The Fragile Families and Child Wellbeing Study changed its name to The Future of Families and Child Wellbeing Study (FFCWS). Due to the issue date of this document, FFCWS will be referenced by its former name. Any further reference to FFCWS should kindly observe this name change.

Young Children's Behavioral Problems in Married and Cohabiting Families

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Abstract

We use data from the Fragile Families Study (N = 1,370) to examine child behavioral problems among children born to cohabiting and married parents who remain together until the child is age 3. The primary objective of the analysis is to determine how much of the difference in child outcomes at age 3 can be accounted for by differences in family economic resources, parental relationship quality, and parental health. We also investigate whether parents' marriage after the child's birth improves child outcomes. Results show that children born to married versus cohabiting parents have fewer reported behavioral problems at age three, and that differences in parental economic, interpersonal, and health resources can account for between 30% to 50% of the differences in child outcomes at age 3. Marriage following a cohabiting birth, however, is not associated with fewer child behavioral problems.

Introduction

The proportion of children born to cohabiting parents more than doubled during the past twenty years, increasing from 6% of all births in the early 1980s (Bumpass & Lu, 2000) to over 16% of births in large urban areas at the end of the century (estimated from McLanahan & Garfinkel, 2002). Over the same period, births to married parents declined from 82% of all births in 1980 to two-thirds of all births in 1999 (Ventura & Bachrach, 2000). Despite this dramatic change in parents' marital status at their child's birth, we know very little about how children raised in cohabiting families fare relative to children raised in married parent families. On the one hand, we might expect these two groups of children to have similar outcomes insofar as they both live with two biological parents. On the other hand, we might expect them to have different outcomes insofar as previous research suggests that marriage may confer special benefits on parents and children (Waite, 1995, 2000), and that cohabitation is selective of couples with lower socioeconomic status (Bumpass & Lu, 2000; Manning, 2001). The empirical literature on the topic generally shows that older children living with cohabiting parents do less well than children living with married parents in a variety of domains (Acs & Nelson, 2002, 2004; Brown, 2001, 2004; see also Manning, 2002 for a review).

Until recently, most studies that have compared children in cohabiting and married parent families have failed to distinguish between biological and non-biological cohabiting parents, thereby confounding the effect of cohabiting parent families with the effect of living with a stepparent. Although several new studies have overcome this problem (Acs & Nelson, 2004; Brown, 2004; Manning & Lamb, 2003), they focus on older children and adolescents. Since cohabiting relationships are known to be short-lived (Bumpass & Lu, 2000; Graefe & Licther, 1999; Manning, Smock, & Majumdar, 2004), focusing on older children increases the likelihood

that the cohabiting parents in the sample are selective of parents in long-term, stable relationships. Similarly, some of the children in these studies coded as living with two married parents may have started out life with two cohabiting parents.

In this paper we use data from the Fragile Families and Child Wellbeing Survey of New Parents (Fragile Families Study) to examine differences in the prevalence of behavioral problems at age 3 among children born to cohabiting and married parents. Behavior problems at very earlier ages, especially childhood aggression, are associated with anti-social behavior in adolescence and adulthood (Moffitt, Caspi, Harrington, & Milne, 2002). Our analysis addresses three questions. First, do children born to cohabiting parents exhibit more behavioral problems at age 3 than children born to married parents? Second, how much of the difference (assuming it exists) can be accounted for by differences in parental resources, including economic resources, relationship quality, and health? And third, do children born to cohabiting parents who marry after the child's birth exhibit fewer behavioral problems than children born to parents who remain in stable cohabiting relationships? Because children born to cohabiting parents are significantly more likely to experience their parents' separation (Manning, Smock, & Majumdar, 2004; Osborne, Manning, & Smock, 2004), we focus only on children who live with both of their parents from birth to age three. This strategy avoids confounding the effects of family instability with the effects of cohabitation on child behavior.

The analysis makes several contributions to the literature. It provides information on very young children living in stable cohabiting parent families, as opposed to older children and adolescents. It also examines how a broader array of characteristics of the parents, including the parents' relationship quality and characteristics of the child's biological father, help to account for differences in child wellbeing. In addition, by focusing on parental resources that are subject

to change, the analysis provides information on ways in which the wellbeing of children born to cohabiting parents might be increased. And finally, the analysis provides information on whether encouraging cohabiting parents to marry is likely to improve child outcomes.

Background

There are several reasons why we might expect children born to cohabiting parents to exhibit more behavior problems than children born to married parents. First, cohabiting parents have considerably lower incomes and educational attainment than married parents (Acs & Nelson, 2002, 2004; Manning & Lichter, 1996; Manning & Brown, 2003), and economic resources have been shown to affect child outcomes, particularly young children's outcomes (Duncan, Yeung, Brooks-Gunn, & Smith, 1998). Maternal education may improve child outcomes by increasing the family's potential earnings capacity and by increasing mothers' knowledge of parenting. Greater economic resources appear to promote healthy child development by reducing maternal stress, which allows for more sensitive, less detached, and less punitive parenting, and ultimately better child outcomes (Conger, Conger, & Elder, 1997; Linver, Brooks-Gunn, & Kohen, 2002; Yeung, Linver, & Brooks-Gunn, 2000). Economic resources may also have a direct effect on child wellbeing by allowing mothers to spend more time with their children and to purchase more stimulating resources, including higher quality childcare (Becker, 1991).

Several studies have found that economic resources (Acs & Nelson, 2004; Brown, 2004; Nelson, Clark, & Acs, 2001) and parenting stress (Brown, 2004) explain a significant portion of the difference in child behavior among older children living with two biological cohabiting parents versus two married parents. We would expect to find similar effects on young children, given that family income has been shown to have an even greater impact on preschool-aged children than older children (Brooks-Gunn & Duncan, 1997; Duncan, Yeung, Brooks-Gunn, & Smith, 1998).

Parents' relationship quality may also account for a higher level of behavior problems among children born to cohabiting parents. Studies have shown that married couples report higher relationship quality than cohabiting couples (Brown & Booth, 1996; Nock, 1995; Osborne, forthcoming), and better parental relationship quality is associated with better child outcomes (Belsky, 1990; Cox & Paley, 1997). Mothers who are helped and supported by their partners are more effective parents (Chase-Lansdale, Brooks-Gunn, & Paikoff, 1992), which translates into better child wellbeing (McLeod & Shanahan, 1993). Studies also show that parental conflict is strongly associated with child behavior problems (Cummings & Davies, 2002; Peterson & Zill, 1986). To our knowledge, no study has examined the extent to which parents' relationship quality can account for differences in child behavior between children in two biological married versus cohabiting parent families.

Finally, differences in the health and health behaviors of cohabiting and married parents may account for some of the difference in child behavior. Married adults report better health and health behaviors than unmarried adults, and this is especially true for men (Hahn, 1993; Stack & Eshleman, 1998; Waite, 1995). Moreover, cohabiting mothers report more mental health problems than married mothers (Brown 2000). Both physical and mental health problems are expected to negatively impact a mother's ability to parent and thus negatively affect child wellbeing (Downey & Coyne, 1990). Poor mental health may also increase a mother's likelihood of perceiving more behavioral problems in her children (Friedlander, Weiss, & Traylor, 1986). In addition, prenatal drug use (Leech, Richardson, Goldschmidt, & Day, 1999) and prenatal smoking (Wakschlag & Hans, 2002; Wakschlag, Pickett, Cook, Benowitz, & Leventhal, 2002; Weitzman, Gortmaker, & Sobol, 1992) are linked with subsequent child behavioral problems, especially aggressive behavior. Psychological health appears to explain a significant portion of the difference in

behavior among older children living with biological cohabiting versus married parents (Brown, 2004), and therefore we expect maternal health to account for differences in family structure among young children. The link between father's health and child behavior has not been examined in studies comparing cohabiting and married parent families.

Each of the factors described above – economic resources, relationship quality, and health – is potentially amenable to change. Thus, if we find that one or more of these factors are associated with better child behavior, this finding would point to ways in which the lives of children born to cohabiting parents might be improved. In contrast, married and cohabiting parents differ on a number of demographic characteristics expected to affect child behavior that are not amenable to change after the child's birth. For example, married parents are older than cohabiting parents, more likely to come from intact families, more likely to have children from other partnerships, more likely to be White (as compared with Black or Hispanic), and less likely to be immigrants (Manning, 2001; Osborne, forthcoming). Although these demographic characteristics are not amendable to change after the child's birth, they are associated with both family structure and child outcomes and therefore must be taken into account in the analyses described below.

Methods

Data

We use data from three waves of the Fragile Families Study, a longitudinal survey that interviewed approximately 3,700 unmarried mothers and 1,200 married mothers in the hospital shortly after their child's birth (N = 4,897). The data are representative of births to unmarried parents in large US cities at the turn of the 21st century. Baseline interviews were conducted between 1998 and 2000 in 20 cities throughout the United States with populations of 200,000 or

more residents. Almost 90% of the mothers were re-interviewed when the child was approximately 1 and 3 years old. Child assessments were completed when the child was age 3 for 89% of the cases in which mothers completed the three-year interview. The information on parents' characteristics is taken from the core Fragile Families Study and the information on the child's behavior at age 3 is taken from the child assessment modules.

Data on 1,370 mothers who were married or cohabiting with their child's biological father at the baby's birth and who were living with the father when the child was 3 are included in this analysis. This excludes 1,927 mothers who were not married or cohabiting at the child's birth, an additional 827 mothers who separated by the child's third year, 390 mothers who were lost to follow-up, and 383 mothers who did not complete the child module.

The final sample includes approximately 61% of the sample of mothers who were married at birth and 36% of the mothers who were cohabiting at birth. The smaller share of cohabiting mothers as compared to married mothers is primarily due to the higher rates of separation among cohabiting mothers as compared to married mothers. For cohabiting mothers, 39% are excluded due to separation, 14% were not re-interviewed at year one or year three, and an additional 10% did not complete the child module. For married mothers, 10% separated, 11% did not complete the one or three year interviews, and 18% did not complete the child module. Mothers lost to follow-up are similar to mothers included in this sample, with few exceptions. Mothers who are excluded due to missing data are more likely to be foreign born, have fewer children, and the missing cohabitors are less likely to have children from another partner (authors' tabulations available upon request).

Dependent Variables

We examine 3 outcomes of child emotional and behavioral problems at age 3: aggressive, withdrawn, and anxious/depressive behavior. See table 1 for a list of the items and the *Cronbach's alpha* for each scale. The items and scales for the 3 outcomes are derived from the Child Behavior Checklist 2-3 (Achenbach, 1992). Each item was read to the child's mother, and the mother indicated whether the statement was not true (0), sometimes or somewhat true (1), or very true or often true (2) of her child. The aggressive scale is comprised of the mean responses of 15 items, with a mean of .65 and a standard deviation of .39. The withdrawn scale consists of the mean responses of 14 items (M = .30 and SD = .26) and the anxious/depressive scale consists of the mean responses of 10 items (M = .54 and SD = .29). The outcomes are positively correlated with one another: The correlation between aggressive and withdrawn behavior is .62; between aggressive and anxious/depressive is .55; and between withdrawn and anxious/depressive is .54.

Insert Table 1 Here

Independent Variables

The mother's self-reported relationship status (married or cohabiting) at the time of her child's birth is the main independent variable. At years 1 and 3, mothers are considered cohabiting if they live with their child's biological father most or all of the time. At the child's birth, frequency of cohabitation was not asked, and therefore mothers are considered cohabiting if they responded that they lived together and were not married. For our secondary analysis, we also include a dichotomous variable indicating whether the cohabiting mother married her child's biological father within the child's first 3 years. The other independent variables include parents' background characteristics, economic resources, relationship quality, and health status.

Background characteristics of the mother include mothers' age, race, immigrant status, whether her parents were married at age 15, parity including the focal child, and a dichotomous variable for having a child with another partner. Fathers' background characteristics include fathers' age, whether his race is different from mothers', and having a child with another partner. All background characteristics are measured at the birth of the child and reported by the mother, with the exception of parity which is asked at the 1 year interview and is coded to reflect parity at the focal child's birth.

Economic resources are measured by the parents' education and earnings from employment in the year prior to the child's birth. Mother's education is based on 4 categories: less than high school, high school, some college or technical training, and college degree or more. Because mothers' and fathers' education levels are highly correlated, father's education is coded as having similar, more, or less education than the mother. Mothers' and fathers' earnings are each grouped into four mutually exclusive categories: zero earnings, less than $10,000, between $10,000 and $25,000, and more than $25,000 per year. The earnings measure captures employment in the year prior to the child's birth as well as a lower bound of household income.

Parent's relationship quality is measured by 2 different baseline measures: the emotional support the mother feels from the father (supportiveness) and the frequency of disagreement in the relationship in the month prior to the child's birth (disagreement). Supportiveness is based on the mean of 3 questions asked of the mother including, the baby's father is fair and willing to compromise, expresses love and affection to the mother, and encourages the mother to do things important to her ($\alpha = .69$). Disagreement is based on the mean of the mother's report of frequency of disagreement with the father about money, spending time together, sex, the pregnancy, drugs or alcohol, and being faithful within the month prior to their child's birth ($\alpha = .64$). For each scale,

the responses range from 1 (often) to 3 (never), and are recoded such that a high value indicates a high level of support or disagreement.

Mother's health is measured by her overall health status, psychological wellbeing, and by two prenatal behaviors. Overall health is a self-assessment asked of the mother at the child's birth. Responses range from poor (1) to excellent (5), and a dichotomous measure is created for poor or fair health versus all else. Mother's mental health is measured by 2 scales: major depression and general anxiety disorder. Depression and anxiety are measured at 1 year and are assessed using items from the Depressive Episode and Generalized Anxiety Disorder sections of the Composite International Diagnostic Interview – Short Form (CIDI-SF; Version 1.0 November 1998; Nelson, Kessler, & Mroczek, 1998). The CIDI-SF is a widely used screening instrument based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994) and is designed for epidemiological research. Using 1 year measures of mental health is potentially problematic in that it is possible the child's behavior has some effect on mother's mental health. Mother's mental health status was not asked at the baseline survey, however. Two prenatal behaviors include dichotomous measures of the mother's report of prenatal smoking and drug use, asked at the child's birth. Fathers' health includes 3 dichotomous measures for having a health problem that limits his ability to work, smoking, and having a drug or alcohol problem that limits his ability to work or hold relationships. Answers to all of these questions are reported by the mother at the child's birth.

Missing dichotomous variables are imputed to the mean of the subgroup (cohabiting or married). In no case did this amount to more than 10% of the sample. The mean of the available data is used in creating the scales if fewer than 3 questions are missing from the scale.

Methodology

The primary aim of this analysis is to determine whether young children born and raised by married parents have fewer behavioral problems relative to children born and raised by cohabiting parents; and, if so, whether the differences are due to differences in parents' economic, interpersonal, and health resources. We limit our analysis to married and cohabiting parents who remain together over their child's first 3 years. This represents approximately 60% of children born to cohabiting parents and 90% of children born to married parents (Osborne, Manning, & Smock, 2004). We do this to avoid confounding the effects of family structure with the effects of instability. Moreover, stable cohabitors provide us with our best comparison group to stably married parents, because from a young child's perspective, these 2 groups may seem quite similar.

We begin by estimating 6 ordinary least squares regression models for each of the behavioral outcomes: aggressive, withdrawn, and anxious/depressive. We test how the inclusion of specific sets of covariates explains the effect of cohabitation on child behavior. The main independent variable in each model is the relationship status of the parents at the child's birth (married is the reference category). The first model is the zero-order model. The second model adds controls for background characteristics of the mother and father including the parents' age, race, and child from another partner, and the mother's immigrant status, family background, and parity. This model includes factors that are assumed to predate family structure. Models 3 through 5 add the measures of parental resources. Model 3 adds parents' education and earnings; model 4 adds measures of relationship quality, and model 5 adds health and health behaviors. These measures could either pre-date or post-date family structure. The sixth model includes all the measures.

The secondary aim of this study is to determine whether marriage following a cohabiting birth is associated with fewer child behavioral problems. We expect that if marriage causes

economic, relational, and health benefits to the parents, and if these benefits are associated with fewer behavioral problems, then cohabiting parents who marry should report fewer behavioral problems as compared to those who remain cohabiting. Similarly, if those in the 'best' cohabiting relationships are the most likely to marry, we might also expect to observe better child outcomes in families in which the parents married. To address this question, we estimate the same 6 models for each of the outcomes as described above. However, for this analysis, we create 3 mutually exclusive relationship categories: stably married, stably cohabiting, and cohabiting-to marriage. Cohabitors who marry are the reference group, so that we can determine how this group compares to stable married and stable cohabiting parents. In table 6, we show only the equivalent to model 2 described above. This model controls for relationship status and background characteristics of the parents.

Results and Discussion

Table 2 shows the means of the independent variables used in the analysis by relationship status at the child's birth. Significant differences between the groups are noted in the table.

Insert Table 2 Here

The results in table 2 confirm that at a child's birth, married and cohabiting parents differ significantly on characteristics that are associated with subsequent child behavior. Married mothers and fathers are older than cohabiting parents, and are much more likely to be White, as opposed to Black or Hispanic. Married mothers are also more likely to come from an intact family. Married and cohabiting mothers have a similar number of children, although cohabiting mothers are over 3 times as likely to have a child from a previous partner. Similarly, cohabiting fathers are twice as likely as married fathers to have a child from a previous relationship.

The economic characteristics of cohabiting and married parents differ considerably. Cohabiting mothers have much lower levels of education than do married mothers. The differences in higher education are especially stark; over one third of the married mothers in this sample have a college education, as compared to just over 3% of the cohabiting mothers. Married fathers are more likely to have similar levels of education as their partner, whereas cohabiting fathers are more likely to have lower levels of education than their partners. With regard to earnings, married and cohabiting mothers are equally likely to report zero earnings in the year prior to their child's birth. Among mothers with earnings (about 80%), cohabitors are much more likely to have very low earnings (less than $10,000 per year), and much less likely to earn more than $25,000 per year. This pattern is similar for married and cohabiting fathers. The fathers are equally likely to report some earnings in the year prior to their child's birth, but married fathers report significantly higher earnings than cohabiting fathers.

Stably cohabiting and married parents also differ in terms of relationship quality. The difference is greater for the negative measure of relationship quality (disagreement), however, than it is for the more positive measure of relationship quality (supportiveness). The standard deviation for both measures is .3; therefore, the reported difference amounts to approximately .16 of a standard deviation for supportiveness ((2.79 – 2.74) / .3) and .30 of a standard deviation for disagreement ((1.38 – 1.29) / .3).

Differences in mothers' physical health and health behaviors are quite large. Cohabiting mothers are almost twice as likely as married mothers to report fair or poor health at their child's birth, and the differences in prenatal health behaviors are even larger. Over 20% of cohabiting mothers report smoking during their pregnancy, as compared to just over 6% of married mothers. Very few mothers report prenatal drug use, yet the difference between married and cohabiting

mothers' reports is substantial. Less than 1% of married mothers report using illicit drugs while pregnant compared to over 4% of cohabiting mothers. These prenatal health behaviors, especially drug use, are likely to be underreported given the social desirability to refrain from these behaviors while pregnant. We have no reason to believe that married mothers are more likely than cohabiting mothers to under report their behaviors, however. In contrast to physical health and health behaviors, married and cohabiting mothers in our sample report similar levels of depression and general anxiety. With regard to the fathers, the health of cohabiting fathers is reportedly much worse than that of married fathers. Cohabiting fathers are more likely to smoke and to have a health condition that limits his ability to work.

Table 2 also shows the difference in the mean levels of child behavioral problems as reported by married and cohabiting mothers. The results show that cohabiting mothers report significantly higher levels of behavioral problems for their 3 year olds. These results are discussed in greater detail in the multivariate analyses.

Insert Table 3 Here

The first two objectives of this study are determine the extent to which behavioral problems differ between children born to cohabiting and married parents, and to determine the factors that might account for these differences.

Aggressive Behavior

The first model in table 3 shows that children born to cohabiting mothers are reportedly more aggressive at age 3 than children born to married mothers. The difference at the bivariate level is about .26 of a standard deviation ($\beta = .10$, s.d. = .39). About 30% ((.10 - .07) / .10) of the cohabitation effect can be explained by characteristics of the parents that predate the current family structure and that are not amendable to change after the child's birth (see model 2).

Controlling for economic resources, there is only a small (.10 of a standard deviation, $\beta = .04$, SD = .39) and marginally significant difference in aggressive behavior between children born to cohabiting versus married parents. Model 3 shows that mothers with college education report significantly lower levels of child aggression, and mothers with very low earnings (less than $10,000) report significantly higher levels of child aggression. Married and cohabiting mothers differ considerably on these two factors, as was shown in table 2.

An interesting finding is that mothers with zero earnings report similar behavioral problems as mothers with incomes over $25,000, and fathers' earnings have no significant effect on aggressive behavior. We find that these results apply similarly to cohabiting and married parents (e.g. interactions between earnings and relationship status are not significant). Assuming that mothers' earnings prior to the child's birth are a good indication of earnings and employment potential when the child is 3, these findings imply that aggression may be more strongly associated with mothers working in low-wage jobs, which are often stressful and unrewarding, rather than to economic resources per se.

In post-hoc analyses we controlled for mothers' and fathers' employment at baseline and the household income to needs ratio, rather than earnings. Neither of these factors was significantly associated with aggressive behavior, which further supports the notion that aggressive behavior is more strongly influenced by the demands of low-wage work, rather than employment and household income per se. To measure stress associated with work more directly, we used the mother's report from the 1 year interview of whether her work schedule allows her to meet her family's needs. This variable is only marginally associated with aggressive behavior ($\beta = .02$ and $p = .06$) and does not attenuate the effect of low earnings on aggressive behavior. Moreover, there is no significant interaction between low earnings and stress associated with work. It is not clear

whether our measure of stress caused by low-wage employment is fully adequate, however. The relationship between low-wage work and child behavior needs to be more fully explored.

The results do not tell us whether the differences in education and earnings are the result of selection or caused by marriage, but these economic factors are amenable to change. Differences in economic resources do not fully explain the difference in child behavior between children born to married and cohabiting parents, however, and thus other factors must be considered.

In contrast to education and earnings, relationship quality does little to attenuate the effect of cohabitation on child behavior (see model 4). Emotional support and disagreement in the month prior to the child's birth are significantly associated with aggressive behavior at age 3, and our findings are consistent with previous research showing that marital conflict has a greater effect on child aggressive behavior than positive relationship quality (Cummings & Davies, 2002). However, given the relatively small differences in relationship quality reported by married and cohabiting mothers, it is not surprising that these factors do little to account for differences in child behavior between the groups. We tested interaction effects between relationship status and relationship quality, thinking that disagreement may be more harmful in less committed relationships. Tests showed that the finding applies similarly to cohabiting and married parent families. The finding also continues to hold if we use measures of disagreement and supportiveness at year 1 or year 3, rather than baseline measures.

Parents' health and health behaviors are also significantly associated with aggressive behavior and these variables are similar to economic resources in accounting for the effect of cohabitation. Model 5 shows that mothers who report that they are in fair or poor health at their child's birth, mothers who report smoking during their pregnancy, and mothers with major

depressive symptoms report significantly more behavioral problems in their 3 year olds. Interestingly, fathers' health is not significantly associated with child aggression.

Whereas the results indicate that maternal physical and mental health and prenatal smoking may be possible mechanisms for explaining the differences in aggressive behaviors, it is not clear whether these behaviors are a cause or a consequence of family structure. According to one theory, married fathers should have a greater influence on mothers' health and prenatal behaviors, which might account for the lower levels of smoking during pregnancy. Alternatively, father's smoking behavior may also influence the mother's behavior, and fewer married than cohabiting fathers report smoking while the mother was pregnant (18 % versus 42%, respectively). Finally, mothers in better health may select into marriage rather than cohabitation.

The link between prenatal smoking and aggressive behavior at age 3 is quite interesting. Prior research has found a strong link between prenatal smoking and aggressive behavior, but it is not possible to determine how much of the association is due to biological factors and how much is associated with other unobserved characteristics of the mother that are correlated with prenatal smoking and aggressive behavior (Wakschlag, et al., 2002; Weitzman, et al., 1992). In post-hoc analyses we tested whether the effect of prenatal smoking was mediated by stress from parenting and mothering behaviors when the child was 1. We found that these variables are associated with aggressive behavior at age 3, but they do not attenuate the effect of prenatal smoking on aggressive behavior. More analysis needs to be conducted beyond the scope of this paper to better understand the association between prenatal smoking and child aggression.

The final model shows that net of differences in parents' background characteristics, parents' economic, relational, and health resources, jointly explain about 50% of the effect of cohabitation on child aggression ((.07 - .02) / .10). Economic and health resources, however, explain much more of

the effect than parental relationship quality. The remaining difference that is not accounted for by these factors is small (.05 of a standard deviation) and statistically insignificant.

Insert Table 4 Here

Withdrawn Behaviors

Table 4 shows the results for withdrawn behavior. Children born to cohabiting parents are more withdrawn at age 3 than children born to married parents. Half of this difference is explained by background characteristics of the parents (see model 2). The remaining difference is explained by differences in economic and health resources of cohabiting and married parents. Model 3 shows that mothers' education levels, mothers' annual earnings, and fathers' zero earnings in the year prior to the child's birth are all significantly associated with withdrawn behaviors. Similar to the findings for aggressive behavior, mothers' earnings, as compared to fathers' earnings, have a stronger association with withdrawn behavior at age 3. And again, it is low maternal earnings (< $10,000 per year), rather than zero earnings, that are most strongly related to child behavior at age 3.

Relationship quality is strongly associated with withdrawn behaviors in the predicted direction, but it does not attenuate the effect of cohabitation (the coefficient is similar in models 2 and 4). Again, this is because stably married and cohabiting parents have relatively small differences in relationship quality, especially after controlling for differences in background characteristics.

Health and health related behaviors fully account for difference in withdrawn behavior between children born to cohabiting and married parents. The association between health and withdrawn behavior differs slightly from the association between health and aggressive behavior, however. Mothers in fair or poor health at their child's birth are more likely to report withdrawn

behaviors, which is consistent to the findings for aggressive behavior. By contrast, there is no link between prenatal smoking and withdrawn behaviors. This is consistent with prior literature which finds no association between prenatal smoking and withdrawn behavior, but a strong link between prenatal smoking and aggressive behavior (Weitzman et al., 1992). In addition, children of fathers who smoke and who have drug or alcohol problems have more reported withdrawn behavior. These health behaviors are highly correlated with education and earnings, and thus the effect size is diminished when all factors are included in the model (model 6).

As stated previously, we cannot determine if the economic and health differences between married and cohabiting parents are caused by marriage or due to selection. Regardless, these factors are amenable to change and doing so may impact child behavior.

Insert Table 5 Here

Anxious/Depressive

Table 5 shows the results for anxious/depressive behavior. The gross difference between children born to cohabiting and married parents is larger for anxious/depressive behavior (.41 of a standard deviation, (β = .12, SD = .29) than it is for aggressive or withdrawn behavior. One-third of this difference is explained by differences in parents' background characteristics that are not amenable to change after the child's birth.

Model 3 shows that economic resources account for an additional 25% ((.08 - .05) / .12) of the cohabitation effect. Maternal education has a strong negative effect on children's anxious/depressive behaviors. In addition, low earnings by the mother, and zero earnings by the father in the year before the child's birth are significantly associated with anxious/depressive behavior at age 3.

Similar to the previous 2 outcomes, relationship quality explains none of the cohabitation effect. In fact, relationship quality is only weakly associated with anxious/depressive behavior.

Parents' health, namely maternal health and depression, are significantly related to child anxious/depressive behaviors. These factors explain about 17% ((.08 - .06) / .12) of the cohabitation effect, net of parents' background characteristics. Health does not explain as much of the cohabitation effect as economic resources, however.

We can account for two-thirds of the effect of cohabitation on anxious/depressive behavior with the covariates included in our analysis (model 6), and the remaining difference is only about .14 of a standard deviation ($\beta = .04$, SD = .29). Economic resources account for most of the difference, and education and earnings largely attenuate the effect of relationship quality and health behaviors on anxious/depressive behaviors.

Borderline Clinical Behavioral Problems

The results discussed above show that children born to cohabiting mothers have more reported behavioral problems at age 3 as compared to children born to married mothers. The differences are also quite large, ranging from .23 of a standard deviation difference for withdrawn behavior, .25 for aggressive, and .41 for anxious/depressive behavior. However, most of these children's behavior falls within the normal range of behavior for 3 year olds (Achenbach, 1992). Thus another important question is whether children born to cohabiting parents are more likely to have behavior problems that approach a clinical diagnosis. We examined whether children born to cohabiting parents are more likely than children born to married parents to fall within the 65th percentile or higher on each behavioral outcome. We found that children born to cohabiting parents are about twice as likely to have behavioral problems that approach a clinical diagnosis.

These differences are fully explained by the background characteristics and education levels of the parents, however (results available upon request).

Insert Table 7 Here

Marriage following a cohabiting birth

The final objective of this analysis is to determine if marriage following a nonmarital birth is associated with better child behavior as compared to remaining in a stable cohabiting relationship. This question helps us to further probe whether marriage causes differences in child behavior, or if the differences are due to selection. We find that cohabiting mothers who marry (n = 249) report similar child behavior as mothers who remain in stable cohabiting relationships (n = 406) and more behavioral problems than mothers who were married at birth (n = 715). Table 6 shows the results controlling for differences in parents' background characteristics, and these findings apply at the bivariate level as well.

We expected that marriage following the birth of a child would be associated with better child behavior for 2 reasons: because parents who marry are more advantaged than parents who remain in a cohabiting relationship and because marriage itself is expected to confer benefits. Contrary to this hypothesis, we find that marriage following a nonmarital birth is *not* associated with better child behavior at age 3. Thinking that the benefits of marriage might take time to accrue, we tested to see if child outcomes in marriages that occurred within the first year following a birth differed from those that occurred between the first and third years. We found that the timing of the marriage following a nonmarital birth is not a significant factor.

Conclusion

Given the increase in children born to cohabiting parents, it is important to analyze how these children fare relative to children born to married parents. This analysis examined

differences in the prevalence of child behavioral problems at age 3 and estimated the extent to which differences in parents' economic resources, relationship quality, and health explain differences in child behavior.

We found that children born to cohabiting parents have more reported aggressive, withdrawn, and anxious/depressive behaviors at age 3 than children born to married parents. The reported differences are quite large and range from .23 of a standard deviation for withdrawn behavior, .26 of a standard deviation for aggression, to .41 of a standard deviation for anxious/depressive behavior.

Differences in background characteristics of the parents' explain about one-third of the cohabitation effect for aggressive and anxious/depressive behaviors and half of the effect for withdrawn behaviors. This finding indicates that a significant portion of the behavior differences between children born to cohabiting and married parents are driven by selection on parental characteristics that predate their current family structure.

Differences in economic and health resources across family types account for an additional 30% of the cohabitation effect for anxious/depressive behaviors and for 50% for aggressive and withdrawn behaviors. Cohabiting and married parents differ considerably in terms of their education, earnings, health, and health behaviors, and these factors are strongly associated with child behavior. It is not clear whether these differences are caused by marriage or due to selection, yet each factor is subject to change through policy. Particular interest needs to be paid to the association between child behavior and low earnings by the mother and prenatal smoking.

Interestingly, we found that differences in relationship quality between cohabiting and married parents do not account for differences in child behavior. Positive and negative aspects of relationship quality are strongly associated with aggressive and withdrawn behaviors, yet

because stably married and cohabiting parents do not differ considerably on these measures, these factors account for only a small portion of the cohabitation effect. In addition, we use self-reported measures of relationship quality. Observational measures may give us more purchase.

The demographic, economic, relational, and health factors included in this analysis explain all of the difference in aggressive and withdrawn behaviors across family types. We cannot account for all of the significant difference in anxious/depressive behaviors. However, the remaining difference is small (.14 of a standard deviation).

Our third objective was to determine whether marriage following a cohabiting birth is associated with fewer behavioral problems, relative to remaining in a stable cohabiting relationship. Our assumption was that either marriage would confer economic, relational, or health benefits to the parents which would translate into better child outcomes, or that the 'best' cohabiting parents would marry, which would also amount to better child outcomes. Contrary to our assumptions, we found that marriage following a cohabiting birth is not associated with better child behavior.

This combination of findings may have significant implications for policies designed to encourage marriage among unmarried parents in the hopes that marriage will benefit the children. The primary focus of the programs currently being considered is to address issues of the couples' relationship quality, with economic and health factors considered secondary. Our findings suggest that economic and health differentials are the primary factors affecting differences in child behavior between stably married and cohabiting parents, and between children born to married parents and those whose parents marry within their first 3 years.

Our analysis does not address the behavior of all children born to cohabiting versus married parents. By design, we focused only on children who live with their biological parents

from birth to age 3. This strategy provides the most conservative test of differences between married and cohabiting parents, as these families are likely to be the most similar, especially from a child's perspective. By incorporating this strategy, however, we exclude about 40% of children born to cohabiting parents and 10% of children born to married parents who experience their parents' separation before their third birthday (Osborne, Manning, & Smock, 2004). In preliminary analyses, we found that children who experience their parents' separation have more reported aggressive and anxious/depressive behaviors as compared to children whose parents remain together, and that this finding applies similarly to children born to cohabiting and married parents. We also found that these reported differences in behavior are explained by differences in background characteristics of the parents. A more thorough analysis of how these children fare relative to their stable counterparts needs to be conducted, and should take into consideration the mothers' new partnerships.

Another important note is that Black children are least well represented in our analysis for two reasons: Black children are less likely than White or Hispanic children to be born to mothers who are coresiding with their child's biological father, and Black children are more likely to experience their parents' separation from marriage or cohabitation than other children (Osborne, Manning, & Smock, 2004). Future studies should examine the association between family structure and child behavior within race and ethnic groups as the prominence and meaning of marriage and cohabitation may differ across groups (Smock, 2000).

Our findings suggest that in addition to selection, lower levels of economic and health resources among cohabiting mothers explain poorer behavior among their 3 year old children. Policies that seek to improve the education, earnings, and health behaviors of unmarried parents may also positively impact their children's wellbeing.

References

Achenbach, T. M. (1992). Manual for the child behavior checklist/ 2 – 3 and 1992 profile. Burlington VT: University of Vermont Department of Psychiatry.

Acs, G., & Nelson, S. (2002). The kids are alright? Children's well-being and the rise in cohabitation. Washington D.C.: The Urban Institute. Assessing the New Federalism Policy Brief B – 48.

Acs, G., & Nelson, S. (2004). Should we get married in the morning? A profile of cohabiting couples with children. Washington D.C.: The Urban Institute. Assessing the New Federalism Discussion Paper.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders, Fourth Edition.* Washington, D. C.: American Psychiatric Association.

Becker, G. (1991). *A treatise on the family*. Cambridge, MA: Harvard University Press.

Belsky, J. (1990). Parental and nonparental child care and children's socioemotional development: a decade in review. *Journal of Marriage and the Family, 52*, 885 – 903.

Brooks-Gunn, & Duncan, G. (1997). The effect of poverty on children. *Future of Children, 7*, 55 – 71.

Brown, S. (2000). The effect of union type on psychological well-being: depression among cohabitors versus marrieds. *Journal of Health and Social Behavior, 41*, 241 – 255.

Brown, S. (2001). Child well-being in cohabiting families. In A. Booth & A. Crouter (Eds.), *Just living together: implications of cohabitation on families, children, and social policy* (pp. 173 – 187). Mahwah, NJ: Lawrence Erlbaum Associates.

Brown, S. (2004). Family structure and child well-being: The significance of parental cohabitation. *Journal of Marriage and Family*, *66*, 351 – 367.

Brown, S., & Booth, A. (1996). Cohabitation versus marriage: A comparison of relationship quality. *Journal of Marriage and the Family, 58*, 668 – 678.

Bumpass, L., & Lu, H. (2000). Trends in cohabitation and implications for children's family contexts in the United States. *Population Studies, 54*, 29 – 41.

Chase-Lansdale, P. L., Brooks-Gunn, J., & Paikoff, R. (1992). Young African American multigenerational families in poverty: quality of mothering and grand-mothering. *Child Development, 65*, 373 – 393.

Conger, R. D., Conger, K. J., & Elder, G. (1997). Family economic hardship and adolescent adjustment: Mediating and moderating processes. In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of growing up poor* (pp. 288 – 310). New York: Russell Sage Foundation.

Cox, M., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*, 243 – 267.

Cummings, E. M., & Davies, P. (2002). Effects of marital conflict on children: Recent advances and emerging themes in process-oriented research. *Journal of Child Psychology and Psychiatry, 43*, 31 – 63.

Downey, G., & Coyne, J. (1990). Children of depressed parents: an integrative review. *Psychological Bulletin, 108*, 50 – 76.

Duncan, G., Yeung, W., Brooks-Gunn, J., & Smith, J. (1998). How much does childhood poverty affect the life chances of children? *American Sociological Review, 63*, 406 – 423.

Friedlander, S., Weiss, D., & Traylor, J. (1986). Assessing the influence of maternal depression on the validity of the Child Behavior Checklist. *Journal of Abnormal Psychology, 14*, 123 – 133.

Graefe, D., & Lichter, D. (1999). Life course transitions of American children: parental cohabitation, marriage, and single motherhood. *Demography, 36*, 205 – 217.

Hahn, B. (1993). Marital status and women's health: the effect of economic marital acquisitions. *Journal of Marriage and the Family, 55*, 495 – 504.

Leech, S., Richardson, G., Goldschmidt, L., & Day, N. (1999). Prenatal substance exposure: effects on attention and impulsivity of six-year-olds. *Neurotoxicology and Teratology, 21*, 109 – 118.

Linver, M., Brooks-Gunn, J., & Kohen, D. (2002). Family processes as pathways from income to young children's development. *Development Psychology, 38*, 719 – 734.

Manning, W. (2001). Childbearing in cohabiting unions: racial and ethnic differences. *Family Planning Perspectives, 33*, 217 – 223.

Manning, W. (2002). The implications of cohabitation for children's well-being. In A. Booth & A. Crouter (Eds.), *Just living together: implications of cohabitation on families, children, and social policy* (pp. 121 – 152). Mahwah, NJ: Lawrence Erlbaum Associates.

Manning, W., & Brown, S. (2003). Children's economic wellbeing in cohabiting parent families: an update and extension. Paper presented at the annual meeting of the *Population Association of America*, Minneapolis, MN.

Manning, W. & Lamb, K. (2003). Adolescent well-being in cohabiting, married, and single-parent families. *Journal of Marriage and Family, 65*, 876 – 893.

Manning, W., & Lichter, D. (1996). Parental cohabitation and children's economic well-being. *Journal of Marriage and the Family, 58*, 998 – 1010.

Manning, W., Smock, P., & Majumdar, D. (2004). The relative stability of cohabiting and marital unions for children. *Population Research and Policy Review, 23*, 135 – 159.

McLanahan, S., & Garfinkel, I. (2002). Unwed parents: myths, realities, and policymaking. Working paper #2002 – 15 - FF, Center for Research on Child Well-being, Princeton, NJ.

McLeod, J., & Shanahan, M. (1993). Poverty, parenting, and children's mental health. *American Sociological Review, 58*, 351 – 366.

Moffitt, T., Caspi, A., Harrington, H., & Milne, B. (2002). Males on the life-course-persistent and adolescence-limited antisocial pathways: Follow-ups at age 26. *Development and Psychopathology*, 14, 179 – 206.

Nelson, S., Clark, R., & Acs, G. (2001). Beyond the two-parent family: how teenagers fare in cohabiting couple and blended families. Washington D.C.: The Urban Institute. Assessing the New Federalism Policy Brief B – 31.

Nelson, C. B., Kessler, R. C., & Mroczek, D. (1998). Scoring the World Health Organization's composite international diagnostic interview short form (CIDI-SF; v 1.0 Nov 98). Unpublished manuscript, Epidemiology, Classification and Assessment Group, World Health Organization, Geneva, Switzerland.

Nock, S. (1995). A comparison of marriage and cohabiting relationships. *Journal of Family Issues, 16*, 53 – 76.

Osborne, C. (forthcoming). Marriage following the birth of a child among cohabiting and married parents. *Journal of Marriage and Family*.

Osborne, C., Manning, W., & Smock, P. (2004). Instability in fragile families: The role of race/ethnicity, economics, and relationship quality. Paper presented at the annual Meeting of the *American Sociological Association*, San Francisco, CA.

Peterson, J., & Zill, N. (1986). Marital disruption, parent-child relationship, and behavioral problems in children. *Journal of Marriage and the Family, 48*, 295 – 307.

Smock, P. (2000). Cohabitation in the United States: An appraisal of research themes, findings, and implications. *Annual Review of Sociology, 26*, 1 - 20.

Stack, S., & Eshleman, R. (1998). Marital status and happiness: A 17-nation study. *Journal of Marriage and the Family, 60*, 527 – 536.

Ventura, S., & Bachrach, C. (2000). Nonmarital childbearing in the United States, 1940 – 1999. *National Vital Statistics Report*, Centers for Disease Control and Prevention, 48: 16.

Waite, L. (1995). Does marriage matter? *Demography*, 32, 483 – 507.

Waite, L. (2000). Trends in men's and women's wellbeing in marriage. In L. Waite (Ed.), *The ties that bind: Perspectives on marriage and cohabitation*. (pp. 368 – 392). New York: Aldine de Gruyter.

Wakschlag, L., & Hans, S. (2002). Maternal smoking during pregnancy and conduct problems in high-risk youth: A developmental framework. *Development and Psychopathology, 14*, 351 – 369.

Wakschlag, L., Pickett, K., Cook, E., Benowitz, N., & Leventhal, B. (2002). Maternal smoking during pregnancy and severe antisocial behavior in offspring: A review. *American Journal of Public Health, 92*, 966 – 974.

Weitzman, M., Gortmaker, S., & Sobol, A. (1992). Maternal smoking and behavior problems of children. *Pediatrics, 90*, 342 – 349.

Yeung, W. J., Linver, M., & Brooks-Gunn, J. (2002). How money matters for young children's development: parental investment and family processes. *Child Development, 73*, 1861 – 1879.

Table 1: Outcome Measures: Questions in Child Emotional and Behavioral Problem Scales

Aggressive	Withdrawn	Anxious/Depressive
Defiant	Acts too young for age	Clings to adults, dependent
Demands met immediately	Avoids eye contact	Feelings easily hurt
Disobedient	Doesn't answer people	Looks unhappy
Easily frustrated	Refuses to play games	Self-conscious, embarrassed
Fights often	Unresponsive to affection	Too fearful or anxious
Hits others	Shows little affection	Unhappy, sad, depressed
Angry moods	Shows little interest in things	Upset by separation from parents
Punishment doesn't matter	Withdrawn, doesn't get involved	Overtired
Screams a lot	Underactive, slow moving	Shy, timid
Selfish or won't share	Doesn't get along with others	Wants attention
Temper tantrums	Doesn't know how to have fun	
Easily jealous	Lacks guilt after misbehaving	
Moody	Stubborn, sullen, irritable	
Unusually loud	Uncooperative	
Whiny		
15 items	14 items	10 items
Cronbach's Alpha = .86	*Cronbach's Alpha* = .69	*Cronbach's Alpha* = .62
Mean = .65	Mean = .30	Mean = .54
Standard deviation = .39	Standard deviation = .26	Standard deviation = .29

Source: Fragile Families Study

Scales based on Achenbach, 1992 for 2 to 3 year olds.

Mother's responses range from 0 (not true) to 2 (very/often true).

Table 2
Means of Independent and Dependent Variables by Mother's Relationship Status at Child's Birth

	Married $N = 715$	Cohabiting $N = 655$
Mothers' background characteristics		
Age	29.6	24.6*
White	46.7	19.5*
Black	20.7	36.0*
Hispanic	25.0	41.1*
Other	7.6	3.4*
Foreign born	25.5	22.1
Parents married at 15	65.7	41.8*
Parity (mean)	2.05	2.14
Child from other partner	12.2	39.1*
Father's background characteristics		
Age	31.9	27.3*
Race differs from mother's	12.7	14.8
Child from other partner	15.2	31.3*
Mother's education		
Less than high school	14.9	36.9*
High school	18.0	33.4*
Some college	28.3	26.3
College	38.7	3.4*
Father's education		
More than mother's	24.5	26.3
Same as mother's	58.6	47.5*
Less than mother's	13.0	21.7*

* Significantly different from married at the $p = .05$ level.

Table 2 (continued)
Means of Independent and Dependent Variables by Mother's Relationship Status at Child's Birth

	Married	Cohabiting
Mother's annual earnings		
$0	21.8	22.3
$1 - $9,999	32.3	51.9*
$10,000 - $25,000	17.8	19.5
> $25,000	28.1	6.3*
Father's annual earnings		
$0	2.5	2.6
$1 - $9,999	5.9	21.8*
$10,000 - $25,000	23.4	59.9*
> $25,000	68.3	25.6*
Relationship quality		
Supportiveness (1 – 3)	2.79	2.74*
Disagreement (1 – 3)	1.29	1.38*
Mother's health		
Fair or poor health	4.8	9.0*
Prenatal smoking	6.4	20.5*
Prenatal drug use	0.6	4.3*
Depression	9.5	11.6
General anxiety	2.3	2.2
Father's health		
Health limits ability to work	2.4	8.2*
Smokes	17.9	41.5*
Substance abuse	2.2	1.7
Child behavior at age 3 (0 – 2)		
Aggressive	.54 (.34)	.64* (.37)
Withdrawn	.25 (.22)	.31* (.24)
Anxious/depressive	.42 (.27)	.54* (.29)

* Significantly different from married at the $p = .05$ level. Standard deviation in parentheses.

Table 3: Results from Ordinary Least Squares Regression Analysis: Aggressive Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
Union status at child's birth						
(Married)						
Cohabiting	.10**	.07**	.04+	.06**	.03	.02
Background characteristics						
Age		-.00	.00	-.00	.00	.00
(White)						
Black		-.01	-.02	-.03	.00	-.02
Hispanic		-.00	-.03	-.01	.02	.00
Foreign born		-.01	-.03	.00	-.01	-.02
Economic resources						
Mother's education						
(< H.S.)						
High school			-.03			-.01
Some college			-.05			-.01
College			-.08*			-.02
Father's education						
(Same as mother's)						
More than mother's			.03			.01
Less than mother's			-.04			-.04
Mother's annual earnings						
$0			.02			.02
$1 - $9,999			.12**			.11**
$10,000 - $25,000			.05			.04
(> $25,000)						
Father's annual earnings						
$0			.07			.06
$1 - $9,999			.01			-.01
$10,000 - $25,000			.00			-.00
(> $25,000)						

Table 3 (cont.): Results from Ordinary Least Squares Regression Analysis: Aggressive Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
Relationship quality						
Supportiveness				-.05+		-.04
Disagreement				.14**		.11**
Health and health behaviors						
Mother's health						
Fair/poor health					.08*	.08*
Prenatal smoking					.13**	.12**
Prenatal drug use					.09	.06
Depressive symptoms					.07*	.06+
General anxiety					.03	.02
Father's health						
Health limits work					-.01	-.02
Smokes					.03	.02
Substance abuse					.09	.08
Constant	.54	.67	.61	.63	.65	.58
F statistic[a]		1.97*	3.16**	14.01**	5.94**	4.41**

Source: Fragile Families Study.

** $p \leq .01$. * $p \leq .05$. + $p \leq .10$.

Reference category in parentheses. Father age, mother other race, father's race differs from mother's, parity, mother or father has child with other partner, and family background included in models 2 – 6.

a. F statistic for models 3 – 6 are based on inclusion of variables subsequent to model 2.

Table 4: Results from Ordinary Least Squares Regression Analysis: Withdrawn Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
Union status at child's birth						
(Married)						
Cohabiting	.06**	.03*	.01	.03+	.01	.00
Mother's characteristics						
Age		-.00	-.00	-.00*	-.00	-.00
(White)						
Black		-.00	-.01	-.02	-.00	-.02
Hispanic		.05**	.03	.04*	.05**	.03
Foreign born		.04*	.02	.05**	.04*	.03
Economic resources						
Mother's education						
(< H.S.)						
High school			-.03			-.02
Some college			-.07**			-.05*
College			-.08**			-.05+
Father's education						
(Same as mother's)						
More than mother's			.01			.00
Less than mother's			-.01			-.00
Mother's annual earnings						
$0			.04+			.03
$1 - $9,999			.08**			.07**
$10,000 - $25,000			.05*			.04+
(> $25,000)						
Father's annual earnings						
$0			.08+			.06
$1 - $9,999			.01			.01
$10,000 - $25,000			.01			.01
(> $25,000)						

Table 4 (cont.): Results from Ordinary Least Squares Regression Analysis: Withdrawn Behavior

	(1)	(2)	(3)	(4)	(5)	(6)
Relationship quality						
Supportiveness				-.06**		-.05*
Disagreement				.08**		.06**
Mother's health						
Fair/poor health					.07**	.06*
Prenatal smoking					.03	.01
Prenatal drug use					.10*	.07+
Depressive symptoms					.04+	.03
General anxiety					.01	.02
Father's health						
Health limits work					.02	.01
Smokes					.03*	.02
Substance abuse					.09*	.08+
Constant	.25	.28	.23	.34	.28	.28
F statistic		3.88**	3.96**	15.45**	5.04**	4.38**

Source: Fragile Families Study.

** $p \leq .01$. * $p \leq .05$. + $p \leq .10$.

Reference category in parentheses. Father age, mother other race, father's race differs from mother's, parity, mother or father has child with other partner, and family background included in models 2 – 6.

a. F statistic for models 3 – 6 are based on inclusion of variables subsequent to model 2.

Table 5: Results from Ordinary Least Squares Regression Analysis: Anxious/Depressive

	(1)	(2)	(3)	(4)	(5)	(6)
Union status at child's birth						
(Married)						
Cohabiting	.12**	.08**	.05*	.08**	.06**	.04*
Mother's characteristics						
Age		-.00+	.00	-.00+	-.00+	-.00
(White)						
Black		.03	.01	.02	.03	.00
Hispanic		.05*	.01	.05*	.05*	.01
Foreign born		.09**	.05*	.09**	.08**	.06*
Economic resources						
Mother's education						
(< H.S.)						
High school			-.05*			-.04+
Some college			-.09**			-.09**
College			-.16**			-.14**
Father's education						
(Same as mother's)						
More than mother's			.03			.02
Less than mother's			-.05*			-.04*
Mother's annual earnings						
$0			.02			.02
$1 - $9,999			.06**			.06*
$10,000 - $25,000			-.01			-.01
(> $25,000)						
Father's annual earnings						
$0			.13**			.12**
$1 - $9,999			.04+			.04
$10,000 - $25,000			.01			.01
(> $25,000)						

Table 5 (cont.): Results from Ordinary Least Squares Regression Analysis: Anxious/Depressive

	(1)	(2)	(3)	(4)	(5)	(6)
Relationship quality						
Supportiveness				-.04+		-.03
Disagreement				.04		.03
Mother's health						
Fair/poor health					.07*	.05+
Prenatal smoking					.04	.01
Prenatal drug use					.08	.05
Depressive symptoms					.07**	.05*
General anxiety					-.03	-.04
Father's health						
Health limits work					.01	-.02
Smokes					.01	-.00
Substance abuse					.04	.03
Constant	.42	.50	.48	.58	.49	.55
F statistic		6.97**	5.61**	3.75*	2.64**	3.65**

Source: Fragile Families Study.

** $p \leq .01$. * $p \leq .05$. + $p \leq .10$.

Reference category in parentheses. Father age, mother other race, father's race differs from mother's, parity, mother or father has child with other partner, and family background included in models 2 – 6.

a. F statistic for models 3 – 6 are based on inclusion of variables subsequent to model 2.

Table 6: Results from Ordinary Least Squares Regression Models: Child Behavior Stable Cohabiting and Married relative to Cohabitors who Marry After Child's Birth

	Aggressive	Withdrawn	Anxious/ Depressive
Relationship from birth to year 3			
(From cohabitation to marriage)			
Stably cohabiting	-.01	-.02	.02
Stably married	-.07**	-.04*	-.06**

Source: Fragile Families Study.

** $p \leq .01$. * $p \leq .05$. + $p \leq .10$.

Model controls for background characteristics of mothers and fathers.