
Maternal Cohabitation and Educational Success

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Despite the dramatic increase in children's experiences in cohabiting families, little is known about how living in such families affects children's academic success. Extrapolating from two theoretical frameworks that have been commonly used to explain the association between parental divorce and educational outcomes, the authors constructed competing hypotheses about the effect of maternal cohabitation on educational expectations, achievement, and attainment. The analysis of data from the National Survey of Families and Households shows that children who lived with cohabiting mothers fared exceptionally poorly and sometimes were significantly worse off than were children who lived with divorced or remarried mothers. The authors conclude that studies that have ignored cohabitation have probably overestimated the negative effects of divorce on educational outcomes. High levels of family instability that are associated with cohabitation may be one reason why children whose mothers cohabit do less well than do children with other types of family experiences.

Social scientists who have studied the family and those who have studied educational stratification have produced convincing evidence that parental divorce is negatively associated with educational success. Compared to children who live with both parents until adulthood, children from divorced families have lower educational expectations, poorer school attendance, and lower grades (Amato 2001; Astone and McLanahan 1991; Hanson, McLanahan, and Thomson 1998; Sun and Li 2001; Teachman et al. 1998). They are also less likely to grad-

uate from high school or to attend college (Biblarz and Gottainer 2000; McLanahan and Sandefur 1994; Ploeg 2002; Pong and Ju 2000; Sandefur and Wells 1999). Research has suggested that mothers' remarriage does not improve the chances of children's high school graduation and that children from stepparent families are only marginally better off than are those from single-parent families on many educational outcomes (Astone and McLanahan 1991; McLanahan and Sandefur 1994).

While the impact of parents' divorce and remarriage on educational success has been

widely investigated, the potential effect of maternal cohabitation has received much less attention (Seltzer 2000; Smock 2000). This situation is surprising, given that the proportion of children who live with a cohabiting parent is increasing rapidly. Bumpass and Lu (2000) documented that 6 percent of the births in the early 1980s were to cohabiting couples; by 1990, this figure had doubled to 12 percent. Furthermore, cohabitation rates are increasing among the divorced, many of whom have children (Bumpass, Raley, and Sweet 1995). Consequently, it has been estimated that 23.7 percent of the children who were born in 1979–80 would ever live with a cohabiting parent by age 14 (Graefe and Lichter 1999), compared with 40 percent of children in more recent estimates who would live with a cohabiting parent by age 16 (Bumpass and Lu 2000).

There are two reasons why researchers need to investigate the association between parental cohabitation and educational success. First, previous studies concluded that parental divorce contributes to lower educational attainment, but in these studies, cohabitation was an unmeasured factor, since most researchers usually took only remarriage, not repartnering, into account (Thomson, McLanahan, and Curtin 1992). Thus, it is not known whether the negative effects that have been attributed to living with a divorced mother are due entirely to experience in this family structure or if they may be partly due to maternal cohabitation. Second, examining the association between maternal cohabitation and educational success may help inform the debate on the reasons why parental divorce is associated with negative outcomes.

The study reported here used data from two waves of the National Survey of Families and Households (NSFH) to examine the association between maternal cohabitation and several indicators of educational experiences: parents' academic expectations and children's grades in school, high school graduation status, and postsecondary enrollment. Although a few prior studies have investigated the association between maternal cohabitation and children's educational experiences (Dunifon and Kowaleski-Jones 2002; Hao and

Xie 2002), we extended the analyses into early adulthood to see if there is an association with educational attainment. We investigated both high school graduation and postsecondary enrollment, which, in itself, is an advance, since most prior work on the impact of family composition on educational attainment has focused on high school graduation and experiences leading to this event.

In addition, by measuring educational outcomes at two points, during adolescence and during the transition to adulthood, we could assess whether the effects of family structure arise by temporarily reducing students' academic performance and therefore setting a lower educational trajectory. Alternatively, family effects may persist, continuing to exert an influence into adulthood net of earlier educational experiences. This distinction is important because the stratification system in schools may exacerbate the association between family structure and educational attainment. Educational systems are increasingly stratified, and mobility among educational trajectories is rare, especially in high school (Lee and Bryk 1988; Stevenson, Schiller, and Schneider 1994). Students who experience family disruption may be disproportionately set on a less-ambitious path because of a temporary reduction in their school performance or lesser parental supervision and attention to issues, such as course placement. Thus, even though they recover the ability to do well in school, they experience permanently reduced opportunities.

BACKGROUND

Social scientists have produced two kinds of explanations for the relationship between divorce and children's educational success: It may arise either directly from changes in family structure or from family processes that are associated with instability (Amato and Keith 1991). Arguments that focus on family structure generally take the position that experience in single-mother families causes lower academic achievement because of decreased resources available to children, such as time and money. In contrast, those that emphasize family stability posit that the association

between living in a single-parent family and educational success results from stressors that are associated with divorce and remarriage. Although these theories are not competing in the sense that both may be at least partly true, each would predict different relationships between maternal cohabitation and academic achievement and attainment. We outline these alternative hypotheses next.

Family Structure and Children's Access to Resources

On average, children in single-parent families have fewer resources than do children in two-parent families. Descriptive analyses have clearly shown that children of single mothers are more likely than are children of married mothers to be living in poverty or to experience economic hardship (Eggebeen and Lichter 1991; Hernandez 1993). This situation is not surprising, given that the same number of adults now support two households, reducing the economies of scale. Women's lower incomes relative to men, low levels of child support, and conflicts between the demands of employment and child care contribute further to the economic distress of single-mother families. Research has suggested that lower incomes account for at least half and possibly all the negative effects of parental divorce on educational attainment (McLanahan 1985; McLanahan and Sandefur 1994; Pong and Ju 2000).

Although the incomes of single-mother families never fully recover, the mothers' remarriage (or marriage) usually improves these families' economic position (Hanson et al. 1998). Economies of scale are restored, and two adults are available for child care. It is not clear, however, that children in stepfamilies benefit from their stepfathers' incomes as much as they would from their biological fathers'. For example, college expectations decline following divorce and do not improve following remarriage, suggesting that stepfathers are not as willing to provide financial support for postsecondary education (Astone and McLanahan 1991; Hanson et al. 1998).

Another parental resource that children who live with single mothers may have less of

is time with parents (Bianchi and Sayer 2000). Most of this decline results from a child no longer living with his or her noncustodial parent, but parental divorce may also affect time spent with the custodial parent. Although there is some debate about whether the time that single mothers spend with their children decreases (Bianchi and Sayer 2000) or increases (Hanson et al. 1998) after divorce, the research cited earlier has consistently shown that the total amount of parental supervision and involvement tends to decrease. Both these aspects of parenting (supervision and involvement) are related to educational achievement (Astone and McLanahan 1991; Baker and Stevenson 1986; Clark 1983; Muller 1995).

In sum, regardless of whether the focus is on time or money, children in single-mother families have access to fewer resources than do those who live with two biological parents. The resources of children in stepfamilies likely fall between the resources of those who live in single- and two-biological-parent families, since stepfathers do make some investment in their nonbiological children but, on average, less than biological fathers are likely to have made (Astone and McLanahan 1991; Thomson et al. 1992).

Family Instability, Conflict, and Stress

The "family instability" or "turbulence" perspective views the negative effects of divorce as the result of processes that surround this disruption. This argument suggests that divorce itself may not cause poorer academic performance; rather, parental conflict and other family processes that are associated with divorce may be the underlying cause of poor academic outcomes. Conflict is common prior to divorce and negatively affects children's well-being, regardless of whether the parents dissolve their marriage (Amato, Loomis, and Booth 1995; Cummings 1987; Grych and Fincham 1990). Divorce may also be associated with inconsistent parenting behaviors, particularly a breakdown in the hierarchy of the family, which can cause children distress. These factors could hinder children's ability to perform in other hierarchical

systems, such as schools (Gardner 1989; Nock 1988; Weiss 1979). In addition, divorce is often accompanied by residential and school mobility, which Astone and McLanahan (1994) suggested lead to children's poorer school performance. Remarriage may require additional residential mobility and adjustment to new roles and expectations that are produced by a new adult's entry into the household. There is strong empirical evidence that conflict and instability are difficult for children (Amato et al. 1995; Wu 1996; Wu and Thomson 2001). One reason why children in stepfamilies often do no better than children in single-mother families, despite their higher incomes, may be that their mothers' remarriage is another in a series of difficult transitions for the children (McLanahan and Sandefur 1994).

Clearly, there is evidence to support both the family structure and the family instability perspectives. However, a key difference between these perspectives is how they view remarriage. The former sees the mother's remarriage as restoring, albeit imperfectly, a more-desirable family structure. The latter views remarriage as another disruption, which should be associated with more-negative outcomes. Using this reasoning, the two perspectives would also predict different effects of maternal cohabitation on children's educational experiences and attainment.

Cohabitation, Family Structure, and Instability

From a family structure perspective, a cohabiting household resembles a household with a biological mother and a stepfather in that the children have available two adults who provide support, supervision, and financial resources. However, the family structure perspective would not predict that maternal cohabitation is as good as marriage because cohabiting mothers and fathers tend to have fewer resources (Manning and Lichter 1996; Morrison and Ritualo 2000), and children may receive a smaller share of them (Bauman 1999; DeLeire and Kalil 2002). Nonetheless, as long as live-in boyfriends contribute more to the households than they take away, the family structure perspective would predict

that children who live with cohabiting mothers are better off than are those who live with only their single parents.

Evidence suggests that cohabiting families do have more resources than do single-parent families (DeLeire and Kalil 2002; Manning and Lichter 1996; Morrison and Ritualo 2000). DeLeire and Kalil used data from the 1982–98 panels of the Consumer Expenditure Survey to show that among households with children, the mean annual income of cohabiting families is \$16,744, compared to \$11,070 for single-parent families and \$24,667 for married, two-parent families. Another study that investigated changes in income accompanying changes in family structure showed that although the annual incomes of cohabiting and married parents are not the same, both marriage and cohabitation result in roughly the same absolute gain in family income (\$6,000) (Morrison and Ritualo 2000). Less is known about whether cohabiting and married two-parent families allocate similar proportions of their incomes to goods that benefit children. Since cohabiters are less likely to pool their incomes (Bauman 1999), children may not benefit from the income of their mothers' partners. Nonetheless, research has indicated that cohabiting children have access to more resources than do children in single-parent families even after the fact that non-family household members tend not to share their incomes is accounted for (DeLeire and Kalil 2002).

Children in cohabiting families are also likely to have greater access to parental time than are those who live with single mothers. Research has suggested that mothers' cohabiting partners invest less in organized youth activities, but in some ways are similar to stepfathers, spending no less time with children eating, doing home activities, or going on family outings (Thomson et al. 1992). Thus, from the family structure perspective, living with a cohabiting mother should have no worse (and possibly better) consequences than should living with a single mother.

The family stability perspective would predict that living with a cohabiting mother is more harmful than is living with a single mother. Cohabitation is an unstable family form and

results in marriage only about half the time (Bumpass and Lu 2000), and unions that do not result in marriage often dissolve within a couple of years (Bumpass, Sweet, and Cherlin 1991). Moreover, marriages that are preceded by cohabitation are more likely to end in divorce, although the causality of this association is still debated (Axinn and Thornton 1992; Teachman 2003). Consequently, among children who have ever lived in a single-parent family, those whose mothers cohabit are more likely to experience multiple family transitions throughout childhood than are those whose mothers do not cohabit (Graefe and Lichter 1999). If mothers' transitions in and out of cohabiting unions are as difficult for children as are divorce and remarriage, we can expect maternal cohabitation to be associated with difficult transitions to adulthood.

Cohabitation is not only unstable, it also involves higher levels of conflict and abuse (Magdol et al. 1998; Stets and Straus 1990) and lower levels of relationship quality than does marriage (Brown and Booth 1996). Therefore, children whose mothers cohabit are likely to experience not only more transitions, but more family conflict. For these reasons, the family stability perspective would predict that children whose mothers cohabit may do less well than may those whose mothers remarry.

THE CURRENT STUDY

A rapidly growing body of research has investigated relationships between parental cohabitation and children's well-being. It has suggested that cohabiting families may be no better, and sometimes worse, than single-parent families for children's well-being. Research that has used "snapshot" measures of family experiences that characterize the child's family composition at a moment in time has shown that children in cohabiting families often are doing more poorly than are children in single-parent families. For example, children in cohabiting families are more likely than are children in single-parent families to experience emotional problems, lower school engagement, and an increased risk of being suspended or expelled (Brown 2002; Nelson, Clark, and Acs 2001).

Many of the differences that appear in descriptive statistics are reduced to statistical insignificance once other family background characteristics are controlled (Manning and Lamb 2003). However, some of the negative effects of experience in a cohabiting family persist net of controls when longitudinal (instead of snapshot) measures of family experience are used. Dunifon and Kowaleski-Jones (2002), using data from the National Longitudinal Survey of Youth, found that years spent in a cohabiting household have larger negative effects on scores on math tests than do years spent in a single-mother household, at least for whites. In addition, experience in a cohabiting household was associated with higher levels of delinquency for African Americans, whereas experience in a single-mother family was not. An analysis using data from the NSFH showed that time spent in cohabiting families has a larger positive (deleterious) impact on children's misbehavior than does time spent in a single-parent or stepparent family even in models that adjust for differences in other characteristics that differentiate among these types of families (Hao and Xie 2002). Taken as a whole, these results suggest that experience in a cohabiting family may be harmful, even relative to experience in a single-parent family.

We add to this body of literature by using the family structure and family stability perspectives to test competing hypotheses about the way in which cohabitation may affect children's educational experiences and attainment. We predict parents' educational expectations of their children, average grades, high school graduation status, and postsecondary enrollment using a refined measure of family structure that compares youths who ever lived with a divorced mother and youths who ever lived with a cohabiting mother to each other and to those who lived with both biological parents. If the effects of resources overwhelm the influence of family stability, then we would expect that children who live with a cohabiting parent to do better or, at least, no worse than do those who live with a single mother on all measures of academic success examined here. If family stability is more important, then children who experience cohabitation will fare worse than will those who live with a single mother.

DATA AND METHODS

We used data from the first two waves of the NSFH, a national sample of 13,008 adults aged 19 and older in 1987–88 (Sweet, Bumpass, and Call 1988). These data are excellent for our purposes because retrospective histories of the respondents' dates of marriage, cohabitation, separation, and divorce were collected in Wave 1, along with the birth dates of each of the respondents' children. The Wave 2 interview, conducted in 1992–94, asked the respondents about their marital and cohabitation experiences between the first and second interviews (Sweet and Bumpass 1996). Most U.S. children do not spend a significant amount of time living in households without their mothers. Thus, we have nearly complete histories of the household/family composition of the children of the NSFH female respondents. These children are the subjects of our analyses, but the NSFH respondents (the children's mothers) provided all the information about the children's family backgrounds.

In households with any children younger than age 18, the NSFH interviewers randomly chose one child as the "focal child" during Wave 1. The respondents were asked additional questions about the focal children, such as how often they had discipline problems and how well they performed in school. Our first analysis examined the association between maternal cohabitation and educational experiences during adolescence, on the basis of data from the 1,200 biological teenage focal children (aged 12–18) of the female respondents during the first interview, minus the 31 cases with missing information on mothers' transitions into and out of unions ($N = 1,169$). The second analysis examined the association between maternal cohabitation and educational attainment. In models predicting high school graduation, we restricted the sample to the 612 focal children who completed a Wave 2 interview and were at least age 19 at that time. When we estimated models predicting college enrollment, we further restricted our sample to include only the 551 respondents who completed high school, that is, received a diploma or general equivalency diploma (GED), to see whether there is an additional impact on

educational attainment beyond the effect on high school graduation.

Because a large minority (40 percent) of the eligible sample of focal children failed to complete the 1992–94 interviews, attrition clearly presents a problem for our ability to generalize from analyses using this sample. Additional analyses indicated that eligible children from single-parent or cohabiting families were less likely to have completed the Wave 2 focal child interviews. Children who had achieved less education by the second interview were also less likely to have been represented. This finding suggests that our estimates of the effects of experience living with a single or cohabiting mother on educational attainment may be downwardly biased. We address the implications of selection for our models in more detail in our discussion of the results.

Despite its problems, the NSFH is currently the best source of data for investigating the impact of cumulative family experiences, including maternal cohabitation, on educational success. One reason is that although some studies have provided measures that characterize children's household composition at a moment in time, few have provided data on children's experience in cohabiting households throughout their childhood and adolescence. Having data on experiences throughout childhood is important because prior research has shown that cumulative measures of family experience are better than are measures that characterize family composition at an arbitrary age (Hao and Xie 2002). In addition, because these data are longitudinal, we could measure household income prior to high school graduation. Finally, we had multiple measures of educational experiences, including postsecondary enrollment.

Measures

Education Two measures of children's educational experiences during adolescence came from mothers' reports that were collected during Wave 1: mother's *educational expectations* for the focal child and the child's *average grades*. Each mother was asked how much education she thought the focal child would complete: not finish high school, graduate from high school, graduate from voca-

tional or trade school, graduate from a two-year junior or community college, complete one to three years of college, graduate from college, or complete a master's degree or higher. Investigating mothers' expectations provided us with a marker of how parents encourage their children's educational and occupational goals. This type of encouragement increases the likelihood of success in adulthood (Schneider and Stevenson 2000-01). Each mother also reported the focal child's grades. This nine-category variable ranged from mostly A's to mostly F's and is the only measure of junior high or high school achievement available in Wave 1. Although grades are affected by behavior as well as achievement, they provide the best indicator of the 12–18-year-old NSFH focal children's school success.

In the second analysis, we used Wave 2 of the NSFH to investigate the association between family composition history and two indicators of educational attainment: *high school graduation* status and *postsecondary enrollment*. Our measure of high school graduation simply indicated whether the focal child had a high school diploma. Focal children who received or were working toward a GED or another certificate were classified as not having graduated from high school because the degrees are not equivalent in value to a diploma (Cameron and Heckman 1993).

Few studies have examined the association between family structure and postsecondary enrollment. Clearly, postsecondary enrollment is important because more adolescents today complete high school and pursue higher education than at any previous time in history (Snyder and Hoffman 2001), and most professional jobs require at least a bachelor's degree. Our measure of postsecondary enrollment was a dichotomous variable indicating no enrollment or enrollment in any postsecondary program, including vocational or business school, a two-year college, or a four-year college or university.¹ To estimate models predicting educational expectations and grades, we used ordinary least-squares (OLS) regression because both measures approximate continuous variables. To ensure that our results would not be affected by the choice of

statistical techniques, we also estimated these models using ordered logistic-regression procedures and found similar results to those presented here. Logistic regression is used to estimate models that predict educational attainment. Finally, we estimated our models using weighted data to account for the non-proportional sampling design.

Family Composition History Our measure of family experiences while growing up had five categories, which we labeled two-parent, always single, divorced, married stepparent, and cohabiting stepparent. Although it is not immediately obvious from the labels, these categories are mutually exhaustive and mutually exclusive. The most straightforward group is the "always single" category. It includes respondents born to a single mother who lived with a single parent until the 1987–88 NSFH interview (Wave 1) or age 18 (Wave 2). The two-parent category includes focal children who lived with both biological or two adoptive parents and never experienced a single-parent family. The divorce category includes those who were born into a two-parent family that dissolved and who never lived with a stepparent (either married or cohabiting). The married stepfamily category includes those who lived at some point with one biological parent who was married to someone who was not the biological parent but never lived with a parent and that parent's cohabiting partner. The cohabiting stepfamily category includes anyone who ever lived with a parent and that parent's cohabiting partner. The bottom row of Table 1 presents the sample sizes for each of these categories of family experiences.

In models predicting educational experiences at Wave 1, these measures characterize children's experiences from birth until the interview. In those predicting high school graduation and postsecondary enrollment by Wave 2, the measures indicate family experiences from birth until age 18. As we mentioned earlier, most prior work on the impact of parental cohabitation has used snapshot measures of family composition, which indicate the child's family composition at the time that the outcomes were measured. We prefer our approach to one that uses house-

hold status at the time of the interview because the importance of the impact of family structure is derived from its persistent effects. Hao and Xie (2002) compared measures that capture cumulative family experiences to snapshot indicators and showed that snapshot measures produce misleading results. Furthermore, because we included cohabitation prior to the interview, our sample is not biased in favor of long-term cohabiters, the group we might expect to experience the least-negative effects if the stability hypothesis is true.

Despite the strength of our approach, the internal heterogeneity of our family structure categories is still an issue that clouds our ability to make clean tests of all possible contrasts. For example, those in a cohabiting stepfamily may also have experienced a married stepfamily. If remarriage brings benefits that are not realized in cohabiting families, our inability to separate experience in cohabiting stepfamilies from married stepfamilies may lead to an underestimate of the negative effects of cohabitation. Perhaps more important, some stepfamilies are formed through a single transition, for example, when children who were born to an unmarried mother experience her marriage. Other stepfamilies could involve children that experienced households with multiple different stepfathers. Our sample was too small for us to make distinctions within these different types of families, but future analyses using different data sets should do so to the extent that they are able.

Control Variables We did not attempt to prove a causal argument about the effects of maternal cohabitation on children's education. Rather, we sought to examine the overall associations and to provide a starting point for research in this important area. Nevertheless, because cohabitation and educational attainment are both associated with socioeconomic status, we investigated whether any associations that are found between maternal cohabitation and educational attainment persist net of standard controls for family background characteristics, including ethnicity (white, black, Hispanic, or other), child's sex, grade level, whether the

child was in school at Wave 1, mother's educational level (less than high school, high school, some college, or college graduate), and household income (in quintiles). Household income, earnings, dividends, and other sources were measured in the first interview, when the child was aged 12–18. We divided the sample distribution on income into quintiles with a dummy variable representing each quintile. We preferred this approach to using a simple continuous variable because the effects of income may be nonlinear. In models that predict parent's educational expectations and grades at the first interview, we controlled for the child's grade level. In models that predict high school graduation and college attendance, we controlled for age.

RESULTS

Descriptive Statistics

Table 1 presents descriptive information about the dependent variables and how the distributions on these measures differ by family composition history. Children from two-parent families are the most advantaged in terms of educational experiences. Almost 60 percent of the mothers in two-parent families, versus 40 percent of the mothers in cohabiting stepfamilies and 36 percent of the mothers who were always single parents, expected that their children would at least graduate from college. With regard to grades, children in cohabiting stepfamilies, as well as those who always lived with a single parent, had the lowest grades, while those from two-parent families had the highest grades. In fact, the grades of the children in cohabiting stepfamilies were significantly lower than the grades of children in divorced families. This finding provides indirect support for the family stability perspective. The fact that the children who were always in a single-parent family were also doing poorly supports the family structure perspective.

We found a similar pattern for educational attainment by Wave 2. Ninety percent of the children from two-parent families graduated from high school, and 76 percent had some

Table 1. Distribution on Variables Indicating Educational Outcomes, by Type of Family

Variables	Two-Parent Family		Single-Parent Family		Stepparent Family		Unweighted N
	Always	Divorce	Always	Divorce	No Cohabitation	With Cohabitation	
<i>Wave 1</i>							
Parent's Educational Expectations for Child							1,168
Not finish high school	2		6	2	4	3	
Graduate high school	15		21	24	24	27	
Graduate from vocational or trade school	10		18	7	7	11	
Graduate from a two-year junior or community college	10		13	10	10	11	
Complete one to three years of college	4		6	7	12	9	
Graduate from a four-year college or university	45		32	33	31	30	
Complete a master's or doctorate degree	14		4	15	11	10	
Chi-square test							
Mean	4.9		4.0 ^a	4.6 ^b	4.4 ^a	4.2 ^a	
Grades							
Mean (9-point scale)	7.0		6.4 ^a	6.6 ^a	6.7	6.3 ^a	1,100
<i>Wave 2 (at least age 19 at Wave 2)</i>							
Educational Attainment							612
High school graduation	90 ^a		79	89	92	79	
Any postsecondary education	76 ^b		58	74	73	59	
Directly to a four-year college	28 ^a		13	27	28	22	
Educational attainment among high school graduates, including GED							551
Any postsecondary education	80 ^a		57	79	79	67	
Directly to a four-year college	28 ^a		17	26	29	24	
Maximum Unweighted Sample Size	452		77	260	135	244	1,168

Note: Analyses are weighted to account for the complex sampling design and sample attrition.

^aSignificantly different from two-parent families, $p < .05$.

^bSignificantly different from two-parent families, $p < .10$.

postsecondary education. The children who always lived with a single parent and those who lived in cohabiting stepfamilies had lower levels of educational attainment; only 79 percent of both groups graduated from high school, and less than 60 percent had any postsecondary schooling. Those who experienced parental divorce, as well as those from stepparent families with no cohabitation, did not have lower levels of educational attainment than did those from two-parent families. These results suggest that maternal cohabitation with a stepparent is associated with less academic success than is living with a divorced mother who never cohabits (or even remarries), despite the fact that cohabiting unions more closely resemble married two-parent households in terms of family structure and available resources (time and money). In fact, children in cohabiting stepfamilies do as poorly as those who always lived with a single parent, a group with much fewer resources, as we show in Table 2.

Table 2 presents the percentage distribution on other family background characteristics by family experience. Race is strongly associated with family composition. Overall, the sample was three quarters white, 14 percent black, and 9 percent Hispanic. Blacks were underrepresented in two-parent families and overrepresented in all other family types, especially in the always-single category, in which the majority (60 percent) of the children were black, but it is also true for the divorced families and the two types of stepfamilies.

Mother's education and household income at the time of the Wave 1 interview are also strongly associated with family experiences. The general pattern of results suggests that children who always lived with a single parent are substantially more disadvantaged than are those with other family experiences. Among the children who were always in a single-parent family, over half were in the lowest income quintile. Both children in cohabiting stepfamilies and those in divorced families were overrepresented in the low-education and low-income groups, although not as much so as those who always lived in single-parent families. In fact, in terms of income, children in cohabiting stepfamilies

are more advantaged than are those in divorced families. A quarter of those in married or cohabiting stepfamilies, compared to only 6 percent of those in divorced families, were in the fourth or fifth income quintile. In sum, given that children who have always lived in single-parent families are clearly more disadvantaged than are those in cohabiting stepfamilies, we expect that more of the disadvantage that is associated with always being in a single-parent family is due to the fact that this type of family has fewer economic resources.

Educational Experiences: Wave 1

Table 3 presents the results from a weighted OLS regression model predicting the mother's educational expectations and the focal child's grades at the time of the first interview. Following common practice, we present models with two-parent families as the reference group. However, because our hypotheses are predictions about how children who experience maternal cohabitation compare to others, we note when cohabiting stepfamilies are significantly different from the other groups. Before controls are entered, living in a cohabiting stepfamily is associated with lower educational expectations than is living in a two-parent family, but not when compared to living in other households. Once we controlled for background characteristics, we found that children from cohabiting stepfamilies are disadvantaged relative to those who experience their parents' divorce. In addition, those who experience their mothers' divorce are similar to those who live in a two-parent family throughout childhood.

The analysis predicting grades at Wave 1 shows even larger differences between divorced and cohabiting stepfamilies. In Model 1, which includes controls for other family background characteristics, children from cohabiting stepfamilies have poorer grades than do children from two-parent, divorced, or married stepparent families. In fact, although the coefficient is not statistically significant by conventional standards, the pattern of the effects suggests that children in cohabiting stepfamilies do even less well than do those who always lived in a single-parent

Table 2. Percentage Distribution on the Control Variables, by Family Experience

Variables	Single-Parent Family		Stepparent Family		Total	
	Two-Parent Family	Always	Divorce	No Cohabitation		With Cohabitation
<i>Race</i>						
White	83	34	62	67	69	76
Black	6	60	25	23	22	14
Hispanic	8	5	11	10	7	9
Other ^a	2	0	2	0	2	2
<i>Child's Sex</i>						
Male	45	47	44	53	51	53
Female	55	53	56	47	49	47
<i>Mother's Education</i>						
Less than high school	16	42	24	21	22	19
High school graduate	49	38	40	40	48	47
Some college	19	19	26	28	22	21
College graduate	15	1	10	11	8	13
Missing	1	0	1	0	0	1
<i>Not in School</i>						
<i>In School</i>	4	7	6	7	7	5
	96	93	94	93	93	95
<i>Income</i>						
< 20%	8	55	30	23	20	15
20–39%	13	16	24	17	22	16
40–59%	15	5	15	15	14	14
60–79%	22	2	4	14	13	17
80%+	21	0	2	10	12	16
Missing ^a	21	22	26	21	19	21
<i>Sample Size</i>	452	77	260	135	244	1,168

^a The other category includes those who are not white, black, or Hispanic, including Asians and Native Americans. The missing income category includes those who refused to answer the question about household income.

family once other family background characteristics are controlled. In addition, in Model 1, the contrast between children from two-parent families and those from divorced, married stepparent, and even always-single-parent families is not statistically significant. Children from cohabiting stepfamilies are clearly outliers.

Some may be surprised that we found that residing in a single-mother family is not associated with educational expectations or

grades, given previous studies that used the NSFH and other data sources that indicated that living with a single parent is associated with lower grades even net of some controls (Mulkey, Crain, and Harrington 1992; Thomson, Hanson, and McLanahan 1994). However, these effects are small (Heiss 1996) and may be partly attributable to having lived with a cohabiting mother or with a mother who was always single. Similar to our results, Thomson et al. (1994), using data from the

Table 3. OLS Estimates for a Model Predicting Parent's Educational Expectations and Grades at the First Interview

Variables	Mother's Educational Expectations				Grades			
	Model 0		Model 1		Model 0		Model 1	
	<i>B</i>	<i>p</i> -value	<i>B</i>	<i>p</i> -value	<i>B</i>	<i>p</i> -value	<i>B</i>	<i>p</i> -value
<i>Family Experiences (two parent)</i>								
Always single	-.85	.00	-.17	.53	-.55	.02	-.33	.19
Divorced	-.31	.07	.02	.90 ^a	-.37	.02 ^b	-.23	.13 ^a
Married stepfamily	-.47	.02	-.32	.09	-.22	.21	-.24	.17 ^a
Cohabiting stepfamily	-.64	< .01	-.40	.01	-.72	< .01	-.68	< .01
<i>Race-Ethnicity (non-Hispanic white)</i>								
Black			.37	.02			.29	.05
Hispanic			.31	.11			.39	.03
Other race			.34	.37			.68	.05
Female			.19	.05			.50	< .01
Grade level			-.01	.60			-.06	.01
Not in school			-1.77	< .01				
<i>Mother's Education (less than high school)</i>								
High school			.77	< .01			.33	.01
Some college			1.47	< .01			.62	< .01
College graduate			2.10	< .01			1.18	< .01
Missing			1.48	.02			.10	.86
<i>Income (lowest quintile)</i>								
20–39%			.27	.14			.17	.30
40–59%			.35	.07			.36	.05
60–79%			.66	< .01			.37	.04
80%+			1.18	< .01			.55	.00
Missing			.42	< .01			.03	.85
<i>Unweighted Sample Size</i>								
<i>R</i> ²			1,161	1,161			1,100	1,100
			.02	.22			.03	.13

Note: Analyses are weighted.

^a Significantly different from cohabiting stepfamilies, $p < .05$.

^b Significantly different from cohabiting stepfamilies, $p < .10$.

NSFH, showed that being in a currently cohabiting household has a substantially larger negative association with academic performance than has living in a single-mother household. In analyses not shown, we predicted grades using a family structure variable that ignored cohabitation and reassigned those in the cohabiting stepfamily into the divorced and married stepfamily categories. We found, similar to other studies, that parental divorce and remarriage are associat-

ed with lower grades than is living with both parents. This finding suggests that prior work has overestimated the detrimental effects of parental divorce (and remarriage) on academic achievement partly because mothers' cohabiting relationships were overlooked.

Educational Attainment: Wave 2

The next stage of our analysis investigates the impact of family composition history on edu-

cational attainment. As we mentioned earlier, we lost many cases when we used the second wave of data. To identify whether and how much attrition affected our results, we reestimated the models in Table 3 using the truncated sample. Prior to this analysis, we expected that the contrast between those in two-parent families and other groups would be smaller in the truncated sample because those from nontraditional family backgrounds and those who achieved lower levels of education would be more likely to leave the study. The results (not shown) confirmed our expectations. Compared to the full sample, in the truncated sample the contrast between two-parent families and other types of families is generally smaller. The truncation also sometimes affected the contrast between cohabiting stepfamilies and other types of families. For example, in Model 1, which predicts grades, estimated with the full sample, cohabiting stepfamilies had significantly lower grades than did those in divorced or married stepfamilies, as indicated by the "a" superscript in Table 3. These contrasts are no longer statistically significant in the truncated sample (results not shown). We therefore conclude that sample attrition downwardly biased our estimated association between "alternative" family type and educational outcomes, especially among children whose mothers cohabited.²

Table 4 shows odds ratios estimated from models predicting high school graduation. In the baseline model, children from cohabiting stepfamilies have lower odds of graduating from high school than do children from two-parent, divorced, or married stepfamilies. Children from single-parent or married step-parent families are no less likely to complete school than are those from two-parent families. Again, this finding is surprising because previous research has clearly shown that being in a single-parent family is associated with a greater risk of dropping out of high school. Differences between our approach and previous research may account for the discrepancy. Our measures distinguish cohabitation from single-parent experiences. Furthermore, our models were estimated using a sample that was biased by attrition. We cannot directly test this second possibility,

but we can examine what our results would be if we ignored cohabitation. The pair of columns under the "alternative" heading show the results of a model that uses a measure with those in the cohabiting category reassigned to the divorced or married step-family categories, depending on whether the mother ever formally remarried. In this model, the effect of parental divorce is still not significant ($p = .15$), but the exponentiated coefficient is less than 1 (.67), suggesting that ignoring cohabitation leads to an overestimated effect of parental divorce. The lack of a significant effect is probably due to the bias introduced by sample attrition. Despite this bias, the estimated negative effect of cohabitation is large and significant in the baseline model.

Model 1 includes all the control variables except income, educational expectations, and grades. Children who experienced maternal cohabitation still have lower odds of graduation than do those who grew up in a two-parent, divorced, or married stepfamily. Model 2 demonstrates that these differences are unrelated to income at the first interview. When we controlled for mother's educational expectations and grades at Wave 1 (Model 3), we found that children from cohabiting families no longer have significantly lower odds of graduating from high school than do children from two-parent families, although the odds ratio is still substantially less than 1. This finding suggests that the impact of maternal cohabitation is at least partly explained by earlier educational experiences and maternal expectations. We interpret this finding in the Discussion and Conclusion section.

The family instability perspective predicted that children from cohabiting stepfamilies would have poorer educational outcomes than would children in divorced and always-single-parent families. This expectation receives some support. The size of the estimated negative effects is larger for cohabiting stepfamilies than for divorced or married stepfamilies, and this type of family is the only one that is significantly different from two-parent families. However, the support is only tentative because the difference between cohabiting stepfamilies and divorced families

Table 4. Estimates from and Logistic Regression Model Predicting High School Graduation

Variables	Baseline		Alternative		Model 1		Model 2		Model 3	
	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value
<i>Family Experiences</i>										
<i>(two parent)</i>										
Always single	.42	.21	.42	.21	.54	.40	.56	.45	.48	.35
Divorced	1.00	1.00 ^a	.67	.15	.93	.85 ^a	1.01	.99 ^a	.97	.94
Married stepfamily	1.24	.69 ^b	.91	.83	1.24	.70 ^a	1.34	.60 ^a	1.69	.37 ^b
Cohabiting stepfamily	.41	.01			.37	<.01	.40	.01	.55	.12
<i>Race-Ethnicity (non-Hispanic white)</i>										
Black					.89	.78	.89	.77	.74	.51
Hispanic					1.01	.98	1.06	.91	.86	.77
Other race					.12	.02	.13	.03	.05	<.01
Female					2.03	.01	1.96	.02	1.66	.09
<i>Mother's Education</i>										
High school					2.56	.01	2.40	.01	2.54	.01
Some college					2.88	.01	2.58	.02	2.31	.06
College graduate					7.75	.00	6.39	.01	4.32	.04
Missing					.35	.25	.35	.26	.18	.17
Age					1.12	.15	1.12	.16	1.23	.02
<i>Income (lowest quintile)</i>										
20–39%							.63	.34	.72	.50
40–9%							1.50	.39	1.55	.38
60–79%							1.22	.69	1.15	.79
80%+							1.13	.80	0.77	.61
Missing							.83	.68	1.18	.74
<i>Grades at Wave 1</i>										
Mother's Expectation's at the First Interview							1.64	<.01	1.14	.15

Note: Analyses are weighted.

^a Significantly different from cohabiting stepfamilies, $p < .05$.

^b Significantly different from cohabiting stepfamilies $p < .10$.

is not statistically significant. Moreover, judging by both the size and the significance of the coefficients, children in always-single-parent families and children in cohabiting stepfamilies both experience poor outcomes. Thus, in our analysis of high school graduation, we found support for both the family instability and the family structure arguments.

Table 5 investigates the association between family experiences and postsecondary enrollment. Across all the models, those who experience their parents' divorce or remarriage without cohabitation are not significantly different from those who grow up in a two-parent family. Again, this is likely a biased estimate because of sample attrition. Nonetheless, children from cohabiting stepfamilies have lower odds of postsecondary enrollment (given high school graduation) than do those from two-parent families. The difference between cohabiting stepfamilies and two-parent families persists after demographic background, including income, is controlled. Moreover, although the difference between cohabiting stepfamilies and divorced families is not statistically significant, the pattern of results suggests that, in support of the instability perspective, children in cohabiting stepfamilies have poorer educational outcomes than do children in divorced families. In support of the family structure perspective, the pattern of results also suggests that children who have always lived with a single parent also have poorer educational outcomes.

In sum, compared to those in two-parent families, children from cohabiting stepfamilies have a lower probability of graduating from high school and, if they do graduate from high school, have a lower probability of enrolling in any postsecondary program. In addition, although the contrast is not statistically significant, the pattern of results suggests that children whose mothers cohabited will attain less education than will children from divorced families. Taken altogether, these results indicate that the negative effects of family instability overwhelm the positive effect of any increase in resources that accrues from moving from a divorced family into a cohabiting stepfamily, possibly because

cohabitation is not associated with a great improvement in resources, but is associated with a marked increase in family instability. The large negative association between always living in a single-parent family and educational outcomes, especially postsecondary enrollment, suggests the importance of family structure and the greater resources that children in two-parent families enjoy.

DISCUSSION AND CONCLUSION

This study examined whether maternal cohabitation is associated with poor educational outcomes, as suggested by the family instability hypothesis, and found that it does. Table 6 summarizes our findings on how children in cohabiting stepfamilies compare to those in other types of families. Living with a cohabiting stepparent is always associated with poorer outcomes than is living in a two-parent family and, for some outcomes, with poorer outcomes than is living with a divorced or remarried parent. The fact that experiencing maternal cohabitation appears to differ from experiencing divorce or remarriage without cohabitation means that researchers who investigate how family processes influence educational attainment should distinguish among these different households because children in cohabiting families appear to be a particularly disadvantaged group. Research that does not distinguish among different forms of unmarried-mother families is likely to assign the negative effects of cohabitation to experience in a single-parent family.

This work should not be taken as evidence that cohabitation causes a decrease in children's educational success. Unmeasured factors, such as neighborhood characteristics, may affect both cohabitation and children's school performance. However, our results also suggest that family instability has negative effects on educational outcomes over and above the negative effects that are due to the lower resources available to children in cohabiting stepfamilies. Of course, resources matter, as evidenced by the fact that those who always live with a single parent also have lower educational attainment. However, whereas being

Table 5. Estimates of the Association Between Family Composition and Postsecondary Enrollment Among Those with a High School Degree or GED

Variables	Baseline		Model 1		Model 2		Model 3	
	Odds Ratio	p-value						
<i>Family Experiences (two parent)</i>								
Always single	.28	.10	.31	.24	.35	.34	.27	.31
Divorced	.87	.71	.79	.45	.89	.85	.84	.78
Married stepfamily	.78	.60	.73	.47	.82	.75	.85	.92
Cohabiting stepfamily	.47	< .01	.47	< .01	.52	.01	.58	.07
<i>Race (non-Hispanic white)</i>								
Black			1.00	.96	1.18	.73	1.06	.91
Hispanic			1.19	.65	1.42	.44	1.37	.52
Other race			.23	.01	.29	.01	.16	< .01
Female			1.38	.03	1.30	.06	1.14	.23
<i>Mother's Education (less than high school)</i>								
High school			.74	.80	.74	.86	.64	.87
Some college			2.09	< .01	1.77	.01	1.30	.07
College graduate			9.79	< .01	8.39	< .01	4.88	< .01
Age			.98	.58	.97	.61	1.01	.21
<i>Income (lowest quintile)</i>								
20–39%					1.08	.80	1.12	.83
40–59%					.77	.56	.68	.50
60–79%					1.25	.26	1.20	.32
80%+					2.51	.03	2.30	.10
Missing					.65	.10	.64	.19
<i>Grades at Wave 1</i>								
Mother's Expectation's at the First Interview							1.23	< .01
							1.24	.02

Note: Analyses are weighted. None of the categories is significantly different from cohabitating stepfamilies.

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Table 6. Summary of Findings on How Children in Cohabiting Stepfamilies Compare to Those with Other Types of Families or Family Experiences

Focal children who lived with a cohabiting stepparent fare significantly worse than those who lived with	Mother's Educational Expectations	Wave 1 Grades	High School Graduation	College Enrollment
<i>Two Parents</i>				
No controls	Yes	Yes	Yes	Yes
Family background controls	Yes	Yes	Yes	Yes
<i>Divorced Parent</i>				
No controls	No	Yes	Yes	No
Family background controls	Yes	Yes	Yes	No
<i>Married Stepparent</i>				
No controls	No	No	Yes	No
Family background controls	No	Yes	Yes	No
<i>Single Parent</i>				
No controls	No	No	No	No
Family background controls	No	No	No	No

from a divorced or remarried-parent family is not significantly associated with lower educational attainment, being from a cohabiting stepfamily is. The lack of an effect for those in the divorced and remarried categories may be the result of sample selection bias (as well as a small sample size), but sample selection should also downwardly bias the effects of being from a cohabiting stepfamily. Yet the negative effects of this family experience are statistically significant, and the size of the coefficients is larger for this group than for the divorced category. We believe that this result stems from the high levels of family instability that children in cohabiting stepfamilies experience (Raley and Wildsmith 2004).

Early in this article, we suggested that educational institutions may be structured in a way that makes it difficult for students to recover from a temporary reduction in academic performance surrounding family instability. That is, children who experience family instability perform poorly in school and consequently are placed in lower academic strata. Students in these lower strata are exposed to less-engaging material and experience reduced opportunities for postsecondary enrollment. However, after the eighth grade, it is difficult to change strata, meaning that a temporary reduction in academic ability that is due to family instability in late childhood may result in long-term negative effects on educational outcomes. These effects

may arise more because of the rigidity of the stratification system in high school than because of a long-term reduction in a child's academic ability. If this description is accurate, we would expect that controlling for grades or parents' educational expectations at Wave 1 would eliminate the association between family experiences and educational attainment. If family disruption produces a long-term reduction in academic ability, we would expect the effects of family experiences to persist net of controls for earlier educational experiences. Table 5 shows that controlling for Wave 1 grades and educational expectations reduces to insignificance the association between maternal cohabitation and levels of attainment. At the same time, there is some evidence that the effects of family experiences (or unmeasured variables that are associated with family experiences) persist and continue to exert an influence on academic ability long after the family disruption. Although the coefficients are not significant, the pattern of effects suggests that cohabitation is associated with lower levels of attainment net of controls for Wave 1 grades and educational expectations.

Furthermore, in a model predicting any college enrollment among a sample that included respondents who did not graduate from high school, the coefficient contrasting cohabiting and two-parent families is statistically significant ($p = .07$) even after controls

for Wave 1 educational experiences were included. Consequently, it is possible that some of the negative association between mother's cohabitation and educational attainment arises because of a temporary negative effect on school performance, combined with a rigid stratification system within high schools. Future analyses, using larger samples and a greater array of measures of early educational experiences, should investigate whether the impact of maternal cohabitation on educational attainment is completely or only partially mediated by educational experiences in early adolescence.

Another important step for future research is to improve measures of family composition history to include more information about family instability and related family processes. The data set that we used for this analysis included the age of the child at each transition and the number of transitions into and out of marriage and cohabitation, and we examined measures that counted the number of family transitions that the children ever experienced. Unfortunately, our sample was simply too small to be able to distinguish the effects of any transition from the effects of multiple transitions. However, no superior, alternative data sources currently exist (Smock 2000). To gain a better understanding of the effects of family experiences on educational outcomes and how they are influenced by the structure of educational intuitions, not only do our analyses need to be refined, but social analysts need to design studies to capture these important dimensions of social life.

NOTES

1. Because this dummy variable captures a wide variety of types of schools, we also investigated a measure indicating enrollment in a four-year university program. The results are similar regardless of the measure used, although the reliability of the estimates for the second measure is poorer because of the small number of respondents who enrolled in four-year universities ($N = 157$).

2. We estimated selection models to attempt to account for this bias. Our selection equation included all the control variables, as

well as an index indicating how cooperative the respondent was during the first interview. Unfortunately, the selection model produced counterintuitive results in that accounting for selection *decreased* the size of the coefficients for being from a single-parent or a cohabiting family. Given the controversy surrounding selection models, which sometimes do more harm than good (Stolzenberg and Relles 1990), and the counterintuitive results, we chose not to use that modeling approach. Instead, we take into account the likely direction of the bias when we interpret our results.

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