (6.0)	40.91 (5.3)	8.13	<.05	−.50	11.56 (3.6)	13.03 (3.6)	8.15	<.05	−.49
Conflict	24.21 (6.7)	19.84 (6.4)	13.42	<.05	.65	4.21 (3.0)	3.77 (2.7)	0.34	.56	.10
Adolescent to father										
Warmth, support	36.73 (6.6)	39.13 (5.9)	1.60	.21	−.22	11.44 (3.4)	12.58 (3.6)	4.54	<.05	−.40
Conflict	23.40 (7.1)	19.96 (6.3)	7.69	<.05	.49	3.79 (2.5)	3.34 (2.5)	0.95	.33	.18
Mother to adolescent										
Warmth, support	41.8 (4.5)	43.41 (3.9)	8.59	<.05	−.50	16.83 (4.5)	17.19 (4.4)	0.25	.62	−.09
Control	17.44 (1.6)	17.74 (1.5)	0.22	.64	−.08	5.42 (1.2)	5.37 (1.4)	0.67	.42	.14
Conflict	22.55 (6.7)	19.55 (5.9)	11.27	<.05	.57	2.81 (1.7)	2.70 (1.5)	0.20	.66	.08
Father to adolescent										
Warmth, support	40.05 (4.6)	40.82 (5.0)	2.22	.14	−.29	15.17 (4.3)	15.09 (4.0)	0.00	.97	.01
Control	17.63 (1.8)	17.75 (1.7)	0.67	.41	.15	5.29 (1.5)	5.37 (1.3)	0.02	.88	.03
Conflict	24.21 (5.4)	22.12 (6.5)	2.03	.16	.27	3.03 (2.3)	2.88 (2.2)	0.26	.61	.10

Note. *n* = 223 for all groups.