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Family Relationships From Adolescence to Early Adulthood: Changes in the Family System Following Firstborns' Leaving Home

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Abstract

This study charted the course of parent-child and sibling relationships from early adolescence to early adulthood and examined how these relationships changed following firstborns' departure from their parents' home for the first time. Data were drawn from a 10-year longitudinal study of family relationships. Participants included mothers, fathers, and first- and second-born children from 184, White, working and middle class families. Multilevel models revealed declines in parent-child conflict, acceptance, and sibling negativity, and increases or U-shaped patterns in sibling and parent-child intimacy over time. Birth order X leaving home interactions revealed that firstborns' leaving home related to changes in family relationship qualities for both first- and second-borns, with relationships improving for firstborns and no changes or declines in relationship quality for second-borns. Overall, the results highlight the inter-relatedness of family subsystems.

Over the last 20 years, an emerging theme in the developmental and family studies literatures is the significance of life transitions (e.g., Rutter, 1996; Schulenberg, Maggs, & O'Malley, 2003). For instance, a body of work has examined how the normative transitions of early adolescence, such as school changes and pubertal development, are related to youth psycho-social functioning (e.g., Eccles et al., 1993; Montemayor, Adams, & Gullota, 1990). More recently, researchers have directed attention at transitions across late adolescence into early adulthood (e.g., Aquilino, 2006; Arnett, 2000; O'Connor, Allen, Bell, & Hauser, 1996). The present study builds on this work by examining the developmental course of parent-child and sibling relationships from early adolescence to early adulthood and by investigating how these relationships change when firstborn youth leave their parents' home for the first time.

As we review in the following pages, most research examining transitions out of the home in late adolescence has focused on the experiences of the youth who leave the home (i.e., their

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parent-child relationships and individual adjustment). A family systems perspective, however, highlights that such transitions also may have implications for other subsystems in the family. That is, a systems perspective alerts us to the notion that family members and dyads do not function in isolation, but both influence and are influenced by other family subsystems (Whitchurch & Constantine, 1993). Accordingly, in addition to examining the family relationship experiences of young adults who leave home for the first time, we investigated whether firstborns' transition out of the home had implications for the family relationships of their second-born siblings.

Family Relationships From Adolescence to Early Adulthood

Early adulthood (approximately ages 18 to 25) is a time of dramatic change. Recent work documents marked variability in the timing and sequencing of life transitions such as finishing school, entering long-term romantic relationships and marriage, parenthood, and beginning a career (e.g., Arnett, 2000; Cohen, Kasen, Chen, Hartmark, & Gordon, 2003). In the face of this variability, most individuals leave their parents' home for the first time during this period (Mogelonsky, 1996). In many cases, leaving home may represent the first marker in the developmental process of moving from adolescence to adulthood. We explored how this developmental transition was related to young adults' family relationships.

In general, research on the transition to adulthood has documented both continuity and change in parent-child relationship qualities. For example, perspectives such as social learning (e.g., Bandura, 1977; Whitbeck, Hoyt, & Huck, 1994) and attachment theories (e.g., Ainsworth, 1982; Hazen & Shaver, 1987) suggest that patterns of functioning learned and enacted during childhood and adolescence will continue to manifest themselves in young adults' relationships. Consistent with these notions, parent-child relationships during adolescence continue to predict parent-child relationship qualities during adulthood, especially early adulthood (Aquilino, 1997, 2006; Thornton, Orbuch, & Axxinn, 1995; Tubman & Lerner, 1994; Whitbeck et al., 1994). For example, greater warmth, intimacy, and cohesion during adolescence is associated with greater emotional closeness, support, and contact with parents during early adulthood (e.g., Aquilino, 1997; Belsky, Jaffee, Hsieh, & Silva, 2001; O'Connor et al., 1996). In contrast, more conflict and strain as well as less affectionate relationships during adolescence are associated with lower levels of emotional closeness, support and exchange and greater rates of conflict in parent-young adult relationships (Aquilino, 1997). It is important to note, however, that across these different studies, the associations between parent-child relationships qualities in adolescence and early adulthood have been small to modest.

Low levels of stability imply an opportunity for some parent-child relationships to change when youth leave home (Aquilino, 1997, 2006). For example, as youth transition out of the home, parents may reduce their levels of control, and offspring may reduce their levels of dependency. As such, "home leaving acts as a catalyst toward a more individuated relationship that is based on the mutual care and respect of two adults" (Aquilino, 1997, p. 682). In line with this notion, studying a national sample Aquilino (1997) found that parents reported decreased conflict with their child following youth's transition out of the home. Sullivan and Sullivan (1980) documented that young adults who left home and attended college reported greater affection, communication, and satisfaction in their relationships with their parents as compared to young adults who commuted to college and resided in their parents' homes. Similarly, Leftkowitz (2005) showed that 78% of youth who transitioned to college or university reported changes in their parent-child relationship, and more than 80% of those described these changes as positive (e.g., feel closer to parents, communication is more open, argue less). Finally, both Dubas and Petersen (1996) and O'Connor and colleagues (1996) found that leaving home was related to more positive

adjustment as compared to remaining at home. In sum, although there is some stability in parent-child relationships across the transition to adulthood, the transition out of the home may provide a chance for relationship transformations, and as such, represents an important time to examine families.

In this study we explored how leaving home was related to young adults' relationships with their parents during the year after their departure. Using 8 years of longitudinal data we charted the developmental trajectories of youth's family relationships from early adolescence into early adulthood. Using a multi-level modeling approach, we examined the trajectories of conflict and warmth in mother-child and father-child relationships across adolescence and into early adulthood and explored how home leaving altered these trajectories. Given recent work (e.g., Aquilino, 1997, 2006; Leftkowitz, 2005), we expected that firstborns would report improvements in their relationships with their parents following their transition out of the home.

Sibling and Parent-Child Relationships of Offspring Who Remain Home

As mentioned, the majority of research examining family relationships during youths' transition into adulthood has focused on parent-child relationships (Aquilino, 2006). A small, but growing body of research suggests, however, that this transition also may have implications for young adults' sibling relationships. For example, despite their centrality in childhood and early adolescence (McHale & Crouter, 1996), some research suggests that sibling relationships decrease in affective intensity as youth approach adulthood (Short & Gottman, 1997; Stocker, Lanthier, & Furman, 1997) and may become less close and more distant (White, 2001). Connecting these findings to youth's leaving home, however, is limited by the fact that most studies have key methodological shortcomings: Reliance on retrospective reports and samples of respondents who range widely in age (e.g., ages 17 to 25). Thus, for many respondents, the transition out of their parents' home may have occurred many years in the past, and as such, may be confounded with other developmental changes (e.g., entering long-term romantic partnership, starting a job, starting a family). In this study, we addressed these limitations, using longitudinal data to examine the implications of leaving home for young adults' family relationships in the first year after their departure.

Additionally, by taking advantage of a sibling research design, we moved beyond previous work's focus on how parent-child relationships change for youth who leave home to also consider how this transition relates to their younger siblings' relationships with their parents. A family systems perspective (e.g., Whitchurch & Constantine, 1993) highlights that changes in one subsystem are likely to reverberate in other family subsystems. From this perspective firstborns' leaving home may lead other family members to renegotiate their roles and relationships. For example, in two-child families, second-borns become the only child remaining in the home, and as a byproduct, may receive greater time with and attention from parents who previously had to divide their energies. In families with three or more offspring, second-borns are elevated into the position of eldest sibling and may experience new responsibilities and privileges associated with their status such as serving as caregivers and chauffeurs for younger siblings or getting a bedroom of their own. In this study, we explored how firstborns' leaving home had implications, not only for their own family relationships, but also for other dyadic relationships within the family system.

The Present Study

The overarching goals of the present study were to: (a) describe the trajectories of first-and second-borns' family relationships from adolescence to early adulthood; and (b) to examine how firstborns' transitions out of the home were related to those trajectories. We built on

previous work with this sample, in which we followed families from middle childhood through the high school years, to study parents' differential treatment of siblings (Shanahan, McHale, Osgood, & Crouter, 2007a; 2007b) and the family structure and relationship correlates of sibling relationship qualities (Kim, McHale, Osgood, & Crouter, 2006). In this paper, we used data collected over an additional three year period to address the novel question of how parent-child and sibling relationships change from before to after firstborns leave home. We include family relationship data beginning in middle childhood, however, to provide a picture of the larger developmental context within which changes as a function of firstborns' leaving home emerge. Readers are directed to Kim et al. (2006) and Shanahan et al. (2007a; 2007b) for depictions of changes in youth reports of parent-child and sibling relationships between about age 7 and about age 19.

Method

Participants

Data were drawn from a longitudinal study of family relationships. Participants were mothers, fathers, and their first- and second-born children from 184 predominantly White, working/middle class, maritally intact families. Nineteen families (9.4%) from the original sample were excluded from the present analyses because members either withdrew during a study year prior to firstborns' leaving home (n = 17, 7.8%), experienced the firstborns' legal emancipation from the family (n = 1, 0.5%), or experienced the death of the firstborn (n = 1, 0.5%). A Hotelling's T^2 test revealed that these 19 families did not differ from participating families in terms of their initial socioeconomic background characteristics (mother education, father education, and family income), T^2 (3, 189) = 0.97, *n.s.* At study Year 3 (the first year used in the present analyses) when measures of interest were available, firstborns averaged 12.82 (SD = 0.57), second-borns averaged 10.21 (SD = 0.93), mothers averaged 38.68 (SD = 3.96), and fathers averaged 41.01 (SD = 5.04) years of age, respectively; families were followed for up to 7 more years. The sibling dyads were almost equally divided among the four gender constellations (i.e., older sister-younger sister, older sister-younger brother, older brother-younger sister, older brother-younger brother). Approximately 43% of these families had children younger than the second-born sibling.

Reflecting the demographics of the region where they resided, families were almost exclusively White and working and middle class. Although the sample is not representative of U.S. families in general, it comes close to capturing the racial background of families from the region of the northeastern state where the data were collected (> 94% White). Approximately 1% of parents had not completed high school, 29% had completed high school, 27% had some college or vocational training, 25% were college graduates, and 18% had postgraduate or professional degrees. At Study Year 3 (1997-1998), the average family income was $66,490 ($SD$ = 30,193); U.S. census data collected in 2000 revealed that average family income in the state was $49,184. Because of the larger goals of the study, this sample included only two-parent and mostly only two-earner families with adolescent-age offspring (i.e., parents who were older and in the labor force for a greater period of time), but nonetheless, the income figures are above the state average.

Families were recruited through letters sent home to 4th and 5th grade students in 16 school districts from a northeastern state. These school districts were generally small in size and served the rural communities and small cities of the region. Families were informed that the researchers were interested in studying "the challenges of rearing children in contemporary US society." Interested families returned a postcard to the project and were contacted by phone to confirm whether they fit the study criteria: that parents were not divorced and that the family included two siblings in the targeted age range (within 1 to 4 years). We do not

know how many families meeting our criteria failed to volunteer, but of those families who returned postcards to us and met our criteria, more than 90% agreed to participate.

Procedure

In the home interviews we collected information on family members' personal characteristics and family relationship experiences. Family members were interviewed separately and interviews averaged between 2 – 3 hours in duration. Informed consent was obtained from each family member, and the family received an honorarium of $100-$200 depending on the phase of the study. Home interviews were conducted on 8 occasions—Years 1, 2, 3, 6, 7, 8, 9, and 10—over the 10 year period of the larger study (note that only Years 3 through 10 were used in the current study). The final family interview occurred one year following the firstborn offspring's completion of high school. Because of the initial variability in children's grade (4^{th} and 5^{th} grade children were recruited) and the fact that families were recruited in two cohorts, firstborns' year of high school completion varied across families. Approximately 1% of firstborns completed high school interviews following phase 6, 39% after phase 7, 47% following phase 8, and 15% after phase 9, respectively. When firstborn offspring no longer lived at home, they were mailed a questionnaire packet.

Measures

Demographic information—Data on family members' education, family size, and offspring characteristics (e.g., age and gender), were obtained from parents at the start of the home interview.

Parent-child conflict was assessed in terms of youth and parent reports of the frequency of conflict in particular relationship domains using a measure adapted from Smetana (1988). Specifically, youth, mothers, and fathers rated the frequency of conflict in their relationship, using a 6-point scale that ranged from 1 (*not at all*) to 6 (*several times a day*); in all, 11 domains of conflict were rated (e.g., chores, appearance, homework and schoolwork). Conflict frequency was calculated as the sum of the 11 item ratings, with higher scores representing greater conflict frequency, and total scores could range from 11 to 66. Cronbach's αs at all phases for all reports of conflict frequency were acceptable, ranging from .76 to .89 for firstborns, .74 to .90 for second-borns, .77 to .90 for mothers, and .84 to .90 for fathers.

The inclusion of both parent and youth reports advances previous work on family relationships during the transition to adulthood because prior studies have relied on single reporters (i.e., either parents or adolescents) and have shown inconsistent results across reporters (e.g., Aquilino, 1997; Dubas & Petersen, 1996). By including both youth and parent reports in the present study, we aimed to resolve some of these inconsistencies.

Parent-child intimacy/acceptance was assessed via two different measures. Youth reported their relationship intimacy with their parents using an 8-item measure developed by Blyth, Hill, and Thiel (1982). Specifically, youth rated their relationship experiences with their mothers and fathers separately on a scale ranging from 1 (*not at all*) to 5 (*very much*). Example items include: "How much does she/he understand what you're really like?" And, "How satisfied are you with the relationship you have with her/him?" Intimacy scores were averaged across the 8 items, with higher scores representing greater intimacy, and total scores could range from 1 to 5. Cronbach's αs at all phases for reports of parent-child intimacy were acceptable, ranging from .79 to .89 for firstborns, and .73 to .87 for second-borns. Mothers and fathers reported on their acceptance/responsiveness using Schwartz, Barton-Henry, and Pruzinsky's (1985) revision of the parents' version of the 24-item Child's Report of Parental Behavior Inventory (CRPBI; Schaefer, 1965). Specifically, mothers and

fathers rated their relationship experiences with their first- and second-born offspring separately on a scale ranging from 1 (*not at all*) to 5 (*very much*). Example items include: "I am a person who understands my child's problems and worries." "I am a person who gives my child a lot of care and attention." And, "I am a person who is able to make my child feel better when he/she is upset." Scores were averaged across the 24 items, with higher scores indicating greater parent-child acceptance, and total scores could range from 1 to 5. Cronbach's αs at all phases for reports of parent-child acceptance were acceptable, ranging from .89 to .94 for mothers, and .92 to .95 for fathers. Again, our study expanded on prior research by including both parent and youth reports in an effort to better understand discrepancies between reporters that emerged in earlier studies.

Conflict/negativity in the sibling relationship was assessed via a 5-item scale from Stocker and McHale's (1992) Sibling Relationship Inventory. Specifically, using a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*), youth rated the frequency with which they behaved in particular ways toward their siblings (e.g., "How often do you feel mad or angry at your brother/sister?"). Conflict/negativity scores were summed across the 5 items, with higher scores representing greater negativity. Total scores could range from 5 to 25. Cronbach's αs for reports of conflict/negativity were acceptable, ranging from .73 to .78 for firstborns, and .72 to .78 for second-borns.

Intimacy in sibling relationships was assessed using the same 8-item measure that indexed parent-child intimacy (Blyth et al., 1982). Youth rated their experiences with their brother/sister on a scale ranging from 1 (*not at all*) to 5 (*very much*). Intimacy scores were summed across the 8 items, with higher scores representing greater intimacy, and total scores could range from 8 to 40. Cronbach's αs at all phases for reports of sibling were acceptable, ranging from .81 to .88 for firstborns, and .79 to .90 for second-borns.

Firstborn's household residence was assessed via parental reports. In every study year, parents were asked if there were any changes in the composition of their household in the previous year. If there were changes, parents were asked who joined or left the household and gave the approximate date of arrival/departure for that individual. Using this information, firstborns' residential status was dummy coded at every phase (0 = firstborns resided in their parents' home; 1 = firstborns resided outside of their parents' home). Youth were coded as leaving home if they resided outside of their parents' home 4 or more nights per week during the academic year.

Of the 184 families with complete data across the study years of interest, 125 firstborns transitioned out of their parents' home during the year following high school completion. On average, these youth were 19.08 (*SD* = .39) years of age. Of those who left home, 91% (*n* = 114) entered college; 22% (*n* = 14) of those who remained in their parents home in the year following high school graduation commuted to college. Thus, approximately 70% of our sample entered college in the year following high school. This percentage is similar to national statistics which indicate that 66% of youth enter college following high school completion (National Center for Educational Statistics, 2008). However, given that the NCES estimate includes individuals who completed GED's up to age 24, our sample likely has a greater proportion of individuals who entered college at ages 18 to 19 than the national average.

Results

Analytic Plan

To address our two study goals: (a) to chart the longitudinal course of first- and second-born offspring's parent-child and sibling relationships and (b) examine how these relationships

changed when firstborns left home we tested a series of multi-level models (MLM) using the Hierarchical Linear Modeling program (Bryk & Raudenbush, 1992). This approach is advantageous because it extends multiple regression to incorporate nested data, does not require equal spacing between observations, and permits for our two study hypotheses to be tested in one model/per dependent variable. In the present study, time was nested within individuals, individuals were nested within sibling dyad, and dyads were nested within families. Thus, our three-level model partitioned variance into: (a) within-individual (over time), (b) between-sibling (within-family), and (c) between-family components.

These models examined how firstborns' transition out of the home was related to the longitudinal course of parent-child and sibling conflict and intimacy/acceptance. At level 1, this model included both linear (i.e., rate of change) and quadratic (i.e., acceleration of change) effects of time to estimate growth curves for each relationship quality. The linear and quadratic terms were centered at 13 years (the approximate age of firstborns in Year 3 of the study). Given that the year of firstborns left home varied across families (e.g., Year 8 for some families, Years 9 or 10 for others), firstborns' residential status (lives at home or moved out following high school completion) was entered at level 1 as a time-varying covariate. A significant effect for residential status (i.e., leaving home) would indicate that the relationship outcome for those who departed diverged from their trajectory prior to leaving home and from that of individuals who did not leave home.

At level 2, the model included effect codes of youth gender (-.5 for females, .5 for males), birth order (-.5 for firstborns, .5 for second-borns), and a gender X birth order interaction. These effects allowed us to examine: (a) whether relationship qualities differed at the initial time point (i.e., firstborn age 13) as a function of youth gender, birth order, or their interaction; (b) whether the developmental trajectories of sibling and parent-child relationship qualities differed as a function of youth gender, birth order, or their interaction; and (c) whether the effects related to the firstborn child leaving home were moderated by youth gender, birth order, or their interaction. Finally, at level 3, because previous research has shown connections between parents' education and parent-adult child relationship qualities (e.g., Aquilino, 1997; Aquilino & Supple, 1991) we included main effects for mother's and father's level of education as controls.

Effect size estimates were calculated by converting unstandardized gamma coefficients (γ) into standardized regression weights (β) by multiplying the obtained coefficients by the standard deviation of the predictor and dividing that product by the standard deviation of the outcome variable. For categorical variables, Cohen's *d*s were calculated by dividing the gamma coefficient by the standard deviation of the outcome and then converting the resultant *d* into β. Note that the estimates involving categorical variables were obtained by re-running the models utilizing a dummy coding as opposed to the effect coding approach. Unstandardized weights (γ) are presented in the Tables, whereas standardized weights (β) are presented in the text for significant effects.

Mother-Child Conflict

Maternal reports—The model examining maternal reports of conflict revealed significant change in conflict over time as well as change following firstborns' transition from the home (see Table 1). Although no differences were found at age 13 (i.e., initial status), a significant linear change X birth order interaction, β = -.09, revealed that mothers' reports of frequency of conflict with firstborns decreased less quickly than did the frequency of their conflict with second-borns. This effect was further qualified by a quadratic effect, β = -.25, that indicated greater acceleration in the decrease in later adolescence/early adulthood (see Figure 1). A main effect of firstborns' leaving home also emerged, β = -.08, indicating that for those who left home, mothers reported a decrease in conflict beyond the prior trajectory of decline and

beyond the change reported by mothers whose firstborn offspring remained home. This effect, however, was qualified by an interaction with birth order, $\beta = .16$, indicating that, following firstborns transition out of the home, mothers reported decreases in conflict with firstborns, but no changes in conflict with second-borns (see Figure 2).

Youth reports—The results for the model examining mother-child conflict revealed significant effects of maternal education and birth order at age 13 (the intercept) as well as significant change in conflict over the transition from adolescence to early adulthood. With respect to the intercept, as can be seen in Table 1, maternal education was negatively associated with mother-child conflict, $\beta = -.13$. Additionally, a main effect of birth order revealed that firstborns reported more conflict with mothers at age 13 than did second-borns at age 13, $\beta = -.23$. Mother-child conflict declined linearly over time, $\beta = -.21$. This linear effect, however, was qualified by a significant quadratic effect, $\beta = -.14$, indicating greater acceleration in the decrease as youth transitioned from middle to late adolescence. This quadratic effect was further qualified by an interaction with birth order, $\beta = .11$, indicating that decrease in conflict in later adolescence was more pronounced for firstborns. Finally, a leaving home X birth order interaction, $\beta = .13$, revealed that, in the year following firstborns leaving home, these youth reported a decrease in mother-child conflict, beyond the normative developmental decrease and that of firstborns who remained home, whereas second-borns in these same families reported a slight increase in mother-child conflict (see Figure 2). This pattern for second-borns whose older siblings left home reflects a divergence from their prior trajectory as well as a difference from that of youth who did not have an older brother or sister leave home.

Father-Child Conflict

Paternal reports—The model examining paternal reports of conflict with youth revealed differences at the intercept and over time (see Table 1). With respect to the intercept, maternal education was negatively associated with mother-child conflict, $\beta = -.12$. Additionally, a main effect of gender, $\beta = .07$, revealed that fathers reported more conflict with sons as compared to daughters when youth were 13 years old. This model also revealed a significant linear change X birth order interaction, $\beta = -.15$, a significant quadratic main effect, $\beta = -.24$, and quadratic change X birth order interaction, $\beta = .11$. Taken together these effects indicate that, as compared to conflict with second-borns, fathers' reports of conflict with firstborns declined more slowly in middle adolescence and accelerated downward more quickly as these youth approached early adulthood (see Figure 1). A main effect of firstborns' leaving home emerged, $\beta = -.15$, indicating that for those who left home, fathers reported a decrease in conflict beyond their prior trajectory and as compared to those with children who remained at home. This effect was again qualified by an interaction with birth order, $\beta = .20$: Following firstborns' leaving home, fathers reported a decrease in conflict with firstborns, but a slight increase in conflict with second-borns (see Figure 2).

Youth reports—Significant effects were obtained at the intercept and over time (see Table 1). At the intercept, maternal education was negatively associated with father-child conflict, $\beta = -.17$. Consistent with father reports, a main effect of birth order, $\beta = .19$, revealed that firstborns reported more conflict with fathers at age 13 than did second-borns at age 13. Similarly to the developmental pattern of mother-child conflict, this analysis also revealed that father-child conflict declined linearly over time, $\beta = -.19$, and that change over time was moderated by birth order, $\beta = -.13$. Specifically, second-borns' reports of father-child conflict revealed more rapid declines over time than did firstborns'. The linear main effect also was qualified by significant effects involving the quadratic terms. First, a significant quadratic effect, $\beta = -.13$, revealed that decrease in conflict accelerated in later adolescence. Second, an overall quadratic effect X birth order interaction, $\beta = .16$, indicated that the rate

of father-child conflict decreased more rapidly for firstborns than second-borns. Finally, a significant firstborn leaving home X birth order interaction emerged, $\beta = .12$. Similarly to the pattern for mother-child conflict, there was a decrease in father-firstborn conflict from before to after youth left home, whereas second-borns in these same families experienced an increase in father-child conflict over this period as compared to both their prior trajectory and to the reports of second-borns whose older siblings who did not leave home (see Figure 2).

Mother-Child Acceptance/Intimacy

Maternal reports—The model examining mothers' reports of acceptance revealed significant effects at the intercept and change over time (see Table 2). First, at age 13, a main effect of birth order, $\beta = -.13$, revealed that mothers reported greater acceptance of firstborns as compared to second-borns at age 13. Second, a main effect for the linear term, $\beta = -.22$, indicated that mother-child acceptance declined over time. This effect, however, was qualified by an interaction with birth order, $\beta = -.10$, such that the decline in acceptance was steeper for second-borns as compared to firstborns. These linear effects were further qualified by a significant quadratic effect, $\beta = -.08$, indicating further acceleration in the decline in acceptance as youth entered later adolescence (see Figure 3). Finally, a main effect of leaving home, $\beta = .12$, revealed that, following firstborns' transition from the home, mothers reported increases in acceptance of both first- and second-born offspring as compared to their prior trajectories and mothers whose firstborns remained home. This main effect, however, was qualified by an interaction with gender, $\beta = -.08$, indicating that the positive change in acceptance was greater for daughters than sons.

Youth reports—The results for the model examining youth reports of mother-child intimacy revealed significant changes over time (see Table 2). Specifically, mother-child intimacy declined linearly over time, $\beta = -.38$. This decline, however, was moderated by an interaction with birth order, $\beta = .08$. Specifically, firstborns reported greater declines in mother-child intimacy over time than did second-borns. The linear decline, however, was moderated by a significant quadratic effect, $\beta = .23$, indicating an attenuation of the decline over time by late adolescence. This quadratic effect was further moderated by an interaction with birth order, $\beta = -.09$, which revealed that, in later adolescence/early adulthood, firstborns reported greater increases in intimacy than did second-borns. Finally, a significant main effect of firstborns' leaving home emerged, $\beta = .10$, but was qualified by an interaction with birth order, $\beta = -.09$. Specifically, firstborns showed increases in intimacy with their mothers from before to after they left home, above and beyond their prior trajectory and that of firstborns who did not leave home, whereas second-borns reported no change with respect to maternal intimacy across this period.

Father-Child Intimacy/Acceptance

Paternal reports—The model examining fathers' reports of acceptance of their first- and second-born offspring revealed no significant differences at age 13 and only linear change over time (see Table 2). Specifically, a negative linear effect, $\beta = -.19$, revealed that fathers reported decreasing acceptance of both first- and second-borns as their children moved from early to late adolescence (see Figure 3). Firstborns' leaving home was not related to changes in father-child acceptance.

Youth reports—Youth reports of father-child intimacy showed significant effects at the intercept and change over time (see Table 2). First, at age 13, there was a main effect for gender, $\beta = .14$. Specifically, boys reported greater intimacy with their fathers than did girls. Second, father-child intimacy declined over time, $\beta = -.46$. This decline, however, was moderated by an interaction with birth order, $\beta = .17$. Specifically, firstborns reported

greater declines in father-child intimacy over time than did second-borns. These patterns of linear decline, however, were further moderated by a significant quadratic effect, β = .28, and the quadratic effect was qualified by interactions with both birth order, β = -.17, and gender, β = -.09: Similarly to the results for mother-child intimacy, in late adolescence firstborns experienced increases in father-child intimacy, and this pattern was especially true for firstborn girls. Firstborns' leaving home was not related to changes in father-offspring intimacy.

Sibling Relationship Qualities

With respect to the model examining *sibling conflict/negativity*, no effects were observed at the intercept (see Table 3). There was a significant linear decline in conflict over time, β = -.11, which was moderated by birth order, β = -.28. Specifically, second-borns displayed more accelerated declines in sibling conflict than did firstborns. This linear decline also was moderated by a quadratic effect, β = -.34, such that the decline accelerated more quickly in later adolescence. Finally, a significant main effect of firstborns' leaving home, β = -.08, revealed that first- and second-borns' reports of sibling conflict decreased beyond the prior trajectory of decline from the year before to the year after firstborns left home and that of similar-aged siblings who still shared the parental home. This effect was further qualified by an interaction with gender, β = -.12, indicating that this effect was especially evident for brothers.

The model examining *sibling intimacy* revealed effects at the intercept as well as over time (see Table 3). At the intercept, there was a positive effect for fathers' education, β = .13, as well as main effects for birth order, β = .11, and gender, β = -.14, such that second-borns reported greater intimacy at age 13 than firstborns and that sisters reported greater intimacy than brothers. Further, a significant birth order X linear slope interaction, β = .15, indicated that second-borns reported greater increases in intimacy than firstborns. The linear main effect also was qualified by a significant quadratic effect, β = .21, indicating an accelerated increase in intimacy as youth entered later adolescence. Finally, a significant main effect for firstborns' leaving home (β = .08) revealed that after firstborns left home, first- and second-born siblings reported an increase in intimacy, beyond the prior trajectory and as compared to similar-aged siblings who shared the parental home.

Discussion

This study charted the developmental course of parent-child and sibling relationships from early adolescence to early adulthood and examined how these relationships changed following firstborns' departure from their parents' home. At the most general level our findings contribute to both developmental and family systems literatures in showing how youths' developmental transitions may have implications that extend beyond their own experiences and connect to changes in other family subsystems. In the following pages, we discuss the implications of these findings, note the limitations of this study, and suggest directions for future research.

Changes in Family Relationships From Adolescence to Early Adulthood

Our findings indicate that the frequency of parent-offspring conflict declined across middle adolescence as youth approached adulthood according to both parent and youth reports. Furthermore, birth order differences in these trajectories revealed that the peaks in conflict for second-borns were evident about 2 years earlier than those for firstborns. In our sample, siblings, on average, were 2.61 years apart in age. As we have suggested in earlier work examining youth reports only (Shanahan et al., 2007a), it appears that parents' frequency of conflict with both first- and second-born offspring peaks at the same point in time, when

offspring differ in age, and that peaks in conflict are timed to the family's first experience with the transition to adolescence. Consistent with a family systems perspective, which suggests that relationship dynamics in one subsystem may affect other family subsystems, these findings indicate the possibility of cross-over or contagion in family conflict. In line with this notion, findings revealed that sibling negativity also peaked at approximately the same time (i.e., for firstborns at approximately age 13 and for second-borns about age 11).

In accordance with research suggesting that leaving home is related to positive changes in relationships (e.g., Aquilino, 1997; Leftkowitz, 2005; Sullivan & Sullivan, 1980), we also found that firstborns' leaving home was related to decreases in the frequency of conflict with their parents. We extended prior research in showing that these changes emerged beyond *a normative pattern of developmental change*. Although generally modest in size, our results also indicated that firstborns' leaving home may have implications for their younger siblings' relationships with parents. For example, in contrast to the reduced levels of conflict that firstborns experienced following the transition from home, second-borns exhibited increased conflict with both mothers and fathers across this period. Parent reports of conflict with offspring, however, did not reveal these same increases. Younger siblings may be especially sensitive to changes in family dynamics following their older siblings' departure because of changes in their daily roles and activities. For example, in response to being asked how their relationships changed with their parents following their older siblings' departure one second-born told us: "I think there's a little more attention from my parents which sometimes a good thing and sometimes a bad thing. Well they talk to me more about school, running, sports, and friends and things. It seems like they're into my life." Another participant reported, "She's been paying more attention to me, school, schoolwork, what I'm doing. Makes it kind of odd to be under the more watching eye. Umm, yeah the…more of the focus has been shifted to me." To date, normative developmental transitions have been studied in terms of their impact on those making a transition. Consistent with a family systems perspective, our findings highlight how the larger family system may change following an adolescents' leaving home.

In contrast to the relative agreement between parents and youth in analyses of parent-offspring conflict, models examining parent-offspring acceptance and intimacy revealed greater partner divergence. Whereas mothers and fathers reported declines in acceptance with both first-and second-born offspring from early adolescence to early adulthood, youth reports of intimacy revealed a U-shaped pattern. That is, youth reported declines in intimacy with parents across early and middle adolescence, but as they entered early adulthood, this downward trajectory leveled off for second-borns and became more positive for firstborns (especially daughters). This upward turn in positivity as youth enter late adolescence/early adulthood is consistent with previous work by Thornton and colleagues (1995) who showed that both parent and child reports were characterized by improvements in understanding and affection during this period. The general decline in maternal and paternal reports of acceptance, however, is inconsistent with this previous work. This divergence in findings may reflect differences in our measures of acceptance and intimacy; acceptance was indexed affectively as well as behaviorally, whereas intimacy was solely affective in nature. Future work should disentangle how parents' and youths' perceptions of these dimensions of parent-offspring relationships change over time with specific attention to their trajectories during the transition to adulthood.

Similarly to the results for parent-offspring conflict, we also found that leaving home was modestly associated with improvements in mother-offspring intimacy reported by adolescents and maternal acceptance reported by mothers of firstborns. Firstborns' reports of increased intimacy following the transition out of the home were consistent with the upward trajectory suggesting improvement in this domain in later adolescence. With respect to

mothers' reports of acceptance, the finding that leaving home was related to increases in acceptance was inconsistent with the overall trajectory of mothers' reports of declining acceptance across adolescence, providing additional evidence that leaving home serves as an opportunity for relationship change. In contrast to the results involving mothers, firstborns' leaving home was not related to changes in the trajectories of father-offspring intimacy/acceptance. Although we did not have *a priori* hypotheses regarding mother-father differences, these findings suggest that mothers and offspring may be more sensitive to changes in the contexts of their relationships, possibly because of mothers' greater involvement with offspring throughout adolescence (e.g., Collins & Russell, 1991) and their higher initial levels of relationship acceptance and intimacy.

With respect to sibling relationship qualities, our models indicated that, in general, intimacy increased throughout adolescence and into early adulthood, whereas sibling negativity declined across this same period. Interactions with birth order and gender revealed that these patterns were not uniform across dyads, however, and our results corroborate previous findings that sisters and younger siblings report more intimacy during adolescence (e.g., Furman & Buhrmester, 1992). Although previous work suggests distancing in sibling relationships in adulthood (e.g., White, 2001), we found that firstborns' leaving home was associated with small but significant improvements in the sibling relationship (i.e., increased intimacy and decreased conflict) for both first- and second-born offspring. It could be that relationship distancing occurs at later ages when both siblings are immersed in adult roles (e.g., starting careers, become parents), but our findings suggest that siblings actually become closer as youth first leave home.

Limitations and Future Directions

The present study was limited by several methodological shortcomings. First, our sample included first- and second-born siblings from married, two-parent, working/middle-class, European American families from one geographic region of the United States. It is important for future work to examine the course of parent-adolescent and sibling relationships in more diverse families, in terms of structure and culture. Research shows, for example, that youth leave home earlier when they reside with single parents or step-families, and that more negative family relationships often predict these earlier transitions (e.g., Cooney & Mortimer, 1999; Stattin & Magnusson, 1996). Further, cross-cultural research indicates that, in comparison to youth in the US, youth leave home at later ages and there is marked variability in leaving home patterns within Europe (e.g., Cherlin, Scabini, & Rossi, 1997; Seiffge-Krenke, 2006; Silbereisen, Meschke, & Schwarz, 1996). Given these differences, it is important that future work replicate our findings with more diverse samples.

Second, in our sample, the vast majority of firstborns who left home entered college. Given that many first-year college students live semi-autonomously (i.e., in dorms with limited supervision, but still rely on parents for financial support) our findings may not generalize to youth who leave home and live independently. As such, future work should examine whether reasons for leaving home (e.g., to enter the workforce, the military, or college) moderate the linkages between leaving home and youth's family relationship qualities. For example, expectations regarding the frequency and quality of communication and interactions may differ depending upon the reason for leaving home (e.g., transition to college versus military service) and thus be related to different sets of antecedents and consequences (e.g., Mayseless, 2004).

Third, because of our design, siblings in our sample were relatively close in age. Although the age spacing between siblings in our sample is consistent with the US modal age spacing between siblings of 2 to 3 years (Eggebeen, 1992), it is important that future work examine

whether family dynamics are timed to older children's transitions when siblings are further apart in age. Fourth, although we used both parent and child reports to measure parent-offspring relationship qualities, our measures indexing positive relationship dynamics were not the same. Therefore, as mentioned earlier, differences in the observed trajectories may reflect the fact that we measured somewhat different constructs with parent and youth reports. Finally, a potential measurement confound exists for firstborns who left their parents' home. Because youth who left home were not available during home interviews, they reported on their family relationship qualities via mailed interviews. It is possible that these participants responded differently (on mailed surveys) than firstborns who still resided in their parents' homes (i.e., home interviews) because of differences in data collection approaches.

Despite these limitations, our findings add to a growing body of work examining how family relationships changes as youth approach and enter adulthood. Consistent with a systems perspective, our findings also illustrate that the changes associated with adolescent transitions reverberate throughout the family and have implications for other family relationships. Family systems principles have been difficult to operationalize, but studies that pay equal attention to the family experiences of two siblings offer one avenue through which systems concepts can be examined.

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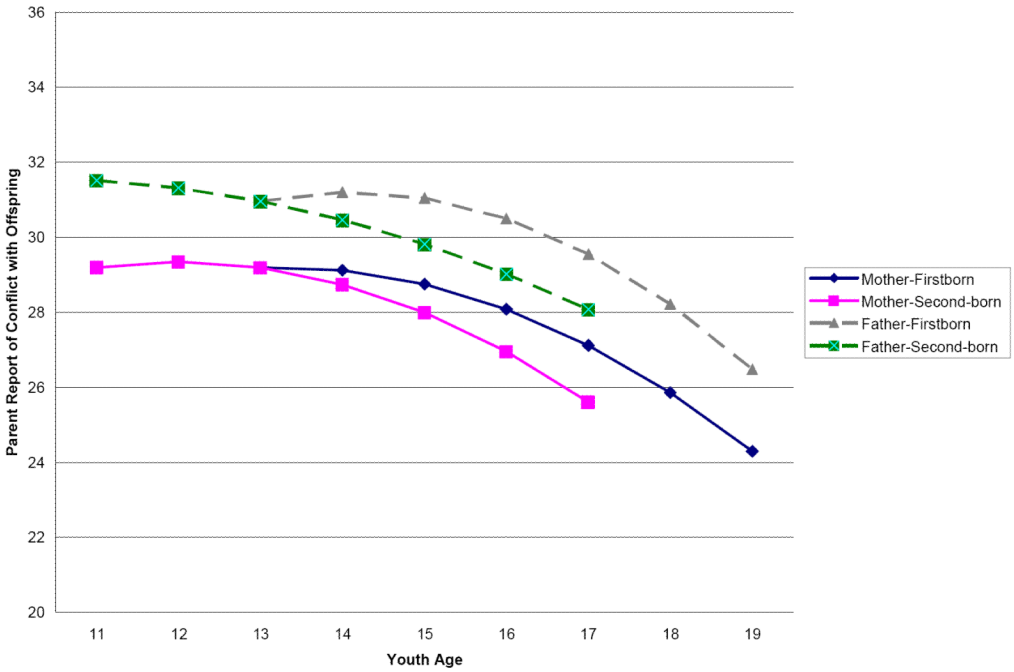

Figure 1.
Estimated trajectories of mothers' and fathers' reports of conflict with first- and second-born offspring over time.

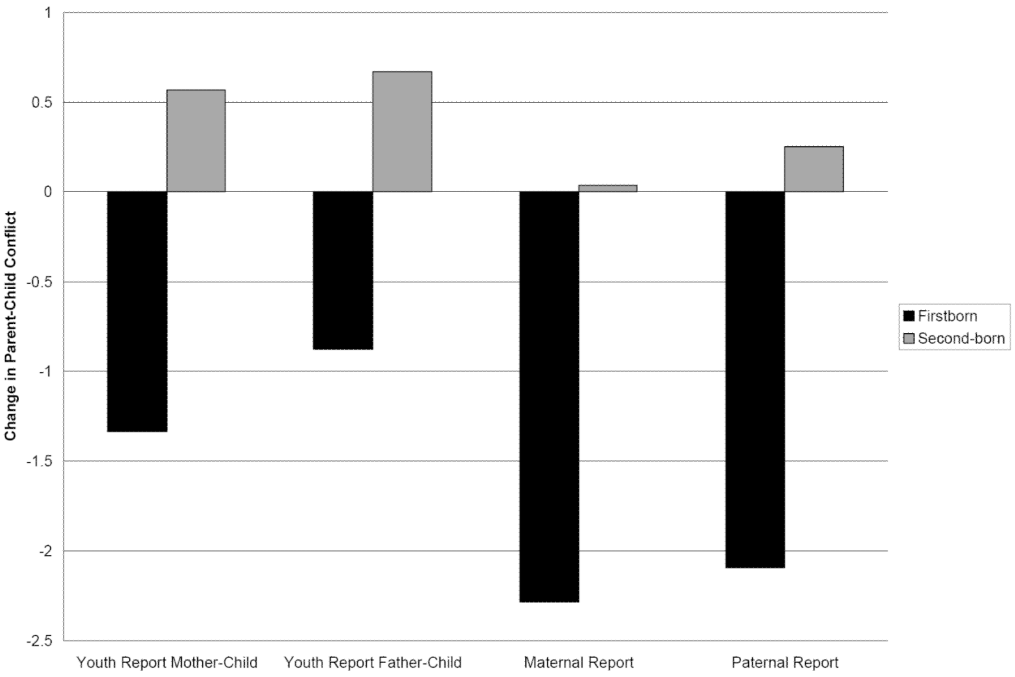

Figure 2.
Estimated changes in parent-child conflict following firstborns' leaving home as function of reporter.

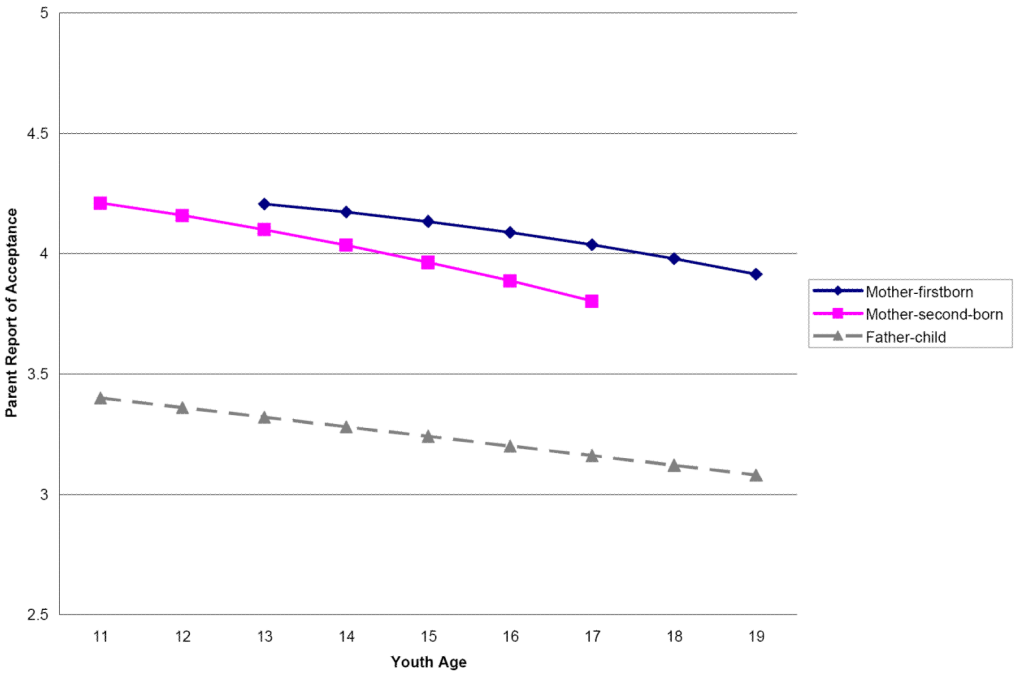

Figure 3.
Estimated trajectories of paternal and maternal acceptance over time as a function of birth order.

Table 1

Coefficients from Multi-Level Analyses of Parent and Youth Reports of Conflict From Early to Late Adolescence (N = 368 Individuals from 184 Families)

	Mother-Child				Father-Child			
	Parent Report		Youth Report		Parent Report		Youth Report	
Fixed Effect	***γ***	**(*SE*)**	***γ***	**(*SE*)**	***γ***	**(*SE*)**	***γ***	**(*SE*)**
Initial Status (Age 13)								
Intercept	29.19***	(2.60)	31.87***	(2.17)	30.96***	(2.55)	31.04***	(2.23)
Mother Education	-0.24	(0.20)	-0.45**	(0.17)	-0.40*	(0.20)	-0.56**	(0.17)
Father Education	0.09	(0.18)	0.11	(0.15)	0.05	(0.18)	0.08	(0.15)
Birth Order (BO)	0.36	(0.50)	-2.71***	(0.56)	0.45	(0.47)	-2.32***	(0.57)
Gender (G)	0.16	(0.58)	0.23	(0.60)	1.39**	(0.54)	0.71	(0.62)
BO X G	-0.06	(1.17)	1.29	(1.21)	0.76	(1.09)	0.93	(1.24)
Linear Effects								
Linear Change	-0.11	(0.09)	-0.64***	(0.11)	0.01	(0.09)	-0.59***	(0.11)
BO X Linear	-0.38*	(0.18)	-0.17	(0.22)	-0.86***	(0.18)	-0.46*	(0.22)
G X Linear	-0.28	(0.18)	-0.12	(0.23)	0.20	(0.18)	0.01	(0.22)
BO X G X Linear	0.21	(0.37)	0.25	(0.45)	-0.16	(0.36)	0.46	(0.44)
Quadratic Effects								
Quadratic Change	-0.15***	(0.02)	-0.09***	(0.02)	-0.14***	(0.02)	-0.08***	(0.02)
BO X Quadratic	0.01	(0.04)	0.09*	(0.05)	0.12**	(0.04)	0.13**	(0.05)
G X Quadratic	0.04	(0.04)	-0.01	(0.05)	-0.07	(0.04)	-0.01	(0.05)
B X G X Quadratic	-0.08	(0.08)	-0.07	(0.09)	0.01	(0.08)	-0.12	(0.09)
Leave Home Effects								
Leaving Home (LH)	-1.12***	(0.26)	-0.38	(0.31)	-0.92***	(0.25)	-0.10	(0.30)
BO X LH	2.32***	(0.50)	1.90**	(0.61)	2.35***	(0.49)	1.54*	(0.60)
G X LH	0.10	(0.50)	-0.09	(0.61)	-0.49	(0.49)	0.05	(0.60)
BO X G X LH	1.50	(1.01)	-0.34	(1.22)	-0.82	(0.99)	-0.50	(1.21)

Note: Convergence criterion = 0.001. Birth order was effect coded as -.5 for firstborns and .5 for second-borns. Gender was effect coded as - .5 for females and .5 for males.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Coefficients from Multi-Level Analyses of Parent and Youth Reports of Acceptance/Intimacy From Early to Late Adolescence (N = 368 Individuals from 184 Families)

	Mother-Child				Father-Child			
	Parent Report		Youth Report		Parent Report		Youth Report	
Fixed Effect	***γ***	**(*SE*)**	***γ***	**(*SE*)**	***γ***	**(*SE*)**	***γ***	**(*SE*)**
Initial Status (Age 13)								
Intercept	4.15***	(0.22)	3.41***	(0.23)	3.40***	(0.23)	3.28***	(0.26)
Mother Education	0.02	(0.02)	0.01	(0.02)	0.02	(0.02)	-0.02	(0.02)
Father Education	-0.02	(0.02)	0.01	(0.02)	0.01	(0.02)	0.03	(0.02)
Birth Order (BO)	-0.11***	(0.02)	-0.09	(0.05)	-0.03	(0.03)	-0.09	(0.05)
Gender (G)	-0.01	(0.03)	-0.08	(0.06)	0.00	(0.03)	0.20***	(0.06)
BO X G	0.06	(0.06)	0.01	(0.12)	-0.01	(0.06)	-0.08	(0.12)
Linear Effects								
Linear Change	-0.05***	(0.01)	-0.09***	(0.01)	-0.04***	(0.01)	-0.12***	(0.01)
BO X Linear	-0.03**	(0.01)	0.07***	(0.02)	-0.02	(0.01)	0.10***	(0.02)
G X Linear	-0.02	(0.01)	-0.01	(0.02)	0.01	(0.01)	0.03	(0.02)
BO X G X Linear	0.02	(0.02)	0.06	(0.04)	-0.01	(0.02)	0.00	(0.04)
Quadratic Effects								
Quadratic Change	-0.003*	(0.001)	0.01***	(0.002)	0.00	(0.00)	0.02***	(0.002)
BO X Quadratic	0.004	(0.002)	-0.01**	(0.003)	0.00	(0.00)	-0.02***	(0.004)
G X Quadratic	0.002	(0.002)	-0.00	(0.00)	0.00	(0.00)	-0.01*	(0.004)
B X G X Quadratic	-0.007	(0.005)	-0.01	(0.01)	0.00	(0.00)	0.00	(0.00)
Leave Home Effects								
Leaving Home (LH)	0.09***	(0.02)	0.06*	(0.03)	0.01	(0.01)	0.04	(0.03)
BO X LH	0.02	(0.03)	-0.12*	(0.05)	-0.04	(0.03)	-0.06	(0.05)
G X LH	-0.08**	(0.03)	-0.04	(0.05)	-0.03	(0.03)	0.00	(0.05)
BO X G X LH	0.01	(0.06)	-0.01	(0.01)	0.01	(0.06)	-0.13	(0.10)

Note: Convergence criterion = 0.001. Birth order was effect coded as -.5 for firstborns and .5 for second-borns. Gender was effect coded as - .5 for females and .5 for males.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Coefficients (and S.E.) from Multi-Level Analyses of Youth Reports of Sibling Negativity and Intimacy From Early to Late Adolescence (N = 368 From 184 Families)

	Sibling Negativity		Sibling Intimacy	
Fixed Effect	***γ***	**(*SE*)**	***γ***	**(*SE*)**
Initial Status (Age 13)				
Intercept	15.16***	(1.11)	21.06***	(2.06)
Mother Education	0.05	(0.09)	-0.15	(0.16)
Father Education	-0.14	(0.08)	0.30*	(0.15)
Birth Order (BO)	-0.07	(0.25)	1.23**	(0.39)
Gender (G)	-0.10	(0.28)	-1.57**	(0.45)
BO X G	0.11	(0.56)	-1.24	(0.91)
Linear Effects				
Linear Change	-0.15**	(0.06)	0.09	(0.08)
BO X Linear	-0.58***	(0.11)	0.64***	(0.17)
G X Linear	-0.07	(0.11)	-0.15	(0.16)
BO X G X Linear	0.31	(0.22)	0.16	(0.33)
Quadratic Effects				
Quadratic Change	-0.10***	(0.01)	0.10***	(0.02)
BO X Quadratic	0.03	(0.02)	-0.05	(0.03)
G X Quadratic	0.04	(0.02)	0.03	(0.03)
B X G X Quadratic	-0.04	(0.05)	0.06	(0.06)
Leave Home Effects				
Leaving Home (LH)	-0.55***	(0.15)	0.45*	(0.22)
BO X LH	0.05	(0.29)	-0.20	(0.44)
G X LH	-0.66*	(0.30)	0.48	(0.45)
BO X G X LH	0.43	(0.60)	-0.65	(0.90)

Note: Convergence criterion = 0.001. Birth order was effect coded as -.5 for firstborns and .5 for second-borns. Gender was effect coded as - .5 for females and .5 for males.

* $p < .05$.

** $p < .01$.

*** $p < .001$.