The Association Between Maternal Relationship Transitions and Child Behavioral Outcomes: An Examination of Selection Effects and the Mediating Impact of Parenting

Dissertation

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Abstract

Families in the United States are becoming increasingly diverse and complex, with the potential to have significant impacts on children. One of the most notable changes in recent decades has been the dramatic increase in cohabitation rates. However, the existing research on the effects of transitions into and out of cohabitation on child outcomes is limited. Most of the existing research is cross-sectional (Nelson, Clark, and Acs 2001; Brown 2004), focuses on the number of maternal relationship transitions experienced by children, rather than the type (Hao and Xie 2007; Manning and Lamb 2003), or uses retrospective data on the amount of time children spend in various family structures (Dunifon and Kowaleski-Jones 2002; Fomby and Cherlin 2007; Hao and Xie 2002). The exception is Brown (2006), who compares the effects of various maternal relationship transition types. However, Brown's research is limited to adolescents and her data do not allow for race-specific analyses.

I extend this research using data from the 1986-2004 waves of the National Longitudinal Survey of Youth 1979 and the Children of the NLSY79. I compare the effects of experiencing various maternal union entrances and exits and stable maternal unions on child behavior problems, as measured by the Behavior Problems Index. The data allow for an examination of the effects of transitions experienced by children

between the ages of 4-5 and 6-7, 6-7 and 8-9, 8-9 and 10-11, and 10-11 and 12-13. In addition to age-specific analyses, I also include interactions by child sex and race/ethnicity and consider the role played by the relatedness of the mother's spouse or partner to the child. I consider the possibility that there is a spurious association between maternal relationships and child behavior, such that children with behavior problems may exhibit such problems before any maternal relationship transition occurs. Finally, I examine the mediating role played by parenting after the transition, as measured by the Home Observation Measurement of the Environment-Short Form (HOME-SF).

I find few significant effects associated with maternal relationship entrance. The most consistent effect for relationship exit is seen in the detrimental impact of divorce on child behavior problems relative to remaining in a stable married mother family. For younger children, much of this effect operates through behavior problems that existed prior to the divorce. Divorce is particularly harmful for pre-adolescents aged 10-11 and has a significant impact even when controlling for background characteristics and post-divorce parenting. The most consistent effects are seen in the effects of stable maternal union types. Remaining in a stable single mother or cohabiting mother family compared to remaining in a stable married mother family is associated with a higher level of behavior problems, though there is no significant difference in the effect of remaining in a stable single mother family relative to remaining in a cohabiting mother family. I find few significant effects by child sex or race/ethnicity, though there is some evidence that non-traditional family types are more detrimental for non-Black, non-Hispanic children than for their Black or Hispanic counterparts.

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Fields of Study

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Chapter 1: Introduction

Bianchi and Casper (2000) and Seltzer (2000) outline the significant changes that have occurred in the American family in the last 50 years. Increases in divorce and non-marital fertility have altered the family context for children, and these issues have been the subject of numerous public and academic debates. However, the role of cohabitation, until recently, largely has been ignored. The likelihood of cohabitation for males and females in the United States has increased steadily in the past three decades. This trend was led by divorced individuals, many of whom chose to cohabit prior to or instead of remarrying. Using data from the first wave of the National Survey of Families and Households, Bumpass and Sweet (1989) show that one-third of all remarriages in the 1970s and two-thirds of those in the 1980s were preceded by cohabitation. In addition to changing the context of remarriage, cohabitation also has compensated for increases in the age at first marriage (Bumpass, Sweet, and Cherlin 1991). Although the percentage of Americans married by the age of twenty declined 49 percent between 1970 and 1985, the percentage ever in a co-residential union decreased by only 20 percent (Bumpass, Sweet, and Cherlin 1991).

Given these changes, children are increasingly likely to spend at least some time in a cohabiting union. However, our knowledge of the effect of these informal unions on

children is limited. Most of the research on parental relationship types and transitions and child outcomes focuses on the effects of divorce, and, to a lesser extent, remarriage (Amato 2000; Chase-Lansdale, Cherlin, and Kiernan 1995; Cherlin, Kiernan, and Chase-Lansdale 1995; Cherlin, Chase-Lansdale, and McRae 1998; Coleman, Ganong, and Fine 2000). From a life course perspective, we would expect that parental life changes have significant impacts on the lives of children. However, it is not clear how the association between maternal relationships and child behavioral outcomes operates. One perspective is a causal association between maternal relationship transitions and child outcomes. That is, changes in family structure directly affect child outcomes through factors such as economic well-being and parenting style. A potential framework for this perspective is provided by Amato (1993), who suggests that parental divorce has the potential to affect children through five pathways: parental absence, the well-being of the custodial parent, parental conflict, economic difficulties, and stressful life changes, such as a residential move or a change in school. This framework can be extended to other maternal relationship transition types, including transitions into and out of cohabiting unions and maternal remarriage. This paper will focus on the mediating effects of maternal parenting style, as measured by the Home Observation of the Environment-Short Form (HOME) inventory.

A competing perspective argues that any association between maternal relationships and child outcomes is spurious. In other words, there is selectivity in terms of the types of unions formed by parents, and the pre-existing characteristics of parents and children that affect union transitions also affect child outcomes. For example,

individuals who reside in cohabiting unions are likely to be less educated, have lower incomes, and more likely to be minorities than their counterparts in marriages (Brown 2000; Bumpass and Sweet 1989; Bumpass and Lu 2000; Fields 2003; Lichter, Qian, and Mellott 2006). It is possible that the same characteristics that influence union type also influence child behavior. Additionally, several studies have found that the problems experienced by children subsequent to parental relationship transitions actually existed *prior* to the transition (Block, Block, and Gjerde 1986; Baydar 1988; Doherty and Needle 1991).

Few studies have focused specifically on the effects of transitions into and out of cohabiting unions on child outcomes. Some of the earliest studies on the impact of maternal cohabitation on children were cross-sectional, focusing on household structure and outcomes at a single point in time (Nelson, Clark, and Acs 2001; Brown 2004). The longitudinal studies that do exist focus primarily on early family structure (Manning and Lamb 2003), relationship instability as measured by the number of relationships reported by mothers, or the amount of time spent by children in various family structures (Dunifon and Kowaleski-Jones 2002; Fomby and Cherlin 2007; Hao and Xie 2002) on subsequent child outcomes. The exception is Brown (2006) who looks at the effects of maternal relationship transition types on child academic and behavior outcomes, accounting for the level of these outcomes that occurred prior to any relationship transition. However, Brown focuses only on adolescents and does not distinguish effects by child race or ethnicity.

I extend previous research using data from the 1986-2004 waves of the National Longitudinal Survey of Youth 1979 (NLSY79) and the NLSY79 Child Supplement. I use these longitudinal data to analyze the impact of various maternal relationship transitions and stable maternal relationship types on child behavior problems and to explore further the issue of causation versus selection. Specifically, I first look at the effects of maternal relationship transition types and stable maternal relationship types on child behavior problems at Time 2 with no control variables. I then control for Time 1 behavior problems in an effort to account for unmeasured characteristics that influence child behavior prior to any maternal relationship transition. Third, I control for maternal and child background characteristics that may be associated with both child behavior and maternal relationship transitions. If any significant associations between maternal relationships and child behavior problems are reduced to non-significance with the introduction of variables measured prior to any transition, this suggests that selection is occurring. The final model controls for parenting, as measured by the HOME score, at Time 2. Controlling for a measure of parenting after any transition occurs allows me to examine the possibility that there is a causal association between maternal relationships and child outcomes that operates through parenting. The data allow me to examine the impact of transitions that occur at four time points, between the ages of 4-5 and 6-7, 6-7 and 8-9, 8-9 and 10-11, and 10-11 and 12-13. Much of the previous research has focused on the impacts of cohabitation among adolescents only. Further, I examine the effects of interaction terms that include child sex and race and ethnicity. In cases where interaction terms are significant, I run models separately by sex or race and ethnicity. Finally, I

explore the influence of the relationship between the mother's spouse or partner and the child. That is, do any associations between maternal relationships and child outcomes differ when the spouse or partner is the child's father versus households where the spouse or partner is the child's stepfather?

I outline the previous research on this topic in Chapter 2, along with a detailed description of recent cohabitation trends and theoretical perspectives and a list of my research questions and hypotheses. I introduce my data, measures, and methodology in Chapter 3. Chapter 4 details results by child age, presenting results showing the effect of maternal relationship entrances, maternal relationship exits, and stable maternal relationships at each of the four age points. Chapter 5 breaks down results by child sex or race and ethnicity. Results showing models by the relatedness of the spouse or partner to the child are shown in Chapter 6. Finally, I discuss the implications of these results for my hypotheses in Chapter 7.

Chapter 2: Review of the Literature

Trends in Cohabitation

The percentage of households in the United States consisting of unmarried partners increased from 2.9 percent in 1996 to 4.2 percent by 2003 (Fields 2003). Given the unstable nature of such relationships (Lichter et al. 2006; Raley and Wildsmith 2004), the proportion of households containing cohabiting partners at any given time is relatively small. However, a large percentage of Americans experience cohabitation at some point in their lives. By the mid-1990s, almost half of all women in their late twenties had cohabited, and 56 percent of first marriages were preceded by cohabitation (Bumpass and Lu 2000).

These increases in cohabitation were greatest among less educated Americans (Bumpass and Sweet 1989; Bumpass and Lu 2000). In comparing the percentage of women ever reporting a cohabitation between the 1987-1988 National Survey of Families and Households and the 1995 National Survey of Family Growth, Bumpass and Lu (2000) find the greatest increase among high school graduates and the smallest increase among women with at least a college degree. Fields (2003) reports that 63 percent of female and 70 percent of male cohabitors with children in their households have a high school diploma or less, compared to 40 percent of their married counterparts. While married and cohabiting women with children do not differ significantly in their likelihood

of employment, 90 percent of married fathers are employed, compared to 81 percent of cohabiting men (Fields 2003).

Women in cohabiting couples are more likely than married women to have higher levels of education than their partners; 29 percent of cohabiting women report higher levels of education than their partners, compared to 22 percent of married women (Fields 2003). Accordingly, women in cohabiting households are more likely to have higher incomes than their partners (Brines and Joyner 1999). However, Brines and Joyner (1999) find that high-earning cohabiting couples are more likely to dissolve their relationships than are married couples with high joint incomes, possibly because having such an income allows one to live more comfortably on their own.

Cohabitors report lower levels of happiness in their relationships (Nock 1995), although Brown and Booth (1996) find that the subset of cohabitors with plans to marry their partners do not differ significantly from those who are married with regard to their relationship quality. Nock (1995) argues that cohabitors have lower levels of commitment to their relationships; cohabiting individuals in the 1987-88 National Survey of Families and Households report fewer potential negative consequences to ending their relationships than do those who are married. Accordingly, cohabitation tends to be a relatively short-lived status. Bumpass and Lu (2000), using data from the 1995 National Survey of Family Growth, and Lichter, et al. (2006), using data from the 1979-2000 waves of the National Longitudinal Survey of Youth, find that approximately one-half of all cohabitations last one year or less and fewer than one in ten last five years or longer. Approximately one-quarter of cohabitors marry within the first year of their coresidential

relationship, while the same percentage dissolve their relationships (Lichter et al. 2006). Ultimately, cohabitors are slightly more likely to dissolve their relationships than to marry; 46 percent of cohabitations dissolve within five years, while 44 percent of cohabitors marry within this time frame (Lichter et al. 2006). Bumpass and Lu (2000) suggest that as cohabitations become more commonly accepted, they may become more unstable because they include a greater proportion of individuals with low levels of commitment to their relationship. Some evidence of this is seen in the National Longitudinal Survey of Youth. Cohabiting relationships that began in the 1990-2000 time period are significantly more likely to ultimately dissolve than are those that began in the 1979-1984 time period (Lichter et al. 2006).

A number of demographic characteristics influence the instability of cohabiting unions. Using data from both waves of the National Survey of Families and Households, Brown (2000) finds that the earnings of the male partner have a significant positive association with the transition from cohabitation to marriage, while female earnings have no significant relationship to marriage or dissolution of the relationship. Lichter et al. (2006) find similar non-significant effects of female employment and education, though unemployed women are more likely to remain in cohabiting relationships than to make the transition to marriage. There are also significant racial differences in relationship transitions. Although White and Black respondents in Brown's (2000) sample report similar levels of plans to marry their partners, Whites are significantly more likely than Blacks to formalize their unions. While 60 percent of White cohabitors with plans to marry their partners do so, fewer than 20 percent of their African-American counterparts

transition to marriage (Brown 2000). Almost half of these cohabiting African American couples remain in stable cohabitations, compared to 15 percent of white couples (Brown 2000). No other racial or ethnic groups are included in Brown's study, but Lichter et al. (2006) find that both African-American and Hispanic cohabiting women are significantly less likely than their white counterparts to transition to marriage. They find no significant racial or ethnic differences in the likelihood of relationship dissolution.

Trends in Children's Experiences of Cohabitation and Relationship Transitions

Given increases in cohabitation rates in the United States, children are increasingly likely to spend some time with a cohabiting parent. Just over 40 percent of cohabiting households in the United States in 2003 include at least one child under the age of 18 (Fields 2003). A significant proportion of children born to "single" mothers are born into such households; this percentage increased from 29 percent in the period from 1980-1984 to 39 percent in the period from 1990-1994 (Bumpass and Lu 2000). By 2001, more than half of all nonmarital births occurred within cohabiting unions (Mincieli, Manlove, McGarrett, Moore, and Ryan 2007), and by 2004, birth rates of never-married cohabiting women did not differ significantly from those of married women (Dye 2005).

Even children who are not born in the context of parental cohabitation may experience such unions at some point during childhood. Using data from the National Longitudinal Survey of Youth 1979, Graefe and Lichter (1999) show that 25 percent of all children born between 1980 and 1992 will spend some time in a cohabiting household. Data from the early 1990s indicate that approximately 40 percent of all children and 75

percent of children born to unmarried mothers will spend some time in a cohabiting household before the age of 16 (Bumpass and Lu 2000).

Children born to single and cohabiting mothers are likely to experience high levels of family instability, compared to those born to married mothers (Bumpass and Lu 2000; Manning, Smock, and Majumdar 2004; Osborne and McLanahan 2007). While children born to married parents spend 84 percent of their childhoods in married couple families, those born to single and cohabiting mothers spend only about half their childhoods in married couple households and half their childhoods in single parent and cohabiting families (Bumpass and Lu 2000). Fifteen percent of children born to cohabiting parents will experience the dissolution of their parents' relationship during the first year of life, compared to 4 percent of children born to married parents (Manning et al. 2004). Ninety percent of children in cohabiting households will experience some type of family transition by the fifth year of the cohabiting union, though Graefe and Lichter (1999) categorize the transition from cohabitation to marriage as instability. While the formalization of cohabiting unions through marriage increases the stability of unions for white children, the same is not true for African-American or Hispanic children. Minority children whose cohabiting parents marry do not experience the same levels of family stability as those born to parents who are married at the time of their child's birth (Manning et al. 2004).

Several demographic factors are associated with the types of family transitions experienced by children. Cohabiting families with higher numbers of children are more likely to make the transition to single-parent families, while those children whose father

is their mother's cohabiting partner are significantly more likely to experience a transition to a married-couple family than to remain in a cohabiting household or experience dissolution of the relationship. African-American and Hispanic children are less likely than others to experience a transition from a cohabiting household to a marriage, and children with younger mothers are more likely to make transitions from cohabitation both to marriage and to singlehood. For children in single-parent households, a number of factors, including child age, being non-white, number of children in the home, mother's age, mother's education, family income, and receipt of welfare, are negatively related to the transition to cohabitation, while living in an area with a high level of unemployment is positively associated with the transition to cohabitation (Graefe and Lichter 1999)

Explanations for the Influence of Parental Relationship Transitions on Children

One would expect that increases in cohabitation and relationship instability would have significant effects on children. According to the life course perspective, individual lives are embedded in the context of the family. These "interlocking trajectories" suggest that changes in the lives of parents, including relationship transitions, have consequences for the lives of their children (Elder 1985; Elder, Johnson, and Crosnoe 2003). One example is Coleman's (1988) view that social capital is transmitted via relationships among individuals. He argues that parental human capital, such as education, is passed on to children through interaction and relationships. This social capital requires both parental presence in the family and parental attention to children. If parental relationships are disrupted, this may have negative consequences for the fostering of

human capital in children. Coleman suggests that single parents may lack social capital by having a limited amount of time available to interact with children (Coleman 1988).

There are two primary explanations for the typically negative association between parental relationship transitions and child outcomes, a causal model that suggests that parental relationship transitions, and associated stressors, directly impact child outcomes and a selection model, which argues that the association between parental relationship transitions and child outcomes is not causal but that both are affected by other factors, such as maternal education. Parental relationship transitions may have a causal impact on children by increasing instability and stress in their households. Pearlin, Menaghan, Lieberman, and Mullan (1981) argue that stress is a process by which life events can increase vulnerability. In regard to relationship transitions specifically, the divorce-stress-adjustment perspective (Amato 2000) or stress model (Coleman et al. 2000) suggests that relationship transitions, divorce and remarriage in this case, lead to a number of additional stressful events that may have negative consequences for adults and children alike. The stressful events experienced by adults include loss of emotional support, conflict with their former spouse, and declines in economic well-being. These stresses may affect parents' relationships with their children. Changes in parenting behavior, along with changes in household income and contact with the non-custodial parent, may have negative consequences for children. Rodgers and Rose (2002) find that parental support and monitoring are significantly associated with children's internalizing and externalizing behavior problems, even after controlling for demographic background characteristics.

Previous research indicates that parenting has a significant association with child and adolescent behavioral problems (Brown 2004; Carlson and Corcoran 2001; Manning and Lamb 2003) and that maternal relationship type is associated with parenting style. For example, using data from the 1990 Children of the National Longitudinal Survey of Youth (NLSY) Menaghan, Kowaleski-Jones, and Mott (1997) find that children residing in households with their mother and her cohabiting partner receive lower levels of cognitive stimulation and parental structuring and involvement than those in two biological parent married families or married stepfamilies.

Maternal relationship transitions may have positive or negative effects on parenting. On the one hand, a new spouse or partner may provide additional supervision for the child and offer emotional and financial support to the mother. However, a new spouse or partner may reduce the amount of time that a mother spends with her child or contribute to conflict in the household. The departure of a spouse or partner may increase economic problems and other stressors, while also decreasing conflict within the home. Using data from the Fragile Families and Child Wellbeing Study, Cooper, McLanahan, Meadows, and Brooks-Gunn (2009) find that maternal relationship transitions have significant impacts on the parenting stress reported by mothers. Mothers who enter a coresidential relationship with their child's biological father report decreased levels of parenting stress, while those who divorce or end a cohabitation with their child's biological father and those who enter a relationship with a man who is not the father of their child report greater parenting stress.

Feelings of parenting stress may translate into maternal behavior. Thomson, Mosley, Hanson, and McLanahan (2001) analyze data from the 1987-88 and 1992-94 waves of the National Survey of Families and Households to examine the relationship between entrance into a new relationship and changes in three dimensions of parenting: supervision, harsh discipline, and overall relationship quality. They find no differences between transitions to cohabitation and transitions to marriage. Mothers whose new partnerships remain intact at the second wave report lower levels of harsh discipline than those who form new relationships that have dissolved by the second interview. This latter group is similar to those who remain single throughout the interval between interview waves. Children report better relationships with their mothers if their mothers remain in new relationships, compared to remaining single or entering and then exiting a new relationship; however, the reports of mothers in these three groups do not differ (Thomson et al. 2001).

The competing argument is a selection perspective. According to this view, while parental relationship transitions and child outcomes may be associated, this association is not necessarily causal. Rather, both relationship instability and child outcomes may be caused by other antecedent factors, such as parental cognitive ability or personality. These characteristics affect the types of relationships that parents form and the stability of these relationships. These same parental characteristics have implications for child behavior. Thus, rather than a direct causal effect of relationship transitions on child outcomes, there are outside factors that affect both (Fomby and Cherlin 2007).

Prior research indicates that selection occurs in the type of transition made after a marital disruption. Those who transition to cohabitation, rather than remarriage, report higher levels of poverty and AFDC receipt before their initial divorce or separation (Morrison and Ritualo 2000. Using cross-sectional data from the 1999 National Survey of America's Families, Manning and Brown (2006) find that children living with married stepparents, compared to those living in cohabiting stepfamilies, experience lower levels of poverty and food and housing insecurity.

It is also possible that child behavior has an impact on maternal relationship transitions or that there is a reciprocal influence between these two outcomes. Jenkins, Simpson, Dunn, Rasbash, and O'Connor (2005) find that there is a reciprocal relationship between marital conflict and child behavior problems. Further, Cherlin et al. (1998) conclude that, although children of divorced parents may have higher levels of behavior problems than their counterparts in stable married families, these problems may have been present prior to the divorce. Therefore, any association between maternal relationship transitions and child behavior is not causal in nature. This suggests that, in considering the effects of parental relationship transitions on children, it is beneficial to consider the outcome both before and after any transition occurs.

Previous Research on the Effects of Cohabitation on Child Well-Being

In spite of increases in cohabitation rates in the United States, until recently there has been little work on the consequences of this specific family structure for children and adolescents. A large body of literature examines the association between child well-being and parental divorce, remarriage, or single parenthood, but it is not clear whether

cohabitation transitions have similar consequences for youth. The largest increases in cohabitation have occurred to the most vulnerable segments of the population, those with low levels of education and income and those who have already experienced marital disruption. Such characteristics are detrimental for children and adolescents. The use of longitudinal data is necessary to examine the association between cohabitation transitions and child well-being. This would address the issue of causation, that is, the direct effect of cohabitation on children, versus selection, or the spurious relationship between cohabitation and child outcomes.

Most previous studies use cross-sectional data to compare the outcomes of children or adolescents in cohabiting households to those in other family structure types, making it difficult to distinguish between causation and selection. For example, Nelson et al. (2001) use data from the 1997 National Survey of America's Families to generate predicted probabilities of school engagement and emotional and behavioral problems among twelve- to seventeen-year-old adolescents. They find that, relative to their counterparts in single mother families, White and Hispanic adolescents in cohabiting stepfamilies exhibit higher levels of behavior problems. For Black teenagers there is not a similar detrimental impact of cohabitation. White and Hispanic children in married stepfamilies do not differ significantly from their counterparts in single mother families, while there is a protective effect of married stepfamilies for Black children. In all cases, children in married biological parent families fare better than those in single mother and married and cohabiting stepfamilies. While these multivariate models control for child sex, the most knowledgeable adult's level of education, and the family's poverty level,

these results are not presented and the authors make no claims regarding causality or selection.

Brown (2004) also uses data from the 1999 National Survey of America's Families to compare behavioral and emotional outcomes and school engagement among children in various family structures. Brown finds that, relative to children in married biological parent families, those in both biological parent and stepparent cohabiting families show higher levels of behavioral and emotional problems. The difference in levels of behavioral and emotional problems between children aged 6-11 in married biological parent families and those in cohabiting families is reduced to non-significance when economic characteristics and parental well-being are controlled. However, the significant difference persists for children aged 12-17 in the full model. Brown finds no significant difference between children in the two types of cohabiting families, children in married versus cohabiting stepfamilies, or children in cohabiting families and single mother families.

The work of Manning and Lamb (2003), Dunifon and Kowaleski-Jones (2002), Hao and Xie (2002), and Fomby and Cherlin (2007) extend these cross-sectional analyses by including variables that capture family structure history. Manning and Lamb (2003) include the number of mother's previous marriage-like relationships and the duration of the current relationship as control variables in their examination of the influence of current family structure on academic and behavioral outcomes of teenagers in the first wave of the 1995 National Longitudinal Survey of Adolescent Health. They find that, compared to children in married stepparent families, adolescents in cohabiting

stepfamilies are more likely to be suspended or expelled from school; however, this effect is reduced to non-significance in multivariate models where factors such as maternal education, child sex, income, parenting, and number of previous maternal relationships are controlled. They also find that children in married and cohabiting stepfamilies and single mother families share a similar likelihood of being expelled from school. Adolescents in married stepfamilies experience lower overall levels of delinquency than those in cohabiting stepfamilies. This result persists, but is reduced in strength, in the multivariate models. There is no significant difference in levels of delinquency between adolescents in single mother families and those in cohabiting stepfamilies. Manning and Lamb (2003) measure their outcomes at a single point in time, so it is not possible to account for the influence of behavioral problems prior to any family structure change. Like Nelson et al. (2001), Manning and Lamb (2003) utilize data from adolescents only. Given this, they are unable to examine children in biological parent cohabiting families, as few adolescents reside in such families.

Dunifon and Kowaleski-Jones (2002) use the 1998 and earlier survey rounds of the National Longitudinal Survey of Youth 1979 to construct a mother-child file. They consider whether the number of years that a child spends in each of three family types—married parent, single parent, and cohabiting parent—is associated with two outcomes: math achievement and delinquency between the ages of 10 and 14. The number of years spent in a married-couple family serves as the reference category, although the number of years spent in both married biological parent and married stepfamilies are combined. Dunifon and Kowaleski-Jones find no significant differences between these two groups.

The study finds no overall effects of years spent in a single mother or cohabiting family relative to time spent in a married parent family on delinquency. However, these overall results mask distinct racial patterns. For White children, the number of years spent in a single mother family is associated with increased delinquency. There is no comparable effect for Black children. However, there is a significant effect of time spent in a cohabiting parent family for Black children. Dunifon and Kowaleski-Jones also find sex differences in the effect of time spent in a single mother family. This is associated with higher levels of delinquency for boys but not for girls. There is no sex difference in the effect of time spent in a cohabiting household. None of these effects were mediated by the inclusion of parenting practices in the models, indicating that, if there is a causal association between time spent in various family structures and behavioral outcomes, this does not operate through parenting.

Hao and Xie (2002) use fixed-effects models to examine the association between family structure and misbehavior but construct a more complex set of family structure indicators, focusing not only on current family structure, but also duration of the current relationship, the amount of time spent in various family types, and the number of family transitions experienced by the child. They use data from the two waves (1987-1988 and 1992-1994) of the National Survey of Families and Households; their sample includes one biological focal child of the primary survey respondent. Unlike the previously discussed studies, Hao and Xie use data on the dependent variable from two survey waves, including previous misbehavior as a predictor of current misbehavior.

The fixed effects models account for time-invariant unobserved variables that may influence both family structure and child outcomes, so any significant effects are a result of a causal effect of family structure on child misbehavior. In these models, only children in cohabiting families differ from intact married families. There is no significant difference between children in intact married families, single mother families, and married stepfamilies in the fixed effects models when considering a simple snapshot of family structure. In terms of the time spent in each family type, the amount of time children spend in cohabiting or single mother families is positively associated with levels of misbehavior, though there is some protective effect of the duration of current family structure. When time spent in the current family type is controlled, children of single mothers have significantly higher levels of behavior problems than those in married intact families. However, not all two-parent families provide the same benefit. When length of the current relationship is considered, children in single mother families do not differ from those in married stepfamilies and have lower levels of misbehavior that those in cohabiting families. Finally, the number of family transitions experienced by the child is associated with higher levels of behavior problems, suggesting that these stressful events have cumulative effects on children (Hao and Xie 2002).

Similarly, Fomby and Cherlin (2007) examine the influence of maternal relationship histories on children's cognitive achievement and scores on the Behavior Problems Index (BPI) measured at a single wave of the National Longitudinal Survey of Youth 1979 (NLSY79) mother-child supplement. They examine the influence of current family type, the amount of time spent in a mother-only family between the ages of 0 and

4, and the number of family transitions experienced by the child. There are some limitations to the data used in the study. While the authors do consider transitions into and out of cohabiting relationships as well as marriages, at that time the NLSY79 did not allow them to determine if cohabiting partners were the same across survey waves. Therefore, while they could examine changes in cohabitation status (such as a breakup) across waves, if a mother was cohabiting at two waves with different partners, this would appear to be a stable cohabitation. This is a significant limitation. Fortunately, the NLSY79 now allows partners to be identified across survey waves, so the stable cohabitations or transitions from cohabitation to marriage that I identify in this study involve the same individuals over time. Further, the measure of the percentage of time spent in a mother-only family before the age of four categorizes cohabiting families as mother-only families. The current study separates the effects of these two family types.

Fomby and Cherlin's results show striking racial differences. For white children, family instability, as indicated by the number of relationship transitions reported by the mother, is positively associated with externalizing behavior problems; this relationship persists, but is reduced in strength, by the inclusion of variables measuring the mother's characteristics. This suggests that both causation and selection are operating for white children. In contrast, for African-Americans there is no significant association between maternal relationship transitions and behavior problems when other variables are controlled, indicating that the effects for these children are spurious (Fomby and Cherlin 2007).

These six studies (Brown 2004; Dunifon and Kowaleski-Jones 2002; Hao and Xie 2002; Manning and Lamb 2003; Nelson et al. 2001; Fomby and Cherlin 2007) on the association between cohabitation and child well-being have opened investigation of the effects of relationship histories, but none have considered the direct effects of relationship transitions, particularly exits from or entrances into cohabiting households. The exception is Brown (2006), who uses data from Waves 1 and 2 of the National Longitudinal Survey of Adolescent Health (Add Health) to examine the effects of parental relationship transitions on adolescent outcomes. Specifically, Brown examines the effects of experiencing a parental relationship transition versus remaining in a stable family structure and compares the transition from a one-parent to a two-parent family to the reverse, while also considering the parental union type. These union types include two biological parent married families, married stepfamilies, single mother families, and married stepfamilies. Few adolescents reside in two biological parent cohabiting families so they are not analyzed separately. Family structure measures are based upon adolescent reports (Brown 2006). However, it is important to note that Manning and Brown (2009) find dramatic differences in adolescent and mother reports of family structure in the National Longitudinal Study of Adolescent Health, particularly with regard to cohabiting stepfamilies. Of those mothers who report living with a cohabiting partner, only one-third of their adolescent children report living in a cohabiting stepfamily. Rather, most of these children report living in a single mother household. Relying on adolescent reports of family structure introduces a strong possibility that cohabiting households will be underreported.

Brown (2006) considers three adolescent outcomes: delinquency, depression, and school engagement. The delinquency measure is a count variable based upon adolescent reports of behaviors such as damaging property, shoplifting and stealing, and fighting. Depression is measured using a 19-item scale. School engagement is a 3-item scale indicating how often the adolescent skipped school, had difficulty paying attention, and had trouble finishing homework during the school year. Brown includes three adolescent characteristics as control variables: race-ethnicity, sex, and age. Household income and mother's education are measured at Wave 1. Parenting variables are measured at both time points, and Brown creates change scores for each of these measures. These variables include a 4-item scale measuring mother-adolescent relationship quality, a count variable measuring adolescent supervision, and a count variable measuring the adolescent's closeness to the biological father. All analyses also include controls for the adolescent's Time 1 well-being (Brown 2006).

Brown first considers the influence of any type of stable family on adolescent outcomes. Adolescents in stable single mother families have significantly higher levels of delinquency and depression, adolescents in stable married stepfamilies have significantly higher levels of delinquency, and adolescents in stable cohabiting stepfamilies have significantly higher levels of depression than their counterparts in stable two biological parent families, net of controls. Turning to the effects of relationship transitions, Brown finds that adolescents who experience a transition from a two-parent to a single parent family do not differ from those who remain in two biological parent families in terms of delinquency or depressive symptoms. However,

those who experience the transition from a single mother family to any type of two-parent family have significantly higher levels of problems. Experiencing maternal entrance into cohabitation in particular appears to be detrimental for adolescents. Although Brown makes comparisons between various family transition types relative to remaining in a two-biological-parent family, comparisons to other family types may be more instructive. For example, the formalization of a cohabiting stepfamily through marriage is not significantly associated with adolescent outcomes compared to remaining in a stable cohabiting stepfamily. In some cases, the break-up of a cohabiting union may have beneficial effects for children. Adolescents who transition from cohabiting stepfamilies to single mother families report higher levels of school engagement than those who remain in stable cohabiting stepfamilies or those who experience the transition to a married stepfamily (Brown 2006). Brown suggests that parental cohabitation has particularly detrimental effects on school engagement, a finding supported by the work of Raley, Frisco, and Wildsmith (2005) who find a detrimental effect of cohabitation on grades, college enrollment and odds of high school graduation.

Although Brown's work represents an advancement from previous studies, it has several limitations. First, the data analyzed in the study include only adolescents, even though Brown (2004) finds that the effects of parental cohabitation vary by child age. Further, few adolescents reside in two biological parent cohabiting families, limiting the opportunity to compare biological and non-biological cohabiting families. In addition, only one year separates the two waves of data, so this may not be enough time for any potential problems to appear. The Children of the NLSY79 data used in the current study

are collected biennially. If the detrimental effects of maternal relationship transitions accumulate over time, then this time between survey waves may allow time for these effects to appear (Kim, Conger, Elder, Lorenz 2003; Malone; Lansford, Castellino, Berlin, and Dodge 2004). Finally, Brown does not show results by child sex or race and ethnicity, though previous research has shown differences in the effects of various household types by group.

Summary

To summarize, the American family has experienced dramatic changes over the past several decades. One of the most significant changes is the increase in the number of cohabiting households, many of which contain children. Cohabitation is more likely to occur among less affluent Americans and tends to be an unstable relationship status. These characteristics may put children at risk, compared to residing with two married biological parents, remarried parents, or single parents. However, it is not clear if cohabitation transitions have a causal effect on child outcomes or if the association between cohabitation and child outcomes is due to selection effects. To date, research on the influence of cohabitation on children's well-being has been limited. Typical studies use cross-sectional data to compare the outcomes of children in cohabitating households versus other household types (Nelson et al. 2001; Brown 2004) or use data on previous maternal relationship changes as independent variables predicting outcomes at a single point in time (Manning and Lamb 2003; Dunifon and Kowaleski-Jones 2002; Fomby and Cherlin 2007). The exception is Brown (2006) who compares adolescent delinquency, depression, and school engagement across household change types at the second wave of

the National Longitudinal Survey of Adolescent Health, while controlling for Time 1 values on these variables. However, Brown's data is limited to adolescents and compares changes in outcomes over a brief period of one year.

My research will address these limitations through the use of data from the National Longitudinal Survey of Youth 1979 (NLSY79) and the 1986-2004 waves of the Children of the NLSY79. The use of longitudinal data will allow me to address the issue of causation versus selection in the association between maternal relationship transitions and child outcomes by controlling for levels of child well-being prior to maternal relationship transitions as well as controlling for child and maternal background characteristics. Second, these data allow me to determine whether the association between maternal relationship transitions on the child outcomes is mediated by parenting style. Such models allow me to differentiate selection effects, those resulting from factors such as prior behavior problems and child and maternal background characteristics, from a causal mediating effect of parenting after the transition occurs. The limited previous research in this area provides mixed support for these two perspectives. Third, I test whether these relationships are moderated by child age, sex, and race. Finally, I consider whether the association between maternal relationship transitions and child outcomes varies by the presence of the child's biological father.

Research Questions

I explore a series of research questions comparing the effects of both maternal relationship transitions and stable maternal relationship types on child behavior problems. First, I examine the effects of maternal transitions *into* various relationship types.

The entrance of a child's mother into a new co-residential union provides potential benefits for children. Presumably, the presence of a second adult in the household means that the child may receive more supervision. Further, entering a new relationship may improve the mother's well-being by providing companionship and increased economic resources. However, the mother's attention may be drawn away from the child and to her new spouse or partner. In this case, such transitions have the potential to be detrimental for children. Research in this area is limited, but existing studies indicate negative effects of both remarriage and entrance into cohabitation (Brown 2006; Coleman et al. 2000; Jeynes 2006) on child outcomes. In addition, Brown (2006) finds no significant effects of formalization of cohabitation through marriage on child outcomes. Although previous research does not provide guidance on the effects of maternal entrance into cohabitation versus the effects of maternal entrance into marriage, it is clear that background characteristics affect the type of unions that women choose to enter. Drawing on this research, I explore the following questions and propose the following hypotheses:

- Does the effect of maternal entrance into a new relationship (cohabitation or marriage) differ significantly from the effect of remaining in a stable single mother family on child behavior problems?

  Hypothesis 1: Experiencing the transition from a single mother family to a married or cohabitating mother family will be positively associated with child behavior problems. This result will persist net of controls for previous behavior problems and background characteristics but will be mediated by parenting after the transition occurs.

- Does the effect of maternal entrance into marriage differ significantly from the effect of maternal entrance into cohabitation?

  Hypothesis 2: Experiencing maternal entrance into marriage will be negatively associated with behavior problems relative to experiencing maternal entrance into cohabitation. This effect will be reduced to non-significance when maternal and child background characteristics are controlled.

- Does the effect of the formalization of maternal cohabitation through marriage differ significantly from the effect of remaining in a stable cohabiting mother household?

  Hypothesis 3: There will be no significant effect of experiencing maternal formalization of a cohabiting union relative to remaining in a stable cohabiting union on child behavior problems.

The next set of research questions explores the effects of maternal union *exits* on child behavioral outcomes. As with maternal union entrances, there are various ways in which maternal relationship exits may influence children. A multitude of studies find significant detrimental effects of divorce on children, but it is not clear if these effects are causal (Amato 2000) or if the behavior problems exhibited by children after divorce actually manifested prior to the dissolution of the relationship (Block et al. 1986; Baydar 1988; Cherlin et al. 1998; Doherty and Needle 1991; Jenkins et al. 2005). While divorce

may have a negative effect on children by increasing maternal stress and decreasing parental supervision, it may also benefit children by reducing the conflict in the household. However, Brown (2006) finds no negative effects of maternal union exit on children and suggests that dissolution of a maternal cohabitation may benefit adolescents by increasing their school engagement. I propose the following questions and hypotheses to examine the effects of maternal divorce and exit from cohabitation:

- Does the effect of maternal exit from cohabitation differ significantly from the effect of remaining in a stable cohabiting mother household?

  Hypothesis 4: There is no significant effect of experiencing the dissolution of a maternal cohabiting union relative to remaining in a stable cohabiting union on child behavior problems.

- Does the effect of maternal divorce differ significantly from the effect of remaining in a stable married mother household?

  Hypothesis 5: Maternal divorce is positively associated with child behavior problems relative to remaining in a stable married mother household. This effect is reduced in strength when previous behavior problems are controlled and is mediated by parenting after the divorce.

- Does the effect of maternal divorce differ significantly from the effect of maternal exit from cohabitation?

Hypothesis 6: Maternal divorce is associated with significantly higher levels of behavior problems compared to maternal exit from cohabitation. This effect is reduced in strength when previous behavior problems are controlled and is mediated by parenting after the divorce.

The final set of research questions examines the effects of remaining in stable household types. Manning and Lamb (2003) find few significant differences between children in single mother families and those in cohabiting families, though Nelson et al. (2001) find variation by race in this effect. Previous research shows consistent detrimental effects of remaining in stable single mother and stable cohabiting families relative to remaining in stable married parent families, though Brown (2004) finds that the detrimental effects of cohabitation are reduced to non-significance when economic characteristics and parental well-being are controlled. I explore the effects of these stable household types with the following questions and hypotheses:

- Does the effect of remaining in a stable single mother household differ significantly from the effect of remaining in a cohabiting mother household?
  Hypothesis 7: There is no significant difference in the effect of remaining in a stable single mother family relative to remaining in a stable cohabiting mother family on child behavior.

- Does the effect of remaining in a stable single mother household differ significantly from the effect of remaining in a stable married mother household?

  Hypothesis 8: Remaining in a stable single mother family is positively associated with behavior problems relative to remaining in a stable married mother family. This effect is reduced in strength when background characteristics are controlled and is reduced to non-significance when a measure of parenting is added to the model.

- Does the effect of remaining in a stable cohabiting mother household differ from the effect of remaining in a stable married mother household?

  Hypothesis 9: Remaining in a stable cohabiting mother family is positively associated with behavior problems relative to remaining in a stable married mother family. This effect is reduced in strength when background characteristics are controlled and reduced to non-significance when a measure of parenting is added to the model.

Finally, I explore the same questions by child sex and race and by the relatedness of the mother's spouse or partner to the child. Child sex is found to have a significant association with both the risk of divorce and the amount of time that fathers spend with children. Having at least one boy appears to reduce the risk of divorce (Katzev, Warner, and Acock 1994), and the birth of a boy lessens the amount of time to marriage with the child's biological father (Lundberg and Rose 2003). Further, the presence of a boy in the family is positively associated with the amount of involvement that fathers have in

parenting (Harris and Morgan 1991). Thus, one might expect that divorce or dissolution of a cohabiting union would be more detrimental for boys than for girls and that maternal entrance into a new union would benefit boys relative to girls. Mott, Kowaleski-Jones, and Menaghan (1997) find few significant sex differences in the effect of father absence on child behavior, but Malone et al. (2004) find that experiencing parental divorce increases boys' trajectories of behavior problems

Previous research also shows significant race differences in the effects of maternal relationship types. For example, Nelson et al. (2001) find detrimental effects of living in cohabiting stepfamilies relative to remaining in single mother families for White and Hispanic children, while there is no significant difference for Black children. Further, Dunifon and Kowaleski-Jones (2002) find that the amount of time spent in a single mother family is positively associated with behavior problems for White children, but there is no effect for Black children. Fomby and Cherlin (2007) also find a significant impact of family instability on externalizing behavior for White children but not for Black children, when other variables are controlled.

Turning to the effects of stepfamilies compared to biological parent families, previous research generally shows detrimental effects of stepfamilies on child outcomes (Brown 2006; Nelson et al. 2001). In addition, Hao and Xie (2002) find that, when the amount of time spent in the relationship is controlled, there is no significant difference between children in single mother families and those in married stepfamilies, and children in single mother families actually have lower levels of behavior problems than

children in cohabiting stepfamilies. Thus, the presence of two parental figures in the household does not always benefit children.

Chapter 3: Methodology

Data

The data to address these questions are drawn from the 1986-2004 waves of the National Longitudinal Survey of Youth 1979 and the Children of the NLSY79. The National Longitudinal Survey of Youth 1979 is a nationally representative sample of 12,686 young men and women who were 14-21 years of age on December 31, 1978. The survey, which over-samples minorities, economically disadvantaged non-Hispanic whites, and members of the military, was conducted annually from 1979-1994 and biennially from 1996 to the present. Interviews with the over-samples of military personnel and economically disadvantaged non-Hispanic whites were discontinued after 1984 and 1990, respectively.

Data have been collected on the children of women in the NLSY79 cohort every two years since 1986. The NLSY79 child sample originally consisted of all children born to the women in the NLSY79. As of 1988, the sample was limited to children whose usual residence was in the mother's home. In the 2000 survey round, a random sample of 38 percent of the children of mothers in the Black and Hispanic oversample were not interviewed, although they are included in subsequent survey years. Response rates for children in the NLSY sample are

over 90 percent for all survey years from 1986 to 2004, with the exception of the 2000 wave. Although children interviewed in early survey rounds are not representative of the U.S. population, given that they were born to disproportionately young mothers, by 2004 more than 84 percent of the children surveyed were born to mothers age 20 and older. As of the 2004 survey wave, the average female NLSY respondent has 1.9 children (Center for Human Resource Research 2006). The current analyses are limited to children who have at least two concurrent waves of data available.

Measures of Dependent Variables

The primary dependent variable is a measure of child outcomes that captures behavioral problems and emotional well-being. These outcomes are measured using the Behavior Problems Index (BPI), which consists of a series of 28 questions capturing mother ratings of the behavior of children ages four to fourteen. The BPI was created by Peterson and Zill (1986) and adapted from the work of Achenbach. The BPI measures the behavior exhibited by children in the three months prior to the mother's interview. The BPI is measured at each of the four age periods considered in this study. The dependent variable in this study is BPI score at Time 2, while BPI score at Time 1 is used in the models to control for behavior problems that existed prior to any relationship transition. This allows me to disentangle the causal effect of maternal relationships on child behavior from any variables that affect both maternal relationship transitions and

child behavior. Further, it controls for the possibility that child behavior problems themselves actually affect the types of relationship transitions made by mothers.

Each item on the BPI has three possible responses: “often true”, “sometimes true”, and “not true”. Mother ratings of often true or sometimes true receive a 1 on the BPI, while a response to not true receives a 0. Higher values on the total score represent a greater level of behavioral problems. The overall BPI includes six subscores determined by factor analysis. These subscales, shown in Table 3.1, include: antisocial behavior, anxiousness/depression, headstrongness, hyperactivity, immaturity, dependency, and peer conflict/social withdrawal. Baker, Keck, Mott, and Quinlan (1993) find that, as of the 1990 survey wave, the internal consistency reliability of the BPI is .89 for children and .91 for adolescents. More recently, Brand and Brinich (1999) find that the internal consistency reliability is .91 for children and .92 for adolescents.

Measures of Independent Variables

The primary independent variable in this study is maternal relationship transition type. Until recently, it was difficult to track episodes of cohabitation across survey waves of the NLSY79 because partners could not be identified across time. Researchers could only make an effort to determine if the same partners were present from wave to wave using characteristics such as age and education. A series of variables now allow for the identification of partners and spouses across the entire history of the survey; however, only partners who are in the household at the date of each survey point are captured, meaning that short-term unions may be missed and long-term cohabiting unions are overrepresented

in the data. I also conducted my own check of the data in an effort to look for inconsistencies in reports of spouses or partners across waves, based on checks of consistency in age and educational attainment. I then constructed a series of possible transitions that I consider in this study. These transition types are shown in Table 3.2.

There are additional relationship transition types that are not considered here, such as moving from a cohabitation at Time 1 to a new cohabitation at Time 2 or moving from a marriage to another marriage, but there were too few cases to analyze. I consider a series of transitions based upon the age of the child through the construction of synthetic cohorts. For example, I pool all of the data from the survey years when the children were age 4-5, when they were 6-7, and so on and create a series of four transition periods. These include the transition from age 4-5 to 6-7, 6-7 to 8-9, 8-9 to 10-11, and 10-11 to 12-13.

Additionally, I consider parenting as a variable that may mediate the association between maternal relationships and child behavior problems. I measure parenting at Time 2 using The Home Observation Measurement of the Environment-Short Form (HOME-SF). The HOME-SF is an indicator of the quality of the home environment, specifically the cognitive stimulation and emotional support provided by the child's family, and is adapted from the work of Caldwell and Bradley 1984, 1992 (Center for Human Resource Research 2006). Some of the items in the HOME-SF are based on interviewer observation, and other items are based on the report of the child's mother. There are separate

HOME scores for children under the age of 3, ages 3-5, ages 6-9, and ages 10 and over. These items are shown in Appendix A. Responses are recoded into a dichotomous form and summed. In 2004, the HOME short form had a completion rate of over 95 percent (Center for Human Resource Research 2006). Because the components of the HOME score are different for ages 3-5, 6-9, and 10 and over, I cannot include a measure of the change in HOME score between Time 1 and Time 2 in all of the analyses. However, I investigated the possibility of adding a measure of HOME score change in the models looking at transitions between the ages of 6-7 and 8-9 and 10-11 and 12-13, since the composition of the score does not change between these time points. I find that the addition of this variable does not change any of my overall conclusions, so these models are excluded from the analyses.

There are a number of additional variables included in the models that may be associated with both maternal relationship transitions and child behavior problems. These include the educational attainment of the child's mother, mother's age at the birth of the child, the number of children ever born to the mother, race or ethnicity, and the child's sex. All of these variables are measured at Time 1.

Educational Attainment of Mother

Educational attainment of the mother is coded as a series of dichotomous variables, representing the highest grade completed (less than a high school

education, a high school degree or General Equivalency Diploma (GED) , some college, and a college degree or higher).

Mother's Age at the Birth of the Child

Mother's age at the birth of the focal child is measured in years.

Number of Children Ever Born to Mother

The number of children ever born to the mother is measured as a continuous variable.

Race and Ethnicity

Each child's race and ethnicity is determined based upon the mother's data from the initial 1978 survey screener. The race/ethnicity categories include Hispanic, non-Hispanic Black, and Non-Black/Non-Hispanic. The latter category includes those coded as White and Other, such as Asian and American Indian.

Sex of Child

The sex of the child is a dichotomous variable where 1 equals male and 0 equals female.

I run additional models where children of all age groups are pooled in a single sample. Two additional independent variables are included in these models.

Age of Child

In the pooled models, I control for age of the child at Time 1. This is a series of dichotomous variables: age 6-7, age, 8-9, and age 10-11, with age 4-5 serving as the reference category.

Relatedness of Spouse or Partner to the Child

For children in married and cohabiting mother households, there is a measure indicating whether the spouse or partner is the child's biological father or the child's stepfather. At each survey wave, the mother is asked if the child's father lives in the household. If the answer to this question is yes, then it is assumed that the mother's co-resident spouse or partner is the child's biological father.

Methods

I use negative binomial regression to examine the influence of maternal relationship transitions, child and maternal characteristics, previous behavior problems, and HOME scores on the Behavior Problems Index. The negative binomial regression coefficients show the influence of a one-unit increase in the independent variable on the difference in the log of the expected count on the dependent variable. I use negative binomial regression rather than Poisson regression because my dependent variable is an overdispersed count variable (Brown 2006). Evidence of overdispersion indicates an inadequate fit of the Poisson model. Because of the presence of siblings in the data, I report all results using robust standard errors.

I initially run four models for each of the four transition periods. In model 1, I control only for the type of maternal relationship transition experienced by the child in the time period of consideration. The models specify the type of maternal relationship change experienced by the child. The transitions specified include:

transition from no relationship to cohabitation, transition from no relationship to marriage, transition from cohabitation to no relationship (break up), and transition from marriage to no relationship (divorce). I also consider the effect of remaining in stable cohabiting mother households, stable single mother households, and stable married mother households. In each set of models, one of these transitions or stable household types serves as the reference group, as a comparison against the other types.

I add a control for the child's BPI score at Time 1 in Model 2. Models in which previous scores on the dependent variable are used as controls are known as autogressive models or models with lagged dependent variable; this method is similar to that used by Kalil and Ziol-Guest (2005) and Brown (2006). This accounts for behavior problems that existed prior to any maternal relationship transition, enabling me to look more clearly at any causal effect of a change in maternal relationship status. In Model 3, I add the child and maternal characteristics discussed above as control variables that may affect both maternal relationships and child behavior. Any significant effects of maternal relationship transitions that persist net of these variables are more likely to be related causally to child behavior problems. I explore one possible mediating variable in Model 4. In the final model, I add the HOME score at Time 2 as a measure of parenting. Parenting is measured after any transition occurs, given the possibility that this may mediate the association between maternal relationships and child outcomes.

I further refine the analyses by exploring separate models by child sex and race. I initially run interactions between child sex and the maternal relationship types and between child race and ethnicity and maternal relationship types and enter these interaction terms in Model 3 described above. In cases where these interaction terms are significant, I run separate models by sex or race/ethnicity. Finally, I run models considering the role of the relationship of the mother's spouse or partner to the child. Given the small sample size of some of the transition types considered when specified by relatedness, I pool all of the age groups for this portion of the analysis.

Descriptive Statistics for Children Interviewed at Ages 4-5 and 6-7

The final sample is limited to children who have complete data at each of the two time points. Thus, there is a final sample size of 4993 for children surveyed at the ages of 4-5 and 6-7, 4996 for children surveyed at the ages of 6-7 and 8-9, 4871 for children surveyed at the ages of 8-9 and 10-11, and 4407 for children surveyed at the ages of 10-11 and 12-13. Table 3.3 shows descriptive statistics for the variables used in the analyses for the 4993 children interviewed at ages 4-5 and 6-7. These children have a mean BPI score of 8.68 at age 4-5, with a standard deviation of 5.60, and a mean score of 8.71 at age 6-7, with a standard deviation of 6.10. The mean HOME score at age 6-7 is 19.96, with a standard deviation of 3.85. The mothers of these children have an average of 2.58 children and were, on average, 26.33 years old at the birth of the child. Over 60 percent of the mothers have a high school education or less, while only 16.8

percent have a college degree. Based on the race/ethnicity screener of the mother, 52.41 percent of the children are classified as White or Other, 27.66 percent are Black, and 19.93 percent are Hispanic. Just under 51 percent of the children interviewed at age 4-5 are male.

Descriptive Statistics for Children Interviewed at Ages 6-7 and 8-9

A total of 4996 children were interviewed at ages 6-7 and 8-9 (Table 3.4). The mean BPI score for children in this group at age 6-7 is 8.87 (standard devation=6.11) and the mean at age 8-9 is 8.99 (standard deviation=6.32). The mean HOME score for children at age 8-9 is 19.84, with a standard deviation of 3.78. The mothers of children in this group have an average of 2.69 children and were, on average, 25.17 years old at the birth of the child. Almost 63 percent of these mothers have a high school education or less, while only 15 percent have a college degree. Approximately half of those interviewed between ages 6-7 and 8-9 are White or Other, 29.64 percent are Black, and 19.78 percent are Hispanic. Just under 51 percent of those interviewed at age 6-7 are male.

Descriptive Statistics for Children Interviewed at Ages 8-9 and 10-11

A total of 4871 children were interviewed at ages 8-9 and 10-11 (Table 3.5). The mean BPI score for children in this age group is 9.14 at age 8-9, with a standard deviation of 6.36, and 8.88 at age 10-11, with a standard deviation of 6.41. The mean HOME score for children age 10-11 is 20.08, with a standard deviation of 3.72. The mothers of children in the 8-9 year old age group have an average of 2.78 children and were, on average, 24.24 years old at the birth of the child. Over one-quarter of the mothers of the children in this sample have less

than a high school education, while 38.92 percent have a high school education, and 12.87 percent have a college degree. Just under 49 percent of these children are White or Other, 31.33 percent are Black, and 20.02 percent are Hispanic. Boys make up 50.59 percent of the children in this group.

Descriptive Statistics for Children Interviewed at Ages 10-11 and 12-13

A total of 4407 children were interviewed at ages 10-11 and 12-13 (Table 3.6). The mean BPI score for children in this group at age 10-11 is 8.97, with a standard deviation of 6.36. The mean score at age 12-13 is 8.28, with a standard deviation of 6.05.

The average HOME score for children in this group at age 12-13 is 19.78, with a standard deviation of 3.74. The mothers of children in the 10-11 year old age group have an average of 2.86 children and were, on average, 23.40 years old at the birth of the child. Over 66 percent of the mothers of the children in this sample have a high school education or less, and only 11.73 percent have a college degree. Over 47 percent of the children in this group are White or belong to another racial group, 32.47 percent are Black, and 20.47 percent are Hispanic. Just under 51 percent of these children are male.

Relationship Transition Frequencies

The frequencies for the various maternal relationship transition types are shown in Table 3.7. Across all age ranges, the majority of children remain in stable households. Between the ages of 4-5 and 6-7, for example, 62.23 percent of the children in the sample remain in stable married mother families, while

21.71 percent remain in stable single mother families. This pattern holds across all age groups, although the percentage of children in stable married mother households declines somewhat with child age and the percentage of children in stable single mother families increases. At all age ranges, approximately four percent of children remain in stable cohabiting mother families at both time points. The most common maternal relationship transitions experienced by children at all ages are divorce and maternal entrance into a new marriage. Approximately two percent of children in each age range experience maternal entrance into cohabitation, while just over one percent experience the end of a cohabiting union.

Mean BPI scores by transition type

Table 3.8 shows mean BPI scores by maternal relationship transition type and age. These results allow for a comparison of BPI scores at Time 1 and Time 2, both before and after any maternal relationship transition occurs. Children who remain in stable married mother households have the lowest mean BPI scores of the sampled children, across all age groups, while children in stable cohabiting households consistently have among the highest mean BPI scores. Average BPI scores for children in stable single mother families generally fall between the two.

Looking at children who experience a maternal relationship transition between the ages of 4-5 and 6-7, those whose mothers experience the break-up of a cohabitation, and those whose mothers enter a new cohabiting union have the highest average BPI scores at age 6-7. Those whose mothers enter a new

cohabitation also have among the highest mean BPI scores before any transition takes place, at age 4-5. The same is not true for children whose mothers end a cohabiting union, however. These children actually have among the lowest BPI scores at age 4-5.

Similarly, children who experience maternal transitions into and out of cohabitations between the ages of 6-7 and 8-9 have the highest mean BPI scores at age 8-9. However, their mean BPI scores before the transition occurs (at age 6-7) are not among the highest of the children sampled. Children between the ages of 8-9 and 10-11 whose mothers transition from no relationship to a cohabiting union have the highest mean BPI scores of any sampled children at both time points, while children whose mothers end their cohabitations have among the lowest BPI scores of the sampled children. This pattern changes for children sampled at ages 10-11 and 12-13 who experience the highest BPI scores when their mothers end a cohabiting union.

Mean HOME Scores by Transition Type

Table 3.9 shows the mean Time 2 HOME scores by each transition type. At each age, mean HOME scores are highest for children who remain in stable married households and those whose mothers transition into marriage. It appears that experiencing the transition from a single mother family to a cohabiting family also benefits children in terms of HOME scores, though not as much as experiencing the transition to a married mother household; the lowest HOME

scores are seen for children who remain in stable single mother families and those whose mothers exit cohabiting unions. Children who remain in stable cohabiting families have mean HOME scores that fall between those reported for children in stable married mother families and those in single mother families.

SUBSCALE	ITEM
Antisocial	Cheats or tells lies
Antisocial	Bullies or is cruel to others
Antisocial	Does not feel sorry for misbehaving
Antisocial	Breaks things deliberately (<12 yrs)
Antisocial	Disobedient at school (>5 yrs)
Antisocial	Trouble getting along with teachers (>5 yrs)
Anxious/Depressed	Sudden changes in mood/feeling
Anxious/Depressed	Feels/complains no one loves him/her
Anxious/Depressed	Too fearful or anxious
Anxious/Depressed	Feels worthless or inferior
Anxious/Depressed	Unhappy, sad or depressed
Dependent	Clings to adults (<12 yrs)
Dependent	Cries too much (<12yrs)
Dependent	Demands a lot of attention (<12 yrs)
Dependent	Too dependent on others (<12 yrs)
Headstrong	High strung, tense, nervous
Headstrong	Argues too much
Headstrong	Disobedient at home
Headstrong	Stubborn, sullen, or irritable
Headstrong	Strong temper, loses it easily
Hyperactive	Difficulty concentrating/paying attention
Hyperactive	Easily confused/in a fog
Hyperactive	Impulsive – acts without thinking
Hyperactive	Trouble with obsessions, etc.
Hyperactive	Restless, overly active, etc.
Peer Problems	Trouble getting along with others
Peer Problems	Not liked by other children
Peer Problems	Withdrawn, not involved with others

Table 3.1. Subscales of the Behavior Problems Index (BPI)

Time 1 Status	**Time 2 Status**
Married	Divorced (no partner)
Cohabiting	No relationship
Cohabiting	Married to previous cohabiting partner
No relationship	Married
No relationship	Cohabiting
Cohabiting	Cohabiting with same partner (no transition)
Married	Married to same spouse (no transition)
No relationship	No relationship (no transition)

Table 3.2. Potential Relationship Transition Types from T1 to T2

	Mean (St. Dev.)	Percent Distribution
Total BPI Score at Time 1	8.68 (5.60)	
Total BPI Score at Time 2	8.71 (6.10)	
HOME Score at Time 2	19.96 (3.85)	
Children ever born at Time 1	2.58 (1.23)	
Mother's Age at Birth of Child	26.33 (4.75)	
Mother's Education at Time 1		
Less than high school		21.96
High School		38.69
Some College		22.55
College Graduate		16.80
Race		
White/Other		52.41
Black		27.66
Hispanic		19.93
Child is Male		50.91
Total Children in Sample		4993

Table 3.3. Descriptive Statistics for Children in Sample Between Ages 4-5 and 6-7

	Mean (St. Dev.)	Percent Distribution
Total BPI Score at Time 1	8.87 (6.11)	
Total BPI Score at Time 2	8.99 (6.32)	
HOME Score at Time 2	19.84 (3.78)	
Children ever born at Time 1	2.69 (1.23)	
Mother's Age at Birth of Child	25.17 (4.69)	
Mother's Education at Time 1		
Less than high school		22.90
High School		39.67
Some College		22.46
College Graduate		14.97
Race		
White/Other		50.58
Black		29.64
Hispanic		19.78
Child is Male		50.80
Total Children in Sample	4996	

Table 3.4. Descriptive Statistics for Children in Sample Between Ages 6-7 and 8-9

	Mean (St. Dev.)	Percent Distribution
Total BPI Score at Time 1	9.14 (6.36)	
Total BPI Score at Time 2	8.88 (6.41)	
HOME Score at Time 2	20.08 (3.72)	
Children ever born at Time 1	2.78 (1.26)	
Mother's Age at Birth of Child	24.24 (4.57)	
Mother's Education at Time 1		
Less than high school		25.36
High School		38.92
Some College		22.85
College Graduate		12.87
Race		
White/Other		48.65
Black		31.33
Hispanic		20.02
Child is Male		50.59
Total Children in Sample	4871	

Table 3.5. Descriptive Statistics for Children in Sample Between Ages 8-9 and 10-11

	Mean (St. Dev.)	Percent Distribution
Total BPI Score at Time 1	8.97 (6.36)	
Total BPI Score at Time 2	8.28 (6.05)	
HOME Score at Time 2	19.78 (3.74)	
Children ever born at Time 1	2.85 (1.28)	
Mother's Age at Birth of Child	23.40 (4.33)	
Mother's Education at Time 1		
Less than high school		27.27
High School		38.85
Some College		22.15
College Graduate		11.73
Race		
White/Other		47.06
Black		32.47
Hispanic		20.47
Child is Male		50.90
Total Children in Sample	4407	

Table 3.6. Descriptive Statistics for Children in Sample Between Ages 10-11 and 12-13

Time 1 Status	Time 2 Status	4-5 to 6-7		6-7 to 8-9		8-9 to 10-11		10-11 to 12-13	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Relationship Entrance									
No relationship	Cohabiting	102	2.04	111	2.22	96	1.97	98	2.22
No relationship	Married	138	2.76	138	2.76	139	2.85	146	3.31
Cohabiting	Married to partner	65	1.30	57	1.14	56	1.15	48	1.09
Relationship Exit									
Cohabiting	No relationship	64	1.28	57	1.14	70	1.44	61	1.38
Married	No relationship	238	4.77	240	4.80	211	4.33	189	4.29
Stable Relationship									
No relationship	No relationship	1084	21.71	1172	23.46	1294	26.57	1215	27.57
Cohabiting	Cohabiting with same partner	195	3.91	194	3.88	192	3.94	183	4.15
Married	Married to same spouse	3107	62.23	3027	60.59	2813	57.75	2467	55.98
Total N		4993	100	4996	100	4871	100	4407	100

Table 3.7. Relationship Transition Frequencies and Percentages

Time 1 Status	Time 2 Status	4-5 to 6-7		6-7 to 8-9		8-9 to 10-11		10-11 to 12-13	
		Mean BPI at 4-5	Mean BPI at 6-7	Mean BPI at 6-7	Mean BPI at 8-9	Mean BPI at 8-9	Mean BPI at 10-11	Mean BPI at 10-11	Mean BPI at 12-13
Relationship Entrance									
No relationship	Cohabiting	10.16	10.23	9.83	10.67	11.47	11.80	9.93	9.09
		(5.49)	(6.67)	(6.38)	(6.75)	(6.76)	(6.94)	(6.50)	(6.59)
No relationship	Married	9.51	9.46	9.32	9.70	10.35	10.04	9.33	7.92
		(5.48)	(6.15)	(6.09)	(6.17)	(6.47)	(6.63)	(6.31)	(6.03)
Cohabiting	Married to partner	9.14	8.97	10.40	10.30	10.70	10.27	10.58	9.44
		(5.50)	(4.83)	(6.40)	(5.98)	(7.57)	(7.21)	(6.95)	(6.20)
Relationship Exit									
Cohabiting	No relationship	9.08	10.47	9.63	10.40	9.74	10.10	11.52	10.62
		(5.03)	(5.88)	(6.15)	(6.91)	(6.17)	(6.68)	(7.29)	(5.88)
Married	No relationship	9.39	9.48	9.52	9.68	10.31	10.27	8.60	8.32
		(5.34)	(5.69)	(5.92)	(6.48)	(5.97)	(6.62)	(5.62)	(5.74)

Table 3.8. Mean BPI Scores and Standard Deviations by Maternal Relationship Transition Type and Age

Table 3.8 continued

Table 3.8 continued

		4-5 to 6-7		6-7 to 8-9		8-9 to 10-11		10-11 to 12-13	
Time 1 Status	Time 2 Status	Mean BPI at 4-5	Mean BPI at 6-7	Mean BPI at 6-7	Mean BPI at 8-9	Mean BPI at 8-9	Mean BPI at 10-11	Mean BPI at 10-11	Mean BPI at 12-13
Stable Relationship									
No relationship	No relationship								
		9.73	9.92	10.33	10.30	10.31	10.08	10.32	9.32
		(6.00)	(6.47)	(6.40)	(6.70)	(6.82)	(6.77)	(6.82)	(6.57)
Cohabiting	Cohabiting with same	10.22	10.47	10.40	10.25	11.11	11.09	11.03	9.75
		(6.21)	(6.92)	(7.03)	(7.12)	(7.03)	(7.53)	(7.55)	(6.84)
Married	Married to same spouse	8.06	8.00	8.06	8.21	8.19	7.86	8.02	7.56
		(5.37)	(5.84)	(5.78)	(5.95)	(5.90)	(5.86)	(5.84)	(5.59)

Time 1 Status	Time 2 Status	4-5 to 6-7 Mean HOME at 6-7	6-7 to 8-9 Mean HOME at 8-9	8-9 to 10-11 Mean HOME at 10-11	10-11 to 12-13 Mean HOME at 12-13
Relationship Entrance					
No relationship	Cohabiting	18.25	19.40	18.80	18.63
		(3.79)	(3.35)	(3.56)	(3.88)
No relationship	Married	19.93	19.57	19.91	20.00
		(3.26)	(3.26)	(3.38)	(3.03)
Cohabiting	Married to partner	20.32	19.26	20.77	19.38
		(2.97)	(3.20)	(2.78)	(2.78)
Relationship Exit					
Cohabiting	No relationship	17.17	16.61	18.03	17.67
		(3.42)	(3.86)	(3.48)	(3.72)
Married	No relationship	17.64	18.20	18.55	18.21
		(3.66)	(3.57)	(3.20)	(3.36)
Stable Relationship					
No relationship	No relationship	17.10	17.06	17.48	17.32
		(3.83)	(3.83)	(3.57)	(3.54)
Cohabiting	Cohabiting with same	18.94	18.79	18.98	18.69
		(3.27)	(3.51)	(3.50)	(3.57)
Married	Married to same spouse	21.31	21.21	21.55	21.28
		(3.20)	(3.06)	(3.06)	(3.12)

Table 3.9. Mean HOME Scores and Standard Deviations by Maternal Relationship Transition Type and Age

Chapter 4: Results by Child Age

Results for Transitions Between Age 4-5 and Age 6-7

Effects of Maternal Union Entrance

Table 4.1 shows the results of the effects of maternal relationship transition types on the difference in the log of the expected BPI score for children aged 6-7. There are four models run for each of ten comparisons. The first comparison examines the effect of experiencing maternal entrance into a new cohabiting union relative to remaining in a stable single mother family, and the second set of models shows the effect of experiencing maternal entrance into marriage relative to remaining in a stable single mother family. These models allow for an examination of the effect of entrance into a two parent family on BPI score compared to remaining in a single parent family. The results indicate no significant effects of experiencing maternal entrance into either cohabitation or marriage between the ages of 4-5 and 6-7 on the difference in the log of the expected BPI score in any of the four models. That is, for the youngest children in the sample, there appears to be no benefit of entering a household with a second adult present relative to remaining in a household with a single mother.

The third set of models examines the effect of entrance into a formal two parent family versus an informal two parent family by comparing the effect of maternal entrance

into marriage relative to maternal entrance into a cohabiting union. The results show that there is no significant difference between maternal entrance into a formal union versus an informal cohabiting union for children aged 6-7. The fourth set of models compares the effect of maternal formalization of a cohabiting union through marriage compared to remaining in a cohabiting union. The results show that experiencing the formalization of a maternal cohabitation is associated with a decrease in the log of the expected BPI score relative to remaining in a cohabiting household for children aged 6-7. However, this effect is reduced to non-significance when BPI score at age 4-5 is controlled. That is, any benefit of experiencing the formalization of a maternal cohabiting union is reduced to non-significance when behavior problems before the transition are taken into account.

Effects of Maternal Union Exit

The next three sets of models examine the effects of maternal union exits. The first of these (comparison 5) shows the effect of experiencing maternal exit from cohabitation relative to remaining in a stable cohabiting household. For children aged 6-7, there is no significant difference in behavior problems between children who experience the break-up of a maternal cohabitation and those who remain in a stable cohabiting household.

The second set of relationship exit models (comparison 6) compares the effect of experiencing maternal divorce versus remaining in a stable married mother household. There is a significant positive effect of experiencing maternal divorce on the difference in the log of the expected BPI score relative to remaining in a stable married mother household. A maternal divorce is associated with a .103 point increase in the difference

in the log of the child's expected BPI score. This significant effect persists, but is reduced in strength, when BPI score at age 4-5 is controlled (r=.083). The effect is reduced to non-significance when child and maternal characteristics are added to the model, indicating that there is a selection effect operating in the association between maternal divorce and child behavioral outcomes.

The next set of models (comparison 7) compares the effect of maternal divorce to the effect of the dissolution of a maternal cohabitation to determine if the *type* of maternal union exit matters for children. The results show a significant negative effect of divorce that persists across all four models. That is, relative to experiencing the end of a maternal cohabitation, experiencing maternal divorce is associated with a .159 point decrease in the log of the expected BPI score. This effect persists, and, in fact, strengthens, when previous BPI score is controlled. The strength of the coefficient declines only slightly when background characteristics of the children and the mother are controlled. Further, when Time 2 HOME score is controlled in Model 4, the effect remains significant, showing that the association between divorce and child behavior relative to maternal exit from cohabitation is not a result of parenting behavior that exists after the dissolution of the relationship. Thus, this significant effect is a result of characteristics not included in these models.

Effects of Stable Maternal Unions

The previous models showed few significant effects of maternal transitions into and out of various relationships on child BPI scores. Perhaps more significant effects are apparent when considering longer-term stable household types. The final sets of models

shown on Table 4.1 show the effects of remaining in stable maternal unions between the ages of 4-5 and 6-7. The initial two sets of models (comparisons 8 and 9) show the effects of remaining in a stable single mother family relative to remaining in stable cohabiting and married mother households, respectively. That is, these models show the effects of remaining in a stable one-parent family compared to remaining in both types of stable two-parent families. Comparison 8 shows no significant difference between remaining in a stable single mother household and remaining in a stable cohabiting mother household, though the negative effect approaches significance in models 1 and 4. In contrast, remaining in a stable single mother household is associated with a significant positive difference in the log of the expected BPI score at age 6-7 relative to remaining in a stable married mother household. Model 1 shows that remaining in a stable single mother household is associated with a .185 point increase in the log of the expected BPI score compared to remaining in a stable married mother household between the ages of 4-5 and 6-7. This significant effect persists, but is reduced in strength, when BPI score at age 4-5 and child and maternal background characteristics are controlled. Thus, remaining in a stable single mother family is associated with a greater level of behavior problems compared to remaining in a stable married mother family over time, even when prior behavior problems are taken into account and when characteristics that may influence both household type and behavior problems are controlled. Therefore, the detrimental effect of remaining in a stable single mother family for the youngest children in the sample does not appear to be a result of selection. However, when Time 2 parenting is controlled, this effect is reduced to non-significance. It appears that the

detrimental effect of remaining in a stable single mother family relative to remaining in a stable married mother family is a result of differences in parenting style.

The final comparison shows the effect of remaining in a stable cohabiting mother household compared to remaining in a stable married mother household. Living in a stable cohabiting household is associated with a .271 point increase in the difference in the log of the expected BPI score at age 6-7 relative to remaining in a stable married mother household. This significant positive association persists, but is reduced in strength by almost half, when behavior problems at age 4-5 are controlled. Thus, part of the effect of remaining in a cohabiting mother household appears to be a function of prior behavior problems. When child and maternal background characteristics are added to the model the effect remains significant, indicating that the detrimental effect of remaining in a stable cohabiting union is not simply a result of selection into this household type. The coefficient also remains significant when Time 2 HOME score is controlled. Thus, the impact of remaining in a stable cohabiting household relative to remaining in a stable married mother household is not entirely a result of parenting style, through the strength of the coefficient is reduced.

Results for Transitions Between Age 6-7 and Age 8-9

Effects of Maternal Union Entrance

The same ten comparisons discussed above are run again to examine the effect of maternal relationships experienced by children between the ages of 6-7 and 8-9 (Table 4.2). The first three sets of models show the effects of maternal entrance into new unions. The first two comparisons show the effects of experiencing maternal transitions

into cohabitation and marriage relative to remaining in a stable single mother family, respectively. The third comparison examines the effects of maternal entrance into marriage compared to entrance into cohabitation. For children aged 8-9, there are no significant effects of any of these transition types.

Effects of Maternal Union Exit

The next four comparisons show the effects of experiencing maternal union exits between the ages of 6-7 and 8-9. Relative to remaining in a stable cohabiting mother household, there are no significant effects of experiencing the formalization of a cohabiting union through marriage or experiencing the break-up of a maternal cohabitation. While there is no effect of experiencing the end of a cohabiting union relative to remaining in a stable cohabiting household, there is a significant positive effect of experiencing maternal divorce on child behavior problems compared to remaining in a stable married mother family. Children who experience maternal divorce between the ages of 6-7 and 8-9 have a .140 point increase in the difference of the log of the expected BPI score relative to those who remain in a stable married mother household. This effect persists, but is reduced in strength, when BPI score at Time 1 and child and maternal background characteristics are controlled. It is reduced to non-significance when Time 2 HOME score is controlled in Model 4. This suggests that the detrimental effect of divorce is causal for children in this age group and operates through the parenting style that exists after the divorce. There is no significant difference in the effect of experiencing maternal divorce relative to experiencing the end of a maternal cohabiting union for this age group.

Effects of Stable Maternal Unions

The final comparisons show the effects of remaining in stable households between the ages of 6-7 and 8-9. Comparison 8 shows no significant difference in the effect of remaining in a stable single mother family and remaining in a stable cohabiting household on the difference in the log of the expected BPI score. In contrast, both remaining in a stable single mother household and remaining in a stable cohabiting mother household are positively associated with the difference in the log of the expected BPI score compared to remaining in a stable married mother household (comparisons 9 and 10). The significant effect of remaining in a stable cohabiting mother household is reduced to non-significance in Model 2, when previous BPI score is controlled. Thus, it appears that long-term residence in a cohabiting household does not appear to lead to increased behavior problems over time compared to remaining in a stable married mother household. When behavior problems at age 6-7 are taken into account, children in cohabiting households do not differ from their counterparts in married mother households in their level of behavior problems at age 8-9. However, the significant positive effect of remaining in a single mother household relative to remaining in a stable married mother household on child behavior problems at age 8-9 persists when BPI score at age 6-7 and child and maternal characteristics are controlled, though the strength of the effect is reduced dramatically. Therefore, is appears that remaining in a single mother family for an extended time leads to increased behavior problems, but this detrimental effect is reduced to non-significance when parenting at age 8-9 is controlled. Thus, the

detrimental effect of stable single mother families for children in this age group appears to be a result of a less positive parenting style.

Results for Transitions Between Age 8-9 and Age 10-11

Effects of Maternal Union Entrance

Table 4.3 shows the effects of experiencing maternal relationship transitions between the ages of 8-9 and 10-11. The first set of comparisons shows the effects of maternal union entrance. None of these effects is significant, although the positive effect of experiencing maternal entrance into cohabitation relative to remaining in a single mother household approaches significance when the HOME score is controlled (comparison 1).

Effects of Maternal Union Exit

The next set of comparisons shows the effects of various maternal union exits. The only significant effect is shown for experiencing maternal divorce between the ages of 8-9 and 10-11 relative to remaining in a stable married mother household. Experiencing divorce is associated with a .244 point increase in the difference in the log of the expected BPI score at age 10-11. This significant effect persists, but is reduced in strength, when BPI score at age 8-9 and Time 1 child and maternal background characteristics are controlled, indicating that the significant effect of maternal divorce is not a result of these selection factors. However, it is worth noting that the effect of divorce is reduced by about 40 percent when prior behavior problems are controlled. Thus, it appears that, while pre-adolescent children who experience divorce have higher levels of behavior problems compared to children whose mothers remain married, they

also have higher levels of behavior problems before the divorce takes place. When Time 2 HOME score is controlled, the effect remains significant but is reduced further in strength, indicating that the causal effect of divorce does not operate entirely through the parenting style of divorced mothers relative to the parenting style of mothers in stable marriages. There is no significant effect of experiencing formalization of a cohabiting union through marriage or experiencing the break-up of a maternal cohabitation relative to experiencing a stable maternal cohabitation. Further, there is no significant effect of experiencing maternal divorce compared to experiencing the dissolution of a cohabiting union.

Effects of Stable Maternal Unions

The final comparisons show the effects of remaining in stable household types between the ages of 8-9 and 10-11. There is no significant effect of remaining in a stable single mother household when compared to remaining in a stable cohabiting mother household, though the negative effect of remaining in a single mother family approaches significance in Model 1 ($p<.10$). However, children who remain in either stable single mother households or stable cohabiting mother households have significantly larger differences in the log of their expected BPI score at age 10-11 compared to their counterparts who remain in stable married mother households. In both cases, this effect persists in Model 2, but the strength of the effect is reduced dramatically. Controlling for prior behavior problems reduces the strength of the effect of remaining in a stable single mother household by about 58 percent and the effect of remaining in a stable cohabiting mother household by 62 percent. The effect is reduced to non-significance when the

HOME score is controlled. Thus, it appears that, for these pre-adolescents, part of the significant detrimental effect of living in a stable non-traditional family results from consistently high levels of behavior problems at younger ages and part from less effective parenting.

Results for Transitions Between Age 10-11 and Age 12-13

Effects of Maternal Union Entrance

Table 4.4 shows the results for transitions experienced by children between the ages of 10-11 and 12-13. The first group of comparisons shows the effects of experiencing maternal union entrance. The only significant effect shown for children in this age group is the significant negative effect of experiencing maternal entrance into marriage compared to remaining in a stable single mother household. Experiencing maternal marriage is associated with a .174 point decrease in the difference in the log of the expected BPI score at age 12-13. This effect is reduced to non-significance when BPI score at age 10-11 is controlled. That is, there is no causal effect of maternal entrance into marriage on child behavior problems. The significant effect does not persist after adjusting for behavior problems that existed prior to the transition.

Effects of Maternal Union Exit

The next group of comparisons shows the effects of experiencing various maternal union exits. Again, there are few significant effects for children in this oldest age group. There is a significant negative effect of experiencing maternal divorce compared to experiencing the break-up of a maternal cohabitation (r=-.208) on the BPI score, but this is reduced to non-significance in Model 2. Again, the beneficial effect of

divorce on behavior problems relative to the effect of maternal exit from cohabitation is a result of the level of behavior problems that existed *prior* to the transition. It is not a causal association.

Effects of Stable Maternal Unions

The final group of comparisons shows the effects of remaining in stable household types between the ages of 10-11 and 12-13. As with children in the previously discussed age groups, there is no significant effect of remaining in a stable single mother household compared to remaining in a stable cohabiting mother household. There are significant positive effects of remaining in a stable single mother household and stable cohabiting mother household relative to remaining in a stable married mother household on BPI scores. The positive effect of remaining in a cohabiting household is reduced to non-significance in Model 2 when BPI score at age 10-11 is controlled, indicating that behavior problems do not appear to increase over time for children in long-term stable cohabiting households. The significant positive effect of remaining in a single mother family persists but the size of the effect is reduced in strength by almost 73 percent when previous BPI score is controlled. It is reduced to non-significance when Time 1 background characteristics are controlled, indicating that the detrimental effect of remaining in a stable single mother household is a result of selection. However, when Time 2 HOME score is controlled, the effect of remaining in a stable single mother family actually switches direction, becoming negative and significant. It appears that, when parenting is taken into account, adolescents in this sample benefit from remaining in stable single mother families. It is important to remember that the oldest children in

this sample are a select group, made up disproportionately of children born to young mothers (average age at birth of child=23.63) compared to the younger children in the sample and that minorities are disproportionately represented in the NLSY79 data. Therefore, these results cannot be generalized to the larger U.S. population.

Summary of Results Across Age Groups

To summarize, there are few significant effects of maternal relationship entrance on child behavior problems in any of the age groups. There is no significant effect of experiencing maternal entrance into cohabitation relative to remaining in a stable single mother family. That is, there appears to be no support for the idea that two parents are better for children than one, at least when those two parents reside in a cohabiting union. Further, there is no significant difference in the effect of experiencing the transition from a single mother family to a cohabiting mother family and the effect of experiencing the transition from a single mother family to a married mother family.

For the oldest children in the sample, aged 12-13, there is a beneficial effect of experiencing maternal marriage compared to remaining in a stable single mother family, though this effect is reduced to non-significance when BPI score at age 10-11 is controlled. Therefore, any benefits that adolescents receive from experiencing maternal marriage are a result of factors that existed prior to the transition to marriage. Finally, for the youngest children in the sample, there is a beneficial effect of experiencing maternal formalization of cohabitation through marriage relative to remaining in a stable cohabiting mother household. Again, this effect is reduced to non-significance in Model

2. Thus, in this sample there are no causal effects for maternal union entrance on child behavior problems for children in any age group.

Turning to maternal relationship exit, there is a consistent positive effect of experiencing maternal divorce on children's BPI scores relative to remaining in a stable married mother family for the three youngest age groups considered here. However, for the youngest children in the sample this is not a causal effect. The effect is reduced to non-significance when child and maternal background characteristics are added to the model. For children aged 8-9, the effect of divorce appears to operate primarily through parenting. When the HOME score is added to the model, the effect is reduced to non-significance. The detrimental effect of divorce remains significant across all four models only for the pre-adolescents aged 10-11. For these children, the significant effect of divorce is not a result of pre-existing characteristics or behavior problems or parenting style after the divorce. For the oldest children in the sample, there is little effect of divorce relative to remaining in a stable married household.

The other significant effects for maternal relationship exit are seen in the effect of divorce compared to the effect of experiencing maternal exit from cohabitation. Experiencing a maternal divorce between the ages of 4-5 and 6-7 has a significant negative effect on the difference in the log of the expected BPI score compared to experiencing the break-up of a cohabiting household. That is, experiencing divorce is significantly less detrimental for the youngest children in the sample than experiencing a transition from a cohabiting to a single mother household. This significant effect persists across all four models. For children aged 8-9 and 10-11, there is no significant difference

in the effect of divorce and the effect of experiencing the end of a cohabiting union. For children aged 12-13 there is also a negative effect of maternal divorce compared to maternal exit from cohabitation, but this effect is reduced to non-significance when previous behavior problems are controlled. In sum, the difference in the effect of divorce and the effect of maternal exit from cohabitation is a result of behavioral problems that existed prior to the end of the mother's relationship.

The strongest and most consistent effects are seen in the comparisons of stable maternal relationship types. For children of all age groups, there are significant positive effects of remaining in a stable single mother household or a stable cohabiting mother household compared to remaining in a stable married mother household in the first model. The positive effect of remaining with a single mother is reduced to non-significance for children aged 6-7, 8-9, and 10-11 when the HOME score is controlled, indicating that the detrimental effect of remaining in a stable single mother family relative to remaining in a stable married parent family is a result of parenting quality. For the oldest children in the sample, the pattern of the effect is different. The effect of remaining in a stable single mother family is reduced to non-significance when maternal and child background characteristics are controlled, suggesting that the detrimental effect of long-term residence in a single parent household is a result of selection factors. However, the effect actually changes direction and becomes significant when the HOME score is controlled, indicating that parenting not only can overcome the detrimental impact of living in a single parent household but that positive parenting can actually lead

to better behavioral outcomes for these children relative to their counterparts in married mother families.

Turning to the detrimental effect of remaining in a stable cohabiting household relative to remaining in a stable married mother household, for the youngest children in the sample this significant effect persists net of controls for previous behavior problems, child and maternal background characteristics, and the HOME score at age 6-7. For these children, it appears that there is a causal effect that is not mediated completely by parenting. A similar effect is seen for children aged 10-11. For the other children in the sample, this effect is not causal. For children aged 8-9 and 12-13, the positive effect of remaining in a stable cohabiting household on BPI score is reduced to non-significance when prior levels of behavior problems are controlled. That is, their levels of behavior problems are not increasing over time. For children in all age groups, there is no significant difference in the effect of remaining in a stable single mother family relative to remaining in a stable cohabiting mother family on the difference in the log of the expected BPI score. Even with the presence of two adults in the household, children who live in longer-term stable cohabiting unions do not exhibit lower levels of behavior problems than their counterparts in single mother families.

Results of Models Combining Age Groups

Table 4.5 shows the results of the same ten comparisons for models in which all of the above age groups are combined. In this case, three dichotomous variables indicating Time 1 age are added to Model 3. As in the previous models, there are few significant effects associated with maternal relationship entrance and exit, with two

exceptions. There is a significant positive effect of experiencing the formalization of a cohabiting union on the difference in the log of the expected BPI score relative to remaining in a stable cohabiting mother household. That is, having a cohabiting mother who makes the transition to marriage actually appears to be detrimental for children, even when previous behavior problems and child and maternal background characteristics are controlled. This association is not mediated by parenting style after the transition, so it cannot be explained by the variables included in these models, though the strength of the effect is reduced by one-third when prior behavior problems are controlled. Turning to relationship exit, no significant effects are seen. The effect of experiencing maternal dissolution of a cohabiting union relative to remaining in a stable cohabiting mother household approaches significance when previous behavior problems are controlled ($p<.10$, two-tailed), but not in the direction that I hypothesized.

As in the models run separately by age, the results for the combined models show the greatest number of significant effects for the stable household types. Remaining in either a stable single mother household or a stable cohabiting mother household is detrimental for children relative to remaining in a stable married mother household. The significant effect of cohabitation persists, although the size of the effect is reduced in strength, when Time 1 behavior problems are controlled. The effect of stable cohabitation is reduced to non-significance when child and maternal background characteristics are controlled, indicating that the effect of cohabitation relative to marriage on child behavior problems is a spurious one resulting from these characteristics. In contrast, background characteristics do not explain the positive

association between remaining in a stable single mother family and child behavior problems relative to remaining in a stable married mother family, though controlling for previous behavior problems reduces the size of the effect by half. The remaining effect is mediated by Time 2 parenting. There is no significant difference in the effect of remaining in a stable single mother family relative to remaining in a stable cohabiting mother family.

Comparison		Model 1	Model 2	Model 3	Model 4
	Relationship Entrance				
	Reference=Remain single				
1	Enter cohabitation	0.021	0.007	-0.005	0.015
2	Enter marriage	-0.066	-0.023	-0.022	0.019
	Reference=Enter cohabitation				
3	Enter marriage	-0.088	-0.030	-0.017	0.004
	Reference=Stable cohabitation				
4	Cohabitation to marriage	-0.191 *	-0.056	-0.060	-0.038
	Relationship Exit				
	Reference=Stable cohabitation				
5	Exit cohabitation	-0.009	0.125	0.108	0.080
	Reference=Stable marriage				
6	Divorce	0.103 *	0.083 *	0.056	0.004

Table 4.1. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score at Age 6-7

Table 4.1 continued

Table 4.1 continued

Comparison		Model 1	Model 2	Model 3	Model 4
	Reference=Exit cohabitation				
7	Divorce	-0.159 *	-0.182 *	-0.168 *	-0.170 *
	Stable Relationship				
	Reference=Stable cohabitation				
8	Remain single	-0.086 ^	-0.029	-0.047	-0.081 ^
	Reference=Stable marriage				
9	Remain single	0.185 ***	0.112 ***	0.068 **	0.014
10	Stable cohabitation	0.271 ***	0.141 **	0.115 *	0.095 *
	Deviance	5785.327	5976.166	5975.511	5979.458
	Pearson Chi-square	4053.286	4973.551	4968.826	4973.447
	Dispersion	0.481	0.268	0.263	0.259

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for Time 1 BPI score
Model 3 - Adds controls for Time 1 child and maternal characteristics
Model 4 - Adds a control for Time 2 HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Comparison		Model 1	Model 2	Model 3	Model 4
	Relationship Entrance				
	Reference=Remain single				
1	Enter cohabitation	0.036	0.075	0.060	0.110
2	Enter marriage	-0.072	0.018	0.020	0.066
	Reference=Enter cohabitation				
3	Enter marriage	-0.108	-0.057	-0.040	-0.044
	Reference=Stable cohabitation				
4	Cohabitation to marriage	-0.050	0.010	0.021	0.034
	Relationship Exit				
	Reference=Stable cohabitation				
5	Exit cohabitation	-0.008	0.096	0.075	0.037
	Reference=Stable marriage				
6	Divorce	0.140 *	0.097 *	0.069 ^	0.020

Table 4.2. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score at Age 8-9

Table 4.2 continued

Table 4.2 continued

Comparison		Model 1	Model 2	Model 3	Model 4
	Reference=Exit cohabitation				
7	Divorce	-0.055	-0.053	-0.027	-0.009
	<u>Stable Relationship</u>				
	Reference=Stable cohabitation				
8	Remain single	0.006	0.036	0.036	0.000
	Reference=Stable marriage				
9	Remain single	0.209 ***	0.090 ***	0.057 **	-0.009
10	Stable cohabitation	0.203 ***	0.054	0.021	-0.009
	Deviance	5728.376	5942.337	5942.641	5946.945
	Pearson Chi-square	4164.079	5182.347	5151.602	5162.183
	Dispersion	0.470	0.233	0.228	0.222

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for Time 1 BPI score
Model 3 - Adds controls for Time 1 child and maternal characteristics
Model 4 - Adds a control for Time 2 HOME score

***p<.001; **p<.01; *p<.05; ˆp<.10 (two tailed)

Comparison		Model 1	Model 2	Model 3	Model 4
	Relationship Entrance				
	Reference=Remain single				
1	Enter cohabitation	0.086	0.082	0.076	0.102 ^
2	Enter marriage	-0.009	-0.010	-0.011	0.028
	Reference=Enter cohabitation				
3	Enter marriage	-0.094	-0.093	-0.087	-0.074
	Reference=Stable cohabitation				
4	Cohabitation to marriage	-0.085	-0.061	-0.057	-0.036
	Relationship Exit				
	Reference=Stable cohabitation				
5	Exit cohabitation	-0.062	0.066	0.056	0.032
	Reference=Stable marriage				
6	Divorce	0.244 ***	0.148 ***	0.124 **	0.080 *

Table 4.3. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score at Age 10-11

Table 4.3 continued

Table 4.3 continued

Comparison		Model 1	Model 2	Model 3	Model 4
	Reference=Exit cohabitation				
7	Divorce	-0.021	-0.041	-0.018	-0.012
	Stable Relationship				
	Reference=Stable cohabitation				
8	Remain single	-0.094 ^	-0.024	-0.014	-0.041
	Reference=Stable marriage				
9	Remain single	0.233 ***	0.099 ***	0.073 **	0.019
10	Stable cohabitation	0.327 ***	0.123 **	0.087 ^	0.060
	Deviance	5603.117	5833.126	5827.633	5829.760
	Pearson Chi-square	3994.058	5025.114	4962.677	4951.919
	Dispersion	0.503	0.241	0.237	0.233

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for Time 1 BPI score
Model 3 - Adds controls for Time 1 child and maternal characteristics
Model 4 - Adds a control for Time 2 HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Comparison		Model 1	Model 2	Model 3	Model 4
	Relationship Entrance				
	Reference=Remain single				
1	Enter cohabitation	-0.035	0.008	-0.007	0.010
2	Enter marriage	-0.174 **	-0.088	-0.081	-0.033
	Reference=Enter cohabitation				
3	Enter marriage	-0.139	-0.096	-0.074	-0.043
	Reference=Stable cohabitation				
4	Cohabitation to marriage	-0.005	0.023	0.004	0.020
	Relationship Exit				
	Reference=Stable cohabitation				
5	Exit cohabitation	0.081	0.108	0.091	0.070
	Reference=Stable marriage				
6	Divorce	0.070	0.092 ^	0.058	0.004

Table 4.4. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score at Age 12-13

Table 4.4 continued

Table 4.4 continued

Comparison		Model 1	Model 2	Model 3	Model 4
	Reference=Exit cohabitation				
7	Divorce	-0.208 *	-0.038	-0.014	-0.011
	Stable Relationship				
	Reference=Stable cohabitation				
8	Remain single	-0.008	0.029	0.019	-0.007
	Reference=Stable marriage				
9	Remain single	0.189 ***	0.051 *	0.000	-0.062 *
10	Stable cohabitation	0.196 ***	0.022	-0.019	-0.055
	Deviance	5083.167	5286.352	5292.523	5297.049
	Pearson Chi-square	3570.918	4691.516	4584.553	4566.967
	Dispersion	0.523	0.273	0.260	0.255

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for Time 1 BPI score
Model 3 - Adds controls for Time 1 child and maternal characteristics
Model 4 - Adds a control for Time 2 HOME score

***p<.001; **p<.01; *p<.05; ˆp<.10 (two tailed)

Comparison		Model 1	Model 2	Model 3	Model 4
	Relationship Entrance				
	Reference=Remain single				
1	Enter cohabitation	0.017	-0.031	-0.046	-0.040
2	Enter marriage	0.036	0.001	-0.015	-0.019
	Reference=Enter cohabitation				
3	Enter marriage	0.031	0.003	-0.011	-0.013
	Reference=Stable cohabitation				
4	Cohabitation to marriage	0.147 ***	0.097 ***	0.089 *	0.090 **
	Relationship Exit				
	Reference=Stable cohabitation				
5	Exit cohabitation	0.061	0.070 ^	0.066 ^	0.073 ^
	Reference=Stable marriage				
6	Divorce	0.026	0.026	0.029	0.029

Table 4.5. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score for All Age Groups

Table 4.5 continued

Table 4.5 continued

Comparison		Model 1	Model 2	Model 3	Model 4
	Reference=Exit cohabitation				
7	Divorce	0.026	0.025	0.028	0.027
	Stable Relationship				
	Reference=Stable cohabitation				
8	Remain single	0.034	-0.002	-0.004	-0.038
	Reference=Stable marriage				
9	Remain single	0.132 ***	0.068 ***	0.040 *	-0.014
10	Stable cohabitation	0.119 **	0.066 ^	0.055	0.033
	Deviance	7989.934	8259.260	8259.624	8266.297
	Pearson Chi-square	5614.602	6957.121	6917.795	6936.930
	Dispersion	0.473	0.268	0.263	0.257

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for Time 1 BPI score
Model 3 - Adds controls for Time 1 child and maternal characteristics
Model 4 - Adds a control for Time 2 HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Chapter 5: Results by Sex and Race/Ethnicity

Results by Sex of Child

Descriptive Statistics

In the next set of analyses, I examine whether the effects of maternal relationships on child behavior problems vary by the sex of the child. Table 5.1 shows the frequencies and percentages of maternal relationship types by age and sex of the child. At all ages, the most common maternal relationship type is stable marriage. Between the ages of 4-5 and 6-7, over 60 percent of both boys and girls live in stable married mother households. This percentage declines over time, with only 55.91 percent of girls and 56.04 percent of boys remaining in a stable married mother household between the ages of 10-11 and 12-13. In contrast, the percentage of children in single mother families increases over time, with 28.13 percent of boys and 26.99 percent of girls living in a single mother family between the ages of 10-11 and 12-13. The percentage of children in stable cohabiting mother families increases only slightly over time. Just over 4 percent of the oldest children in the sample live in stable cohabiting households. In general, boys are somewhat more likely than girls to remain in stable household types. Turning to maternal relationship transitions, the most common transition experienced by children of all ages is maternal divorce. Between 4-5 percent of children experience divorce at each time period, and, at all ages, girls are more likely than boys to experience maternal

divorce. Approximately 2-3 percent of children experience maternal entrance into a new relationship at each time point.

Negative Binomial Regression Results by Sex

Initially, I multiply child sex by the type of relationship transition experienced by the child and include this interaction term in Model 3 of each of the analyses described above. The results (not shown) indicate that only the effect of experiencing maternal entrance into cohabitation relative to remaining in a single mother family varies by child sex. This interaction term is significant for children aged 6-7, 10-11, and 12-13 at Time 2.

I then run separate models by child sex and age to examine the pattern of the effects of maternal cohabitation entrance (Table 5.2). For children in the youngest age group, aged 6-7, there is a positive effect of maternal cohabitation entrance for males and a negative effect for females, but these effects are non-significant. For the older children in the sample, the direction of the effect is just the opposite, being negative for males and positive for females. However, the only significant effect of maternal entrance into cohabitation is seen for females aged 10-11. For these girls, there is a strong positive effect of experiencing maternal entrance into cohabitation compared to remaining in a stable single mother family between the ages of 8-9 and 10-11. This result persists net of controls for child and maternal characteristics, indicating that this finding is not a result of selection based on the factors included in this model. Furthermore, this effect is not mediated by Time 2 parenting. While experiencing a transition from a single mother family to a cohabiting mother family relative to remaining in a stable single mother

family is detrimental to girls, this is not a result of the parenting style of the mother that is present after the relationship transition takes place. Thus, there must be other factors, not included in these models, that explain the detrimental effect of maternal entrance into cohabitation on the behavior of pre-adolescent girls. In contrast, here is no significant effect of maternal entrance into cohabitation for boys in this age group.

Results by Child Race and Ethnicity

Descriptive Statistics

In the next set of analyses, I examine whether the effects of maternal relationships on child behavior problems vary by the race or ethnicity of the child. Table 5.3 shows the frequencies and percentages of maternal relationship types by age and race/ethnicity. For non-Black, non-Hispanic children and Hispanic children, remaining in a stable married mother family is the most common relationship type experienced by children. Although the percentage of children remaining in such a household declines as children age, over 70 percent of non-Black, non-Hispanic children and almost 60 percent of Hispanic children reside in a stable married mother family between the ages of 10-11 and 12-13. In contrast, Black children are most likely to remain in a stable single mother family at all time points. By age 12-13, over one-half of all Black children live in a stable single mother family. At all ages, Hispanic children are more likely than their Black or non-Black, non-Hispanic counterparts to remain in a stable cohabiting family.

The most common maternal relationship transition experienced by children is divorce. At each time point, 4-5 percent of children in each race/ethnic group experience divorce. Black children are more likely than children in other groups to experience a

transition from a single mother family to a married mother family, while, in general, Hispanic children are more likely than others to experience a maternal transition into a cohabiting union.

Negative Binomial Regression Results

In order to examine results by race and ethnicity, I multiply the variable indicating whether the child is Black and the variable indicating whether the child is Hispanic by the type of relationship transition experienced by the child and include this interaction term in Model 3 of each of the analyses described in Chapter 3. I then run separate models by child race/ethnicity and age to look at the pattern of effects for the transitions where the interaction terms are significant. There are no significant differences in effects by race or ethnicity for children aged 10-11.

Results for Transitions Experienced Between Age 4-5 and 6-7

The results for children between the ages of 4-5 and 6-7 are shown on Table 5.4. The first comparison shows the effect of experiencing maternal entrance into a new cohabiting union relative to the effect of remaining in a stable single mother family. This effect differs significantly for Black children compared to their non-Black, non-Hispanic counterparts. Although there are differences in the direction of the effect by race and ethnicity, none of these effects is significant at the $p<.05$ (two tailed) level. It is important to note that few children experience transitions from single mother families to cohabiting families, so no conclusions should be drawn from this result.

The second significant interaction effect is shown for the effect of remaining in a stable cohabiting mother household relative to remaining in a stable married mother

household. This effect differs significantly for Black children compared to non-Black, non-Hispanic children. For non-Black, non-Hispanic children, there is a significant positive effect of remaining in a stable cohabiting mother household compared to remaining in a stable married mother household. This significant detrimental effect persists net of child and maternal background characteristics, indicating that this effect if not a result of the selection factors controlled in this model. Further, the increased level of behavior problems reported for non-Black, non-Hispanic children in stable cohabiting families is not a result of parenting at age 6-7. For Black and Hispanic children, there is no significant difference between children in stable cohabiting mother families and stable married mother families in terms of their level of behavior problems at age 6-7.

Results for Transitions Experienced Between Age 6-7 and 8-9

Table 5.5 shows the results by race and ethnicity for children aged 8-9. The first significant difference by race and ethnicity is shown in the effect of experiencing maternal entrance into a new cohabiting union relative to remaining in a stable single mother household. However, only 45 non-Black, non-Hispanic, 42 Black, and 24 Hispanic children experience this transition between the ages of 6-7 and 8-9, so no conclusions should be drawn from these results.

The second set of models shows the effect of experiencing maternal divorce between the ages of 6-7 and 8-9 compared to remaining in a stable married mother household. This effect differs significantly between Black and non-Black, non-Hispanic children. There is a significant positive effect of divorce for non-Black, non-Hispanic children that persists net of controls for selection. This detrimental effect of divorce for non-Black, non-Hispanic children is not a result of the mother's parenting style after the

divorce, as this effect remains significant in Model 4. There is a negative effect for Black children that reaches significance only in the final model. This is significant at the $p<.05$ (one tailed) level. Thus, for Black children, when parenting after the divorce is taken into account, children who experience maternal divorce actually have lower levels of behavior problems than their counterparts in stable married families. There is no significant effect of divorce for Hispanic children.

There are significant racial differences in the effect of experiencing maternal divorce relative to experiencing the break-up of a cohabitation and in the effect of remaining in a stable single mother family compared to remaining in a stable cohabiting mother family. In both cases, the direction of the effect is opposite for non-Black, non-Hispanic children compared to their Black counterparts. However, in no case are these effects significant.

The final significant racial and ethnic difference for children aged 8-9 is seen in the effect of remaining in a stable single mother family relative to remaining in a stable married mother family between the ages of 6-7 and 8-9. However, the effect is significant only for Black children, for whom there is a positive effect of remaining in a stable single mother family on behavior problems that persists net of background characteristics ($p<.05$, one-tailed). This effect is reduced to non-significance when the HOME score at age 8-9 is controlled in Model 4, indicating that the detrimental effect of remaining in a stable single mother family for Black children is a result of parenting practices.

Results for Transitions Experienced Between Age 10-11 and 12-13

Table 5.6 shows the results for children between the ages of 10-11 and 12-13 by race and ethnicity. The first significant difference is seen in the effect of experiencing maternal exit from cohabitation between the ages of 10-11 and 12-13 compared to remaining in a stable cohabiting mother household. This effect is significantly different for Black children compared to non-Black, non-Hispanic children. There is a significant negative effect for non-Black, non-Hispanic children and a significant positive effect for Black and Hispanic children. These significant effects persist net of background characteristics and parenting at Time 2. However, only 24 non-Black, non-Hispanic, 20 Black, and 17 Hispanic children experience a maternal transition out of a cohabiting relationship between the ages of 10-11 and 12-13, so no conclusions can be drawn from these results.

The next significant racial difference is seen in the effect of remaining in a stable single mother household between the ages of 10-11 and 12-13 relative to remaining in a stable cohabiting mother household. However, in no case are these effects significant. The final two sets of models show the effects of remaining in a stable single mother household and remaining in a stable cohabiting mother household relative to remaining in a stable married mother household. The effect of remaining in a stable single mother household differs significantly for Black children relative to non-Black, non-Hispanic children. For non-Black, non-Hispanic and Hispanic children, there is no significant difference in behavior problems at age 12-13 for those who remain in stable single mother families compared to those who remain in stable married mother households. However, for Black children, once parenting is taken into account, remaining in a stable

single mother family actually is beneficial for Black children compared to remaining in a stable married mother family.

The effect of remaining in a stable cohabiting mother family relative to remaining in a stable married mother family differs significantly for both Black and Hispanic children relative to their non-Black, non-Hispanic counterparts. There is a significant detrimental effect of remaining in a stable cohabiting mother family relative to remaining in a stable married mother family for non-Black, non-Hispanic children when background child and maternal characteristics are controlled ($p<.05$, one-tailed). This significant effect is mediated by parenting at Time 2, indicating that the detrimental effect of remaining in a stable cohabiting mother household is a result of parenting style. In contrast, when child and maternal characteristics are included in the model, there actually is a significant beneficial effect of remaining in a stable cohabiting household for Black children relative to remaining in a stable married mother household. This effect persists when the HOME score is controlled, indicating that the beneficial effect of remaining in a cohabiting mother family is not a result of selection or parenting style. A similar effect emerges for Hispanic children when parenting is taken into account ($p<.05$, one-tailed).

Summary of Results by Sex and Race/Ethnicity

In sum, there are few significant differences by sex or race and ethnicity in the effects of maternal relationships on child behavioral outcomes. The only significant interaction by sex is seen in the effect of maternal entrance into a new cohabiting union relative to remaining in a stable single mother family. The effect of experiencing the transition to a cohabiting household is significant only for girls who experience this

transition between the ages of 8-9 and 10-11. Compared to those who remain in stable single mother families, girls whose mothers transition to a cohabiting union have significantly higher levels of behavior problems. This significant association is not a result of selection factors or parenting. There is no similar effect for boys.

In terms of race and ethnicity, no clear patterns emerge. For the youngest children in the sample, there is a detrimental effect of remaining in a stable cohabitation relative to remaining in a stable married mother household between the ages of 4-5 and 6-7 for non-Black, non-Hispanic children that persists net of controls for background characteristics and is not mediated by parenting. For children aged 8-9, there is a detrimental effect of divorce relative to remaining in a stable married mother household for non-Black, non-Hispanic children. Again, this significant detrimental effect persists when background characteristics and the HOME score are added to the model. There is no significant effect of divorce for minority children. Finally, for the oldest children in the sample, there is a detrimental effect of remaining in a stable cohabiting mother family relative to remaining in a stable married mother family for non-Black, non-Hispanic children. This effect is mediated by parenting at age 12-13. For Black and Hispanic children, there is an opposite effect. When Time 2 HOME score is controlled, there is a negative association between remaining in a stable cohabiting mother household on the difference in the log of the expected BPI score for minority children relative to remaining in a stable married mother household. A similar effect is seen for Black children in the comparison of remaining in a stable single mother family relative to remaining in a stable married mother family. When the HOME score is added to the model, Black children in

single mother households actually have lower reported levels of behavior problems than their counterparts in stable married mother families. Thus, although there are few significant results by race, those significant effects that do exist appear to support the notion that non-traditional family types are more detrimental for non-Black, non-Hispanic children than for their minority counterparts. It is possible that cohabiting and single mother households are more normative, and therefore less problematic, for minority children. In addition, at each age Black and Hispanic children in married mother households are less likely than non-Black, non-Hispanic children to live with their biological fathers. Between the ages of 4-5 and 6-7, almost 96 percent of non-Black, non-Hispanic children in married mother households live with their biological fathers. For Black and Hispanic children, the percentages are 87.25 and 91.13, respectively. These percentages decline over time. By age 12-13, 85.22 percent of non-Black, non-Hispanic, 72.98 percent of Black, and 82.08 percent of Hispanic children in stable married mother households live with their biological fathers. Thus, if stable married stepfamilies make up a larger percentage of the reference group, then there are likely to be fewer significant effects when this group is compared to other non-traditional family types.

Results Of Models Combining Age Groups by Race and Ethnicity

Table 5.7 shows the results of models combining each of the four age groups by race and ethnicity. As above, interaction terms by race and ethnicity are added to Model 3 to examine significant race and ethnic differences in each of the ten comparisons of interest. Significant interactions are seen for four of the comparisons: experiencing

maternal exit from cohabitation relative to remaining in a stable cohabiting mother household, remaining in a stable single mother family relative to remaining in a stable cohabiting mother family, remaining in a stable single mother family relative to remaining in a stable married mother family, and remaining in a stable cohabiting mother household relative to remaining in a stable married mother household. When the full models are run separately by race and ethnicity, few significant effects are seen. Remaining in a stable single mother family has a small but significant positive association with the difference in the log of the expected BPI score for Hispanic children relative to remaining in a stable cohabiting mother family or a stable married mother family, but these effects are mediated fully by the HOME score. When the HOME score is controlled, a significant negative effect emerges for Black children. This indicates that, when parenting is taken into account, living in a stable single mother family is beneficial for Black children relative to remaining in a stable cohabiting mother family.

Time 1 Status	Time 2 Status	4-5 to 6-7				6-7 to 8-9			
		Male		Female		Male		Female	
		N	%	N	%	N	%	N	%
Relationship Entrance									
No relationship	Cohabiting	48	1.89	54	2.20	56	2.21	55	2.24
No relationship	Married	70	2.75	68	2.77	63	2.48	75	3.05
Cohabiting	Married to partner	27	1.06	38	1.55	17	0.67	40	1.63
Relationship Exit									
Cohabiting	No relationship	32	1.26	32	1.31	33	1.30	24	0.98
Married	No relationship	115	4.52	123	5.02	120	4.73	120	4.88
Stable Relationship									
No relationship	No relationship	546	21.48	538	21.95	599	23.60	573	23.31
Cohabiting	Cohabiting with same partner	101	3.97	94	3.84	103	4.06	91	3.70
Married	Married to same spouse	1603	63.06	1504	61.36	1547	60.95	1480	60.21
Total N		2542	100	2451	100	2538	100	2458	100

Table 5.1. Relationship Transition Frequencies and Percentages by Sex

Table 5.1 continued

Table 5.1 continued

Time 1 Status	Time 2 Status	8-9 to 10-11				10-11 to 12-13			
		Male		Female		Male		Female	
		N	%	N	%	N	%	N	%
Relationship Entrance									
No relationship	Cohabiting	49	1.99	47	1.95	48	2.14	50	2.31
No relationship	Married	75	3.04	64	2.66	61	2.72	85	3.93
Cohabiting	Married to partner	31	1.26	25	1.04	29	1.29	19	0.88
Relationship Exit									
Cohabiting	No relationship	34	1.38	36	1.50	36	1.60	25	1.16
Married	No relationship	99	4.02	112	4.65	87	3.88	102	4.71
Stable Relationship									
No relationship	No relationship	661	26.83	633	26.30	631	28.13	584	26.99
Cohabiting	Cohabiting with same partner	109	4.42	83	3.45	94	4.19	89	4.11
Married	Married to same spouse	1406	57.06	1407	58.45	1257	56.04	1210	55.91
Total N		2464	100	2407	100	2243	100	2164	100

	Model 3	Model 4
Relationship Entrance		
Reference=Remain single		
Enter cohabitation		
Males Age 6-7	0.101	0.119
Females Age 6-7	-0.110	-0.090
Males Age 10-11	-0.062	-0.039
Females Age 10-11	0.232 **	0.261 **
Males Age 12-13	-0.145	-0.133
Females Age 12-13	0.110	0.137

***p<.001; **p<.01; *p<.05; ˆp<.10 (two tailed)

Table 5.2. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score by Age and Sex

Time 1 Status	Time 2 Status	4-5 to 6-7						6-7 to 8-9					
		NB/NH		Black		Hispanic		NB/NH		Black		Hispanic	
		N	%	N	%	N	%	N	%	N	%	N	%
Relationship Entrance													
No relationship	Cohabiting	42	1.60	33	2.39	27	2.71	45	1.78	42	2.84	24	2.43
No relationship	Married	66	2.52	45	3.26	27	2.71	61	2.41	49	3.31	28	2.83
Cohabiting	Married to partner	32	1.22	21	1.52	12	1.21	25	0.99	20	1.35	12	1.21
Relationship Exit													
Cohabiting	No relationship	25	0.96	25	1.81	14	1.41	20	0.79	28	1.89	9	0.91
Married	No relationship	119	4.55	61	4.42	58	5.83	113	4.47	70	4.73	57	5.77
Stable Relationship													
No relationship	No relationship	254	9.71	655	47.43	175	17.59	272	10.76	713	48.14	187	18.93
Cohabiting	Cohabiting with same partner	67	2.56	68	4.92	60	6.03	75	2.97	57	3.85	62	6.28
Married	Married to same spouse	2012	76.88	473	34.25	622	62.51	1916	75.82	502	33.90	609	61.64
Total N		2617	100	1381	100	995	100	2527	100	1481	100	988	100

Table 5.3. Relationship Transition Frequencies by Race and Ethnicity

Table 5.3 continued

Table 5.3 continued

Time 1 Status	Time 2 Status	8-9 to 10-11						10-11 to 12-13					
		NB/NH		Black		Hispanic		NB/NH		Black		Hispanic	
		N	%	N	%	N	%	N	%	N	%	N	%
<u>Relationship Entrance</u>													
No relationship	Cohabiting	32	1.35	36	2.36	28	2.87	40	1.93	28	1.96	30	3.33
No relationship	Married	58	2.45	57	3.74	24	2.46	57	2.75	62	4.33	27	2.99
Cohabiting	Married to partner	33	1.39	17	1.11	6	0.62	19	0.92	11	0.77	18	2.00
<u>Relationship Exit</u>													
Cohabiting	No relationship	32	1.35	26	1.70	12	1.23	24	1.16	20	1.40	17	1.88
Married	No relationship	97	4.09	66	4.33	48	4.92	86	4.15	58	4.05	45	4.99
<u>Stable Relationship</u>													
No relationship	No relationship	302	12.74	773	50.66	219	22.46	289	13.93	730	51.01	196	21.73
Cohabiting	Cohabiting with same partner	70	2.95	60	3.93	62	6.36	70	3.38	63	4.40	50	5.54
Married	Married to same spouse	1746	73.67	491	32.18	576	59.08	1489	71.79	459	32.08	519	57.54
Total N		2370	100	1526	100	975	100	2074	100	1431	100	902	100

	Model 3	Model 4
Relationship Entrance		
Reference=Remain single		
Enter cohabitation		
Non-Black, Non-Hispanic	-0.156 ^	-0.157 ^
Black	0.120	0.150
Hispanic	0.033	0.067
Stable Relationship		
Reference=Stable marriage		
Stable cohabitation		
Non-Black, Non-Hispanic	0.286 ***	0.251 ***
Black	0.073	0.065
Hispanic	-0.008	-0.014

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for previous BPI score
Model 3 - Adds controls for child and maternal characteristics
Model 4 - Adds a control for HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Table 5.4. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score at Age 6-7 by Race and Ethnicity

	Model 3	Model 4
Relationship Entrance		
Reference=Remain single		
Enter cohabitation		
Non-Black, Non-Hispanic	0.076	0.138
Black	-0.058	-0.009
Hispanic	0.267 **	0.297 **
Relationship Exit		
Reference=Stable marriage		
Divorce		
Non-Black, Non-Hispanic	0.170 **	0.116 *
Black	-0.114	-0.154 ^
Hispanic	0.047	-0.002
Reference=Exit cohabitation		
Divorce		
Non-Black, Non-Hispanic	0.026	0.051
Black	-0.172	-0.145
Hispanic	0.088	0.072

Table 5.5. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score at Age 8-9 by Race and Ethnicity

Table 5.5 continued

Table 5.5 continued

	Model 3	Model 4
Stable Relationship		
Reference=Stable cohabitation		
Remain single		
Non-Black, Non-Hispanic	-0.022	-0.033
Black	0.044	-0.011
Hispanic	0.060	0.019
Reference=Stable marriage		
Remain single		
Non-Black, Non-Hispanic	0.049	-0.022
Black	0.068 ^	0.003
Hispanic	0.001	-0.051

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for previous BPI score
Model 3 - Adds controls for child and maternal characteristics
Model 4 - Adds a control for HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

	Model 3	Model 4
Relationship Exit		
Reference=Stable cohabitation		
Exit cohabitation		
Non-Black, Non-Hispanic	-0.433 ***	-0.450 ***
Black	0.366 **	0.346 **
Hispanic	0.339 **	0.303 *
Stable Relationship		
Reference=Stable cohabitation		
Remain single		
Non-Black, Non-Hispanic	-0.136	-0.152
Black	0.115	0.091
Hispanic	0.112	0.067
Reference=Stable marriage		
Remain single		
Non-Black, Non-Hispanic	0.048	-0.017
Black	-0.045	-0.095 *
Hispanic	-0.009	-0.082
Stable cohabitation		
Non-Black, Non-Hispanic	0.184 ^	0.134
Black	-0.161 *	-0.186 *
Hispanic	-0.121	-0.149 ^

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for previous BPI score
Model 3 - Adds controls for child and maternal characteristics
Model 4 - Adds a control for HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Table 5.6. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score at Age 12-13 by Race and Ethnicity

	Model 3	Model 4
Relationship Exit		
Reference=Stable cohabitation		
Exit cohabitation		
Non-Black, Non-Hispanic	0.078	0.076
Black	0.061	0.078
Hispanic	0.017	0.027
Stable Relationship		
Reference=Stable cohabitation		
Remain single		
Non-Black, Non-Hispanic	-0.035	-0.054
Black	-0.027	-0.074 ^
Hispanic	0.119 *	0.078
Reference=Stable marriage		
Remain single		
Non-Black, Non-Hispanic	0.022	-0.014
Black	0.038	-0.026
Hispanic	0.077 ^	0.018
Stable cohabitation		
Non-Black, Non-Hispanic	0.073	0.049
Black	0.070	0.054
Hispanic	0.023	-0.003

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for previous BPI score
Model 3 - Adds controls for child and maternal characteristics
Model 4 - Adds a control for HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Table 5.7. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score For Total Sample by Race and Ethnicity

Chapter 6: Results by Relatedness

Transition Frequencies by Relatedness of Mother's Spouse/Partner to Child

The final set of analyses compares the effects of maternal relationship types by the relatedness of the mother's spouse/partner to the child. The analyses are limited to children with a valid response to the question of whether or not the biological father is present in the household at both survey waves. There are a total of 4852 children with complete data at ages 4-5 and 6-7, 4827 children at ages 6-7 and 8-9, 4670 children at ages 8-9 and 10-11, and 4213 children at ages 10-11 and 12-13. The frequencies and percentages of relationship transition types are shown on Table 6.1. The most common relationship type at all ages is remaining in a married biological family at both time points. Of all of the relationship types in the sample, it is likely that stable relationships with the child's biological father are the longest in duration. However, the likelihood of this relationship type declines as the child ages. Over 60 percent of children surveyed at between the ages of 4-5 and 6-7 live in this type of household, while only 47.61 percent remain in such a household between the ages of 10-11 and 12-13.

Similarly, the likelihood of remaining in a stable cohabiting biological parent household or experiencing maternal entrance into marriage or cohabitation with the child's biological father decline over time. Less than one percent of children in each age group experience the transition into a married or cohabiting household with their

biological father or experience the transition from a cohabiting household to a married household with their fathers. It is likely that, if mothers enter co-residential relationships with their child's father, they do so before the child reaches the age of 4 or 5.

In contrast, the likelihood of experiencing relationship transitions with stepfathers, particularly transitions into and out of marriage, increases over time. At each age, children are more likely to experience transitions into both married and cohabiting households with stepfathers than to experience similar transitions into co-residential relationships with their biological fathers. When it comes to relationship exit, while the likelihood of experiencing divorce with the child's biological father is more likely than experiencing the end of a married stepfamily at all ages, the likelihood of divorce from the child's biological father decreases over time, while the likelihood of marital dissolution with the child's stepfather increases over time. It is likely that the relationships with the child's biological father are longer-term than those with the child's stepfather, so the end of such unions may be more detrimental for children.

In sum, the likelihood of remaining in stable household types with the child's biological father or experiencing transitions into new relationships with the child's biological father decreases over time, while the likelihood of equivalent relationship types with the child's stepfather increases over time. At all ages, children are more likely to experience transitions into new relationships with a stepfather than with their biological fathers, probably because mothers who establish co-residential relationships with the fathers of their children do so before the child reaches the age of 4 or 5. Since marriages with the child's biological father are more common than stable marriages with

stepfathers, it is no surprise that divorces from the child's biological father are more common than divorces from the child's stepfather. However, the percentage of children who experience their mother's divorce from their biological fathers decreases over time, as marriages with biological parents also decline over time. The likelihood of remaining in stable married stepfamilies and experiencing the end of such unions increases over time. At each age, the second most common family form is a stable single mother family.

Negative Binomial Regression Results

Results When Spouse/Partner is Child's Biological Father

Tables 6.2 and 6.3 show the negative binomial regression results of the effects of maternal relationship transition types when the relatedness of the spouse or partner to the child is held constant. These four models are similar to those described previously. However, children from all four age groups are merged in these analyses, and a control for age at Time 1 (age 6-7, age 8-9, and age 10-11, with age 4-5 serving as the reference group) is added to Model 3. When the analyses are limited to children experiencing maternal relationships with their biological fathers (Table 6.2), few significant results are seen. Relative to remaining in a single mother family, there is no effect of experiencing maternal entrance into a cohabiting union or a marriage with the child's biological father on behavior problems. Further, there is no significant difference in the effect of experiencing entrance into marriage compared to entrance into a cohabiting union or in the effect of experiencing maternal divorce compared to the break-up of a cohabitation in this analysis.

The only significant effects are seen in the effects of stable maternal union types. Specifically, remaining in a stable single mother family is associated with an increase in the log of the expected BPI score relative to remaining in a stable married biological parent family. However, when the HOME score is controlled, the effect of remaining in a single mother family reverses direction, suggesting that children in single mother families may be better off than those in stable married biological parent families when parenting is taken into account. This result is unexpected and should be explored in future analyses.

Results When Spouse/Partner is Child's Stepfather

Turning to results when the analyses are limited to relationship types where the mother's spouse or partner is the child's stepfather, more significant results are seen (Table 6.3). Experiencing a transition from a cohabiting stepfamily to a married stepfamily, compared to remaining in a stable cohabiting stepfamily, is associated with a higher level of behavior problems among children. The break-up of a cohabiting union similarly is detrimental for children relative to remaining in a stable cohabiting household with a stepfather. Both of these results are reduced to non-significance at the $p<.05$ (two-tailed) level when background characteristics are added to the model, suggesting that these associations are spurious. Comparing these effects with those seen in the previous table indicates that the effects of maternal relationships with children's biological fathers and the effects of maternal relationships with children's stepfathers differ. Specifically, while relationship transitions that occur with biological fathers have no significant associations with children's behavior problems, transitions into marriage and out of

cohabiting unions with stepfathers appear to have detrimental effects compared to remaining in stable cohabiting stepfamilies.

Similar to the effects seen in previous analyses, remaining in a stable single mother family is associated with increased behavior problems relative to remaining in a stable married stepfamily, though this result is reduced to non-significance when prior levels of behavior problems are controlled. In contrast, the association between remaining in a stable single mother family and remaining in a stable married biological parent family is not a result of previous levels of behavior problems but is a result of child and maternal characteristics. In addition, remaining in a stable cohabiting stepfamily is detrimental to children relative to remaining in a stable married stepparent family, though this effect also is reduced to non-significance with the inclusion of prior BPI score in the model. As in previous analyses, when the HOME score is controlled, the effect of remaining in a stable single mother family, relative to remaining in a stable married or cohabiting stepparent family, becomes negative. This indicates that, when the HOME score is held constant, children in single mother families are better off, at least in terms of behavior problems, than their counterparts in stable married and cohabiting stepfamilies.

Results for Comparisons of Biological Families and Stepfamilies

The previous analyses showed the effects of maternal relationship types when the relatedness of the spouse or partner to the child was held constant. The final set of analyses, shown in Table 6.4, shows the results of comparisons between stepfamilies and biological families. There is no significant difference in the effect of experiencing

maternal entrance into cohabitation with the child's biological father compared to entrance into cohabitation with the child's stepfather, though this effect approaches significance when child and maternal background characteristics are added to the model. In addition, there is no significant difference in the effect of maternal entrance into marriage by relatedness of the spouse to the child. However, in comparing the effects of formalization of a cohabiting union by relatedness, there is a significant positive effect of experiencing the formalization of a union with a stepfather relative to experiencing the same transition with a biological father. That is, making the transition from a cohabiting stepfamily to a married stepfamily is associated with a significantly higher level of behavior problems compared to experiencing the transition from cohabitation to marriage with a biological father. This result is reduced in significance when the measure of behavior problems prior to the transition is controlled, indicating that part of this effect is a result of selection factors. Further, the significant detrimental effect of experiencing the formalization of a cohabiting stepfamily through marriage is not mediated by parenting.

The only significant effect of maternal relationship exit is seen in the effect of maternal exit from cohabitation. Experiencing maternal exit from cohabitation with a stepfather is positively associated with the difference in the log of the expected BPI score relative to experiencing the end of a maternal cohabitation with a biological father. This significant effect emerges when previous BPI score is controlled. That is, when the level of behavior problems prior to the dissolution of the maternal relationship is controlled, there is a detrimental effect of experiencing exit from cohabitation with a stepfather relative to experiencing exit from a cohabiting union with the child's biological father.

This level of significance is reduced when background characteristics are controlled. The effect of experiencing maternal divorce from a stepfather does not differ significantly from the effect of experiencing maternal divorce from a biological father.

The final sets of models compare the effects of remaining in stable household types. The first comparison shows the effect of remaining in a stable cohabiting household with a stepfather relative to remaining in a stable cohabiting household with a biological father. While there is a small positive effect of remaining in a cohabiting stepfamily that approaches significance at the $p<.10$ (two tailed) level in Model 1, this effect is reduced to non-significance when the BPI score at the previous survey wave is controlled. Comparing the effects of stable marriage by relatedness, there is a small but significant positive effect of remaining in a stable married stepfamily compared to remaining in a stable married biological family. This effect persists when previous behavior problems are controlled but is reduced to non-significance when child and maternal characteristics are controlled. Thus, the significant detrimental effect of remaining in a stable cohabiting stepfamily does not appear to increase over time, as it is reduced to non-significance when previous behavior problems are controlled. The detrimental effect of remaining in a stable married stepfamily relative to remaining in a stable married biological family is a result of background factors affecting both the type of relationship and child outcomes.

	4-5 to 6-7		6-7 to 8-9		8-9 to 10-11		10-11 to 12-13	
	N	Percent	N	Percent	N	Percent	N	Percent
Relationship Entrance								
Enter cohabitation with bio father	20	0.41	17	0.35	7	0.15	5	0.12
Enter cohabitation with stepfather	73	1.50	86	1.78	78	1.67	83	1.97
Enter marriage with bio father	37	0.76	41	0.85	36	0.77	29	0.69
Enter marriage with stepfather	88	1.81	95	1.97	98	2.10	111	2.63
Cohab to marriage with bio father	28	0.58	23	0.48	15	0.32	9	0.21
Cohab to marriage with stepfather	32	0.66	28	0.58	33	0.71	34	0.81
Relationship Exit								
Exit cohabitation with bio father	34	0.70	19	0.39	17	0.36	11	0.26
Exit cohabitation with stepfather	29	0.60	34	0.70	50	1.07	44	1.04
Divorce from bio father	202	4.16	178	3.69	151	3.23	110	2.61
Divorce from stepfather	30	0.62	49	1.02	48	1.03	68	1.61
Stable Relationship								
Stable cohabitation with bio father	114	2.35	77	1.60	53	1.13	35	0.83
Stable cohabitation with stepfather	67	1.38	99	2.05	109	2.33	117	2.78
Stable marriage with bio father	2929	60.37	2731	56.58	2377	50.90	2006	47.61
Stable marriage with stepfather	125	2.58	224	4.64	358	7.67	382	9.07
Stable single mother family	1044	21.52	1126	23.33	1240	26.55	1169	27.75
N	4852	100	4827	100	4670	100	4213	100

Table 6.1. Frequencies of Maternal Relationship Transitions by Relatedness

Comparison		Model 1	Model 2	Model 3	Model 4
	Relationship Entrance				
	Reference=Remain single				
1	Enter cohabitation with bio father	-0.027	0.072	0.003	-0.002
2	No relationship to marriage with bio father	0.067	0.060	-0.010	-0.012
	Reference=Enter cohabitation with bio father				
3	No relationship to marriage with bio father	0.067	0.058	-0.011	-0.014
	Reference=Stable cohabitation with bio father				
4	Cohabitation to marriage with bio father	0.000	0.012	-0.001	0.003
	Relationship Exit				
	Reference=Stable cohabitation with bio father				
5	Cohabitation with bio father to no relationship	0.018	0.006	-0.003	0.009
	Reference=Stable marriage with bio father				
6	Divorce from bio father	0.016	0.006	-0.017	-0.018

Table 6.2. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score Where Spouse/Partner is Biological Father

Table 6.2 continued

Table 6.2 continued

Comparison		Model 1	Model 2	Model 3	Model 4
	Reference=Exit cohabitation with bio father				
7	Divorce from bio father	0.028	0.014	-0.013	-0.017
	Stable Relationship				
	Reference=Stable cohabitation with bio father				
8	Remain single	0.046	-0.028	-0.018	-0.048 ^
	Reference=Stable marriage with bio father				
9	Remain single	0.144 ***	0.041 *	0.010	-0.040 ^
10	Stable cohabitation with bio father	0.102	0.061	0.029	0.014

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for previous BPI score
Model 3 - Adds controls for child and maternal characteristics
Model 4 - Adds a control for HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Comparison		Model 1	Model 2	Model 3	Model 4
	Relationship Entrance				
	Reference=Remain single				
1	Enter cohabitation with stepfather	0.042	-0.022	-0.077 ^	-0.074 ^
2	No relationship to marriage with stepfather	0.024	-0.005	-0.045	-0.043
	Reference=Enter cohabitation with stepfather				
3	No relationship to marriage with stepfather	0.019	-0.001	-0.039	-0.034
	Reference=Stable cohabitation with stepfather				
4	Cohabitation to marriage with stepfather	0.152 **	0.110 *	0.091 ^	0.095 ^
	Relationship Exit				
	Reference=Stable cohabitation with stepfather				
5	Cohabitation with stepfather to no relationship	0.099 ^	0.118 *	0.104 ^	0.107 ^
	Reference=Stable marriage with stepfather				
6	Divorce from stepfather	0.051	0.064	0.037	0.028

Table 6.3. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score Where Spouse/Partner is Stepfather

Table 6.3 continued

Comparison		Model 1	Model 2	Model 3	Model 4
	Reference=Exit cohabitation with stepfather				
7	Divorce from stepfather	0.050	0.062	0.034	0.026
	Stable Relationship				
	Reference=Stable cohabitation with stepfather				
8	Remain single	0.036	-0.031	-0.018	-0.048 ^
	Reference=Stable marriage with stepfather				
9	Remain single	0.057 *	-0.028	-0.021	-0.058 *
10	Stable cohabitation with stepfather	0.105 *	0.024	0.002	-0.005

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for previous BPI score
Model 3 - Adds controls for child and maternal characteristics
Model 4 - Adds a control for HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

	Model 1	Model 2	Model 3	Model 4
Relationship Entrance				
Reference=Enter cohabitation with bio father				
Enter cohabitation with stepfather	0.043	-0.024	-0.077 ^	-0.074 ^
Reference=Enter marriage with bio father				
Enter marriage with stepfather	0.019	-0.004	-0.043	-0.038
Reference=Cohabitation to marriage with bio father				
Cohabitation to marriage with stepfather	0.146 **	0.108 *	0.091 ^	0.095 ^
Relationship Exit				
Reference=Exit cohabitation with bio father				
Exit cohabitation with stepfather	0.086 ^	0.115 *	0.104 ^	0.107 ^
Reference=Divorce from bio father				
Divorce from stepfather	0.049	0.063	0.038	0.030

Table 6.4. Negative Binomial Regression Models Predicting the Difference in the Log of the BPI Score by Relatedness to Mother's Spouse or Partner

Table 6.4 continued

Table 6.4 continued

	Model 1	Model 2	Model 3	Model 4
Stable Relationship				
Reference=Stable cohabitation with bio father				
Stable cohabitation with stepfather	0.096 ^	0.024	0.003	0.001
Reference=Stable marriage with bio father				
Stable marriage with stepfather	0.067 *	0.063 *	0.036	0.039

Model 1 - Includes maternal relationship transition types
Model 2 - Adds a control for previous BPI score
Model 3 - Adds controls for child and maternal characteristics
Model 4 - Adds a control for HOME score

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Chapter 7: Conclusion

This paper examines the effects of maternal relationship transitions on child behavior problems. It expands on previous research in this area by using a large longitudinal dataset, allowing me to examine the effects of changes in maternal relationships on child behavior problems while controlling for prior behavior problems and the potential mediating effect of parenting style. The NLSY79 child dataset also allows for an examination of effects by child age, sex, and race and allows for an exploration of the influence of the relatedness of the mother's spouse or partner to the child. The longitudinal nature of the data, as well as the availability of variables measuring child and maternal characteristics and parenting style, permits me to better distinguish causal effects from selection effects.

Does the effect of maternal entrance into a new relationship (cohabitation or marriage) differ significantly from the effect of remaining in a stable single mother family on child behavior problems?

My first research question examines the influence of maternal entrance into a new relationship relative to remaining in a stable single mother household on child behavior problems. I hypothesized that experiencing the transition from a single mother family to a married or cohabitating mother family would be positively associated with child

behavior problems and that this result would persist net of controls for previous behavior problems and background characteristics but would be mediated by parenting after the transition. I expected that such transitions would be particularly detrimental for children because, in this sample, they are more likely to involve a stepfather rather than the child's biological father. I find no support for this hypothesis for most of the children in the sample. A positive effect of experiencing entrance into cohabitation that is significant at $p<.05$ (one tailed) emerges once parenting is taken into account for children aged 10-11. These overall findings obscure sex and ethnic differences, however. Looking more specifically at results by sex, it appears that experiencing maternal entrance into cohabitation is detrimental particularly for pre-adolescent girls, aged 10-11. In fact, the positive effect of experiencing maternal entrance into cohabitation relative to remaining in a stable single mother household is consistent and significant across all four models for girls aged 10-11, suggesting that this effect is not a result of previous behavior problems or background characteristics and is not mediated by parenting and leading to a rejection of the first hypothesis of no significant difference for this group. This transition also is significant for Hispanic children aged 8-9, though it is difficult to draw conclusions from this finding because of the small sample size. This significant effect emerges when behavior problems at age 6-7 are controlled and persists when child and maternal characteristics and the HOME score are controlled.

Overall, there is mixed support for this hypothesis. While Brown (2006) found no significant effects of relationship transitions relative to remaining in stable single mother families, this study was based only on data from adolescents. My results indicate the

importance of expanding these analyses to include children from a variety of age groups and the differences that can emerge when sex and race-specific analyses are considered. Turning to the effect of experiencing a transition from a single mother family to a married mother family, for the oldest children in the sample, there is a significant negative effect of experiencing the transition to marriage, but this result is reduced to non-significance when prior behavior problems are controlled. Thus, there appears to be no causal effect of experiencing a maternal transition into a new relationship.

Does the effect of maternal entrance into marriage differ significantly from the effect of maternal entrance into cohabitation?

The second research question compares the effects of both types of relationship entrance. That is, does the *type* of relationship entrance matter for children? I hypothesized that experiencing maternal entrance into marriage would be negatively associated with behavior problems relative to experiencing maternal entrance into cohabitation but that this effect would be reduced to non-significance when maternal and child background characteristics were controlled. That is, I expected that such a significant effect would be a selection effect, in that the type of mothers who enter marriage may differ in some way from those who enter cohabiting unions. Such characteristics that affect the type of union that mothers enter may also have significant impacts on their children. I found no support for this hypothesis in any of the analyses, indicating that the effect of maternal relationship entrance does not vary depending upon the type of union entered.

Does the effect of the formalization of maternal cohabitation through marriage differ significantly from the effect of remaining in a stable cohabiting mother household?

The next research question explores the effect of maternal union formalization relative to remaining in an informal cohabiting union. I hypothesized that there would be no significant effect of experiencing maternal formalization of a cohabiting union relative to remaining in a stable cohabiting union on child behavior problems. I found mixed support for this hypothesis. For children who experience this transition between the ages of 6-7 and 8-9, 8-9 and 10-11, and 10-11 and 12-13, there is no significant effect on behavior problems. For children who experience the transition from a cohabiting to a married mother household between the ages of 4-5 and 6-7, there is a significant negative effect. However, this is entirely a selection effect, as it is reduced to non-significance when behavior problems prior to the transition are controlled.

It is important to note that sample sizes for this transition type are relatively small. When all age groups are combined, and the sample size is increased, a significant positive effect emerges. That is, having a mother who formalizes her cohabiting union through marriage is detrimental for children, relative to remaining in a stable cohabiting mother family. This effect is not a result of the background characteristics included in these models and is not mediated by parenting after the transition. Thus, this effect must be a result of variables not included in these models. The age-specific analyses also obscure the importance of considering the relationship between the mother's spouse and the child.

While experiencing the formalization of a cohabiting union into a married two-parent biological family has no impact on child behavior problems, making the transition to a married stepfamily has a significant positive impact on child behavior problems.

Does the effect of the break-up of a maternal cohabitation differ significantly from the effect of remaining in a stable cohabiting mother household?

This question explores the effect of experiencing the end of a maternal cohabiting union compared to the effect of remaining in a stable cohabiting mother household. I hypothesized that there would be no significant difference in the effect of experiencing the dissolution of a maternal cohabitation compared to remaining in a stable cohabiting household. This hypothesis is supported in my overall models. There are no significant effects of experiencing the break-up of a maternal cohabitation relative to remaining in a stable cohabiting mother household on child behavior problems.

However, the overall models obscure interesting racial and ethnic differences. Specifically, for the oldest children in the sample, aged 12-13, significant effects of experiencing the dissolution of a maternal cohabitation emerge when the models are run separately by race. For non-Black, non-Hispanic children there is a significant negative effect of maternal exit from cohabitation relative to remaining in a stable cohabiting mother household. For these children, making the transition to a single mother family actually is beneficial for children in terms of a reduction in behavior problems. In contrast, there is a significant positive effect for Black and Hispanic children. Previous research has shown that non-traditional households, such as cohabitation, are more

normative for minorities. Thus, it is likely that remaining in such a household arrangement would be less detrimental for these children than for their non-Black, non-Hispanic counterparts. These significant results persist net of controls for background characteristics and are not mediated by parenting.

Experiencing the dissolution of a cohabiting stepfamily appears to be particularly detrimental for children relative to remaining in a stable cohabiting stepfamily. In addition, the break-up of a cohabiting stepfamily is positively associated with behavior problems relative to the break-up of a cohabiting biological parent family. That is, there is something particularly harmful for children about the break-up of a cohabiting stepfamily that is not explained by any of the variables in these models. There is no similar effect of the break-up of a cohabiting biological family.

Does the effect of maternal divorce differ significantly from the effect of remaining in a stable married mother household?

The previous research question examined the effects of exit from cohabitation versus remaining in a stable cohabiting household. This parallel question examines the effects of maternal divorce relative to remaining in a stable married mother household. A large body of research shows the detrimental effects of divorce on children, and I hypothesized similar effects in this paper. Specifically, I hypothesized that experiencing maternal divorce would be positively associated with behavior problems compared to remaining in a stable married mother household. I expected that this effect would be reduced in strength when previous behavior problems were controlled and would be

mediated by parenting after the divorce. This hypothesis is supported for children who experience maternal divorce between the ages of 4-5 and 6-7, 6-7 and 8-9, and 8-9 and 10-11. There is a significant positive effect of maternal divorce for children in these age groups. These significant effects persist, but are reduced in strength, when previous behavior problems are controlled. Thus, some, but not all, of the detrimental effect of divorce results from behavior problems prior to the divorce. For the youngest children in the sample, the effect of divorce is reduced to non-significance when background characteristics are controlled. For these children, the effect of divorce on behavior problems is spurious. For children who experience divorce between the ages of 6-7 and 8-9, the effect remains significant when background characteristics are controlled, but it is mediated by parenting after the divorce. That is, divorce negatively impacts these children by affecting the parenting style that they experience after the divorce. The experience of divorce is most detrimental for pre-adolescent children, aged 10-11. The significant positive effect of divorce persists across all four models for children in this age group.

Racial and ethnic differences in the effects of maternal divorce are seen for children aged 8-9. As hypothesized, there is a consistent positive effect of maternal divorce on behavior problems for non-Black, non-Hispanic children that persists when background characteristics are controlled. This effect is not mediated by parenting style. In contrast, there is no significant effect of divorce for Black or Hispanic children, though the effect for Black children reaches significance with a negative effect when the HOME score is controlled.

Does the effect of maternal divorce differ significantly from the effect of maternal exit from cohabitation?

While the previous two research questions examined the effects of maternal relationship exit in comparison to the effects of stable maternal relationships, this question distinguishes the effects of the type of exit. That is, does the effect of divorce differ significantly from the effect of the dissolution of a maternal cohabitation? I hypothesized that experiencing maternal divorce would be positively associated with behavior problems relative to experiencing maternal exit from cohabitation. I expected that part of this effect would be a result of selection into initial union type and that it would be reduced in strength when background characteristics were controlled. Further, I expected that the end of a formal union potentially could be more stressful for mothers compared to the end of an informal union and that this stress could be reflected in parenting style. Thus, I hypothesized that the effect would be mediated by HOME score in Model 4.

I find no support for this hypothesis in any of the models. In fact, for the youngest children aged 6-7, a negative effect of divorce on BPI score persists across all four models. While I expected divorce to be more detrimental for children than the end of a cohabiting union, the opposite appears to be the case. Divorce actually appears to be more beneficial for the youngest children in the sample than the break-up of a cohabitation. The results suggest that there is some causal effect of divorce above and beyond any selection effects that contribute to the type of union or the level of behavior

problems that exists prior to the divorce or dissolution. This causal effect does not appear to operate through parenting after the dissolution of the relationship.

There is also a negative effect of divorce for the oldest children in the sample, but this effect operates differently for these children than for the younger children. For these adolescents, there is a negative effect of divorce in the first model, but this effect is reduced to non-significance when prior BPI score is controlled. This indicates that there is not a causal effect of divorce on behavior problems for these children but, rather, than any association is accounted for in the level of behavior problems that existed before the divorce. There is no significant difference in the effects of divorce and cohabitation for children aged 8-9 or 10-11.

Does the effect of remaining in a stable single mother household differ significantly from the effect of remaining in a cohabiting mother household?

While the previously discussed research questions look at the effects of maternal relationship transitions, the next three research questions examine the effects of remaining in stable household types. The first of these looks at the effect of remaining in a stable single mother family in comparison to the effect of remaining in a stable cohabiting mother household. I hypothesized that there would be no significant difference in these effects on child behavior, despite the potential benefits of a two-parent family versus a one-parent family. This hypothesis is consistent with Brown's (2004) cross-sectional findings.

In the overall models, this hypothesis is supported. I find no significant effects of remaining in a stable single mother family in models where children who remain in stable cohabiting households are the reference group at the $p<.05$ (two tailed) level. Further, I find no significant results in the sex- and race-specific analyses. In this instance, the presence of two parental figures in the household is not better than one, at least with regard to the level of behavior problems exhibited by the child.

Does the effect of remaining in a stable single mother household differ significantly from the effect of remaining in a stable married mother household?

The next research question also addresses the difference between a one-parent and a two-parent household, examining the effect of remaining in a stable single mother household relative to remaining in a stable married mother household. While I expected no difference in the effect of a one-parent and a two-parent household when comparing single mothers and cohabiting mother households, I hypothesized that there would be a significant positive effect of remaining in a stable single mother household relative to remaining in a stable married mother household. Further, I hypothesized that part of this effect would be spurious, given selection into these two household types and that any significant effect remaining after controlling for background characteristics would be a result of parenting differences between single and married mothers.

I find a consistent positive effect of remaining in a stable single mother on behavior problems for children aged 6-7, 8-9, and 10-11. This effect persists when controlling for antecedent variables but is reduced to non-significance for all three age

groups when the HOME score is controlled. When parenting style is taken into account, there is no significant difference in the effect of remaining in a stable single mother family relative to remaining in a stable married mother household. Therefore, it seems that less effective parenting may mediate the difference in behavior problems between children in single mother families and their counterparts living in married mother households.

While there is also a positive effect for the oldest children in the sample, this effect is reduced to non-significance when pre-existing child and maternal characteristics are controlled. Surprisingly, the effect of remaining in a stable single mother family becomes negative and significant when the HOME score is controlled. Thus, for children aged 12-13, when parenting is taken into account, remaining in a stable single mother family may be beneficial for children. One explanation for this may lie in racial and ethnic differences. When these models are run separately by racial and ethnic groups, there is, as hypothesized, a consistent positive effect on behavior problems of remaining in a stable single mother family when compared to remaining in a stable married mother family for non-Black, non-Hispanic children. This effect is reduced to non-significance when the HOME score is controlled. In contrast, for Black children a negative effect emerges when the HOME score is controlled, suggesting that living in a two-parent household may not provide the same benefits for these children as for their non-Black, non-Hispanic counterparts or that there is less of a negative impact of living in a single mother family for groups among which such households are more normative. This is consistent with the findings of Dunifon and Kowaleski-Jones (2002) who find that an

increase in the number of years spent in a single mother family is associated with an increase in delinquency for White children but not for their Black counterparts. In addition, part of this finding may be a result of the fact that, at all ages, Black children are more likely than their Hispanic and non-Black, non-Hispanic counterparts to reside in a stable married family with a stepfather, rather than a biological father.

Does the effect of remaining in a stable cohabiting mother household differ from the effect of remaining in a stable married mother household?

The final comparison of household types examines the effect of remaining in a stable cohabiting mother household relative to remaining in a stable married mother household. That is, does the type of stable two-parent family matter when it comes to child outcomes? I hypothesized that there would be a significant positive effect of remaining in a stable cohabiting household on child behavior problems but that this effect would be reduced in strength with the addition of background characteristics to the model, given selection effects in the type of unions that mothers choose. Additionally, I hypothesized that any remaining effect would be mediated by parenting.

Overall, I find that remaining in a stable cohabiting family is positively associated with behavior problems relative to remaining in a stable married mother family, but this effect generally does not operate as I hypothesized and varies by the age of the child. For the youngest children in the sample, remaining in a stable cohabiting mother household is particularly detrimental. This effect persists net of background characteristics and is not mediated by parenting style. It appears that this effect is driven by the non-Black, non-

Hispanic children in the sample, for whom there is a consistent positive effect of stable cohabitation on behavior problems. There is no significant effect for Black and Hispanic children who remain in a cohabiting mother household between the ages of 4-5 and 6-7.

While there is a significant positive effect of stable cohabitation for the other children in the sample, this effect is reduced to non-significance when prior behavior problems are controlled for children aged 8-9 and 12-13. That, is behavior problems do not appear to worsen over time for children in cohabiting households relative to those in stable married mother households. There is no significant difference between children in these two groups when previous BPI score is controlled. For children aged 10-11, parenting seems to be critical, as the inclusion of the HOME score reduces the effect of a stable cohabiting household to non-significance.

For the oldest children in the sample, racial differences again emerge in the effects of stable cohabitation. While there is a positive effect of remaining in a stable cohabiting mother household for non-Black, non-Hispanic children, there is a negative effect for their Black counterparts. This effect for Black children persists when background characteristics are controlled and is not mediated by parenting. Thus, even when selection characteristics and parenting are taken into account, Black teenagers actually fare better in stable cohabiting families than in stable married families, at least in terms of behavior problems. This effect should be explored in future analyses.

Summary of Results

In general, I find few significant effects of maternal relationship entrances on child behavior problems. For the youngest children in the sample, experiencing the formalization of a cohabiting union through marriage, relative to remaining in a stable cohabiting household, appears to reduce behavior problems. However, this effect is reduced to non-significance when previous behavior problems are taken into account. That is, these young children's behavior problems are neither getting worse nor getting better as their mothers enter new relationships or change their relationship status. Indeed, previous behavior problems have a consistent significant positive association with current behavior problems across all ages and all models (Appendix B). A similar effect can be seen in the impact of maternal marriage on teenagers. Maternal marriage seems to benefit teenagers, but this effect can be explained completely by the level of behavior problems that existed prior to the marriage.

There are two notable exceptions to the lack of impact of maternal relationship entrance. The first is the significant detrimental effect of maternal entrance into cohabitation for pre-adolescent girls. For these girls, there is a consistent positive effect of entrance into a cohabiting household relative to remaining in a stable single mother household that is not spurious and is not explained by parenting after the transition. Future research should examine other factors, such as the quality of the relationship between the mother's new partner and the child, and their impact on this association.

The second notable effect of maternal relationship entrance is the detrimental effect of formalization of a cohabiting stepfamily through marriage. Previous research

suggests that making the transition from a cohabiting household to a married household with the same partner should have little impact on children. However, these findings suggest that this is not the case when the mother's partner is the child's stepfather. Not only does the transition from a cohabiting stepfamily to a married stepfamily have a positive association with behavior problems, the formalization of a cohabiting stepfamily is detrimental for children compared to making the same transition with the child's biological father. This is another interesting and unexpected finding that should be explored in future research. One might expect that the transition to marriage would benefit children, given that the most stable and healthy cohabiting couples should be the ones that make the transition to marriage. Further, formalizing a cohabiting union should lead to a greater sense of responsibility for the child on the part of the mother's spouse and a greater potential for income-sharing.

Previous research shows a consistent positive effect of divorce on child behavior problems, and I find the same, in general. However, this effect appears to be causal only for children who experience divorce between the ages of 8-9 and 10-11. This appears to be a critical age for children, and even the inclusion of parenting in the model does not affect the significance of this association, though it lessens the size of the impact. For other children in the sample, the effect of divorce operates differently. For children who experience divorce between the ages of 4-5 and 6-7, the effect of divorce is spurious and is explained away when background characteristics are added to the model. The effects of these characteristics are shown in Appendix B. Maternal education is the characteristic that has the largest impact on child behavioral outcomes for these children.

The effect of divorce for children who experience this transition between the ages of 6-7 and 8-9 is mediated completely by parenting style, though this is not the case in the race-specific analysis. For non-Black, non-Hispanic children in this age group, the positive effect of divorce on behavior problems is not mediated by parenting.

A similar racial difference is seen in the impact of exiting cohabitation relative to remaining in a stable cohabiting family for teenagers, though it is difficult to draw any conclusions from these findings given the small sample size. Both of these findings underscore the importance of race- and ethnic-specific analyses. This is an important path for future research. The Children of the NLSY79 sample is particularly beneficial in this regard, given the oversample of minority women. This has been a limitation in much of the previous research.

Finally, the greatest number of significant effects is seen in the effects of stable single and cohabiting mother families relative to stable married mother families. There is a consistent positive effect of these family types on child behavior problems, though the effects operate in different ways. For most of the children in the sample, the detrimental effect of remaining in a stable single mother family is mediated completely by parenting. That is, it appears that one parent can be just as beneficial for children as two, if that mother parents in a positive way. The detrimental impact of cohabitation varies by the age of the child. It is particularly detrimental for the youngest children in the sample and is not mediated by parenting. For older children, the impact of cohabitation is due entirely to previous behavior problems and background characteristics. These findings

underscore the importance of sampling children of a variety of ages, unlike much of the previous research that has focused primarily on adolescents.

These findings also underscore the importance of considering the reference group in question. The earliest research in this area focused on the impact of maternal relationship types and transitions relative to stable married parent families. Indeed, when this is the reference group, there are consistent positive effects of other stable relationship types on child behavior problems. However, there are few consistent significant effects when comparing various transition types to one another or comparing the effects of transitions to remaining in stable cohabiting and single mother families. That is, it may not matter what type of non-normative household type children experience. All of these are detrimental in their own way relative to remaining with two married biological parents, with few exceptions.

Future Research

The current paper represents an extension of prior research on the association between maternal relationships and child outcomes. However, there are limitations to the current study. First, the NLSY79 and the Children of the NLSY79 are not representative of the U.S. population. As previously noted, minorities were oversampled in the original survey. Further, the oldest children in the child supplement were born disproportionately to young mothers, although this has become less of an issue over time. Although this is beneficial in that these mothers are more likely to enter non-normative family types and

experience relatively frequent relationship transitions, this means that these findings cannot be extrapolated to the U.S. population as a whole.

Second, household composition is measured at the time of each survey. Therefore, short-term unions, particularly cohabitations, that occur between surveys waves could be missed in these analyses. It is possible that such short-term cohabiting unions are more detrimental to children than the longer-term unions that are captured in these data. In addition, the fact that this is a biennial survey means that up to two years could pass between the time of the maternal relationship transition and the time that child behavior problems are measured. Thus, if children experience an initial change in behavior problems following a maternal relationship transition and subsequently adjust to the transition, returning to their "normal" level of behavior problems, this would not be captured in these data.

Third, the dependent variable in this study, child behavior problems, is based upon the reports of mothers. It is possible that mothers' subjective views of their children's behavior could vary depending upon outside factors, such as relationship problems. In addition, it is possible that child behavior problems actually impact maternal relationship transitions. For example, having a child with a high level of behavior problems could contribute to or speed up the time to a divorce or the dissolution of a cohabiting union.

Finally, the NLSY79 child data are limited to children who reside in households with their mothers. Thus, children with extreme behavior problems or those most affected by relationship transitions to the extent that they live elsewhere, are excluded

from this study. Additionally, children who reside with their fathers only or their fathers and a stepmother, are not included in these data.

Future research should address these limitations through the use of nationally representative longitudinal datasets that include detailed relationship measures. For example, it is critical to know the timing of relationship transition events relative to the timing of the outcome measure. This would allow for an examination of not only the initial impact of relationship transitions on child outcomes but how that child adjusts or does not adjust to the transition over time.

In addition, multiple measures of child behavior problems should be considered, including more objective measures of these outcomes. The current measure of behavior problems is based upon the report of the mother during one brief period of observation. It is possible, and quite likely, that a mother's relationship state could impact the way in which she perceives the behavior of her child. Additional measures of behavior problems, such as school reports, could alleviate this problem.

Finally, there are a number of variables missing from the current analyses that may impact the association between maternal relationships and child outcomes. For example, the current research does not consider the quality of the relationships between the mother and her spouse or partner or between the child and his or her parents. In this study, I consider the role of the relationship between the mother and her child, as measured by the HOME score. However, I have no measure of the relationship between the mother's spouse or partner and the child. Perhaps this could explain some of the detrimental impact of stepfamilies relative to biological parent families. Further, if adults

in cohabiting relationships have lower quality relationships than their married counterparts, this certainly could impact the children in that household.

Additionally, I do not consider the role of economic status in these analyses. Much of the previous research indicates that cohabitors have lower levels of income and are more likely to receive public assistance than their married counterparts. Although the NLSY includes a dichotomous measure of poverty status, this measure does not take a cohabiting partner's income into consideration. The survey asks women about the income of their partner, but large percentages of women are missing this data. Even if these data are available, the extent to which partners share their income with the mother and her children is unclear.

In closing, this research contributes to the growing body of knowledge on the effects of maternal relationship transitions on child behavioral outcomes, with a particular focus on cohabitation, the effects of pre-existing behavior problems, and the mediating role of parenting. Unlike most of the previous research in this area, my goal is to focus on the effects of various maternal union *types*, rather than on the number of transitions experienced by a child. Further, the nature of my data allows for an examination of children across age groups and permitted separate analyses by child sex and race/ethnicity. Nonetheless, there are enduring issues that deserve additional attention, particularly as families in the United States continue to become more complex. Foremost among these is a focus on both short and long-term effects of parental relationships. While my research focuses on a relatively brief two-year period between survey waves, methodological advances, including growth curve modeling, allow for analysis of longer-

term trajectories in child outcomes. Further, while my research examines the mediating role of parenting, it is important to consider other factors, such as parental conflict (Amato and Cheadle 2008), parenting stress (Cooper, McLanahan, Meadows, and Brooks-Gunn), and parental mental health (Meadows, McLanahan, and Brooks-Gunn 2008) that may affect child outcomes directly or may have an indirect effect through parenting style. Next, the current project examines only the influence of maternal relationship transitions. However, a growing body of research focuses on the impacts of multiple partner fertility among fathers (Bronte-Tinkew, Horowitz, and Scott 2009), paternal re-partnering (Gibson-Davis 2008), and father involvement (Carlson 2006) on child outcomes. Finally, as families become increasingly complex, it is important to consider how different children in the *same* families may be affected disproportionately by family structure, particularly if some children are the biological offspring of both spouses or partners and others are stepchildren (Halpern-Meekin and Tach 2008). No single methodology or dataset can allow for an exploration of all of these issues, but it is clear that researchers are recognizing the importance of the increasing diversity in American families.

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Appendix A: Items Comprising the HOME Score

Item Description	Age 3-5	Age 6-9	Age 10-14
Child has 10 children's books (20 for ages 10-14 years)	M	M	M
Mother reads to child 3 times a week or more	M	M	
Child taken to grocery store (once/week or 2-3 times a month)	M		
Child eats meal with both mother and father (-figure) once a day or more	M	M	M
Mother reports no more than one spank during past week	M	M	
Mom spontaneously vocalized to/conversed with child at least twice	I	I	I
Mother showed physical affection to child	I	I	I
Mother did not spank child	I		
Home or building environment is safe	I	I	I
Family subscribes to at least one magazine	M		
Child has use of record/CD player and at least 5 records/tapes/CDs	M		
Child helped to learn numbers at home	M		
Child helped to learn alphabet at home	M		
Child helped to learn colors at home	M		
Child helped to learn shapes and sizes at home	M		
Child has some choice in foods for breakfast and lunch	M		
TV is on in home less than 5 hours per day	M		
Non-harsh discipline if child hits (or swears/speaks in anger ages 72 months+)	M	M	M
Child taken to museum in past year	M	M	M
Child expected to make his/her bed		M	M
Child expected to clean up after spills		M	
Child expected to bathe him/herself		M	
Child expected to pick up after him/herself		M	M
Child expected to keep shared living areas clean and straight			M
Child expected to do routine chores such as lawn, help with dinner, dishes			M
Child expected to manage his/her own time			M
Musical instrument in home child can use		M	M

Items comprising HOME-Short Form
Adapted from CHRR (2006)
M=Mother Report; I=Interviewer observation

Item Description	Age 3-5	Age 6-9	Age 10-14
Child expected to clean his/her room		M	M
Family gets a daily newspaper		M	M
Child reads several times a week for enjoyment		M	M
Family encourages child to start and do hobbies		M	M
Child receives lessons or belongs to sports/music/art/dance/drama organization		M	M
Child taken to musical or drama performance in past year		M	M
Family visits with family or friends 2-3 times a month		M	M
Child spends time with father (-figure) 4 times a week		M	M
Child spends time with father (-figure) in outdoor activities once a week		M	M
When watching TV, parent discusses program with child		M	M
Mother encouraged child to contribute to conversation	I	I	I
Mother answered child's questions or requests verbally	I	I	I
Mother introduced interviewer to child by name	I	I	I
Mother's voice conveyed positive feeling about child	I	I	I
Home is not dark	I	I	I
Home is reasonably clean	I	I	I
Home is minimally cluttered	I	I	I

Items comprising HOME-Short Form (continued)
Adapted from CHRR (2006)
M=Mother Report; I=Interviewer observation

Appendix B: Negative Binomial Regression Coefficients for Control Variables

Transition Between Age 4-5 and 6-7

	Model 2	Model 3	Model 4
Time 1 BPI	0.073 ***	0.071 ***	0.069 ***
Number of children even born to mother		-0.011 **	-0.021 *
Black		0.013	-0.018
Hispanic		-0.036 *	-0.056 *
Male		0.072 ***	0.066 ***
Mother's age at birth of child		-0.006 **	-0.005 *
Mother has a high school education		-0.074 **	-0.056 *
Mother has some college education		-0.090 **	-0.055 ^
Mother has a college degree		-0.172 ***	-0.127 ***
HOME score			-0.020 ***

Transition Between Age 6-7 and 8-9

	Model 2	Model 3	Model 4
Time 1 BPI	0.073 ***	0.070 ***	0.069 ***
Number of children even born to mother		-0.004	-0.011
Black		-0.005	-0.038 ^
Hispanic		-0.030	-0.052 *
Male		0.060 ***	0.054 ***
Mother's age at birth of child		-0.007 ***	-0.006 **
Mother has a high school education		-0.066 **	-0.039 ^
Mother has some college education		-0.063 *	-0.021
Mother has a college degree		-0.176 ***	-0.119 ***
HOME score			-0.023 ***

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)

Transition Between Age 8-9 and 10-11

	Model 2	Model 3	Model 4
Time 1 BPI	0.073 ***	0.071 ***	0.070 ***
Number of children even born to mother		-0.001	-0.008
Black		-0.003	-0.033
Hispanic		-0.007	-0.026
Male		0.037 *	0.034 *
Mother's age at birth of child		-0.008 ***	-0.007 ***
Mother has a high school education		-0.075 **	-0.056 *
Mother has some college education		-0.094 ***	-0.065 *
Mother has a college degree		-0.145 ***	-0.096 **
HOME score			-0.019 ***

Transition Between Age 10-11 and 12-13

	Model 2	Model 3	Model 4
Time 1 BPI	0.070 ***	0.069 ***	0.068 ***
Number of children even born to mother		0.008	0.002
Black		0.039	0.006
Hispanic		0.009	-0.012
Male		0.017	0.005
Mother's age at birth of child		-0.020 ***	-0.019 ***
Mother has a high school education		-0.053 *	-0.028
Mother has some college education		-0.085 **	-0.049
Mother has a college degree		-0.096 *	-0.040
HOME score			-0.023 ***

***p<.001; **p<.01; *p<.05; ^p<.10 (two tailed)