

Partnership Instability and Child Well-being

Center for Research on Child Wellbeing
Working Paper #2004-16-FF

Cynthia Osborne

*Sara McLanahan

LBJ School of Public Affairs
Population Research Center
University of Texas at Austin
2315 Red River Road P.O. Box Y
Austin, TX 78713-8925
512-471-9808 (phone)
512-471-1835 (fax)
cosborne@prc.utexas.edu

*Center for Research on Child Wellbeing
Office of Population Research
265 Wallace Hall
Princeton University
Princeton, NJ 08544

Revised March 2007

Abstract

We use data from three waves of the Fragile Families Study ($N = 2,111$) to examine the prevalence and effects of mothers' partnership changes between birth and age 3 on children's behavior. We find that children born to unmarried and minority parents experience significantly more partnership changes than children born to parents who are married or White. Each transition is associated with a modest increase in behavioral problems, but a significant number of children experience three or more transitions. The effects of instability do not depend on the mothers' relationship status or race/ethnicity with one exception: instability has a stronger effect on aggression among Hispanic children. The association between instability and behavior is mediated by maternal stress and lower quality mothering.

A growing body of research indicates that children exposed to multiple changes in family structure have poorer outcomes, on average, than children who grow up in stable families. These findings have been replicated for a variety of age groups (early and middle childhood, as well as adolescence) and for a variety of outcomes, including child behavior problems, delinquency, and adolescent pregnancy (e.g. Cavanagh & Huston, 2006; Fomby & Cherlin, forthcoming, Wu & Thomson, 2001). Previous research also indicates that partnership instability may interact with child characteristics such as race/ethnicity and family structure at birth. In some studies White children appear to be more affected by changes in family structure than Black children (Fomby & Cherlin, forthcoming; Wu & Thomson, 2001), and children born to married parents appear to be more affected than children born to unmarried parents (Cavanagh & Huston, 2006). Although some of the association between partnership instability and child outcomes is likely the result of selection – e.g. parents with pre-existing problems are more likely to experience multiple relationship changes and to have children with behavioral problems (Capaldi & Paterson, 1991) – there are good theoretical and empirical reasons to believe that at least part of the effect is causal (Fomby & Cherlin, forthcoming). Social stress theory suggests that changes in relationships lead to disruptions in resources and routines (George, 1993; Holmes & Rahe, 1967) which interfere with a mother's psychological functioning and interactions with her child and, ultimately, reduce child well-being (George, 1989; Rutter, 1983).

Understanding the role of partnership instability in shaping children's future well-being is important for several reasons. First, family instability has increased dramatically since 1960 as a result of major demographic changes, including increases in cohabitation and nonmarital childbearing (Ventura & Bachrach, 2000). The new family forms that result from these changes are much less stable than traditional marriages (Osborne, Manning, & Smock, 2007), which means that children are increasingly exposed to multiple changes in family structure over the course of their childhood.

Second, cohabitating unions and nonmarital childbearing are much more common among minority and lower SES families as compared to White and higher SES families (Ellwood & Jencks, 2004), thus these groups are disproportionately exposed to family instability. Insofar as family instability – independent of family structure – has negative consequences for children, the new family forms can be viewed as an important mechanism in the reproduction of poverty and inequality across generations (McLanahan, 2004).

This paper uses data from a longitudinal survey of new parents to address three broad questions. First, how many partnership transitions – defined as the beginnings or endings of romantic relationships – are children exposed to during the first three years of life, and how does their exposure differ by race/ethnicity and family structure at birth? Second, are partnership changes associated with children's behavior problems at age three, and does this association differ by race/ethnicity and family structure at birth? And finally do changes in material resources and residence, maternal stress, and poor quality mothering mediate the association between partnership instability and child behavior?

Our study extends previous research in several ways. First, we use data from a large, birth cohort study that is following approximately 5,000 children born between 1998 and 2000. The study over-samples nonmarital births so it includes a large number of children who are at risk for experiencing parents' partnership changes. The study also includes a large sample of Hispanic families which means that we can examine whether the findings from previous studies can be generalized to this population.

Second, our measure of partnership changes includes changes in cohabiting and dating relationships as well as changes in marital partnerships. Whereas a few recent studies have examined transitions into and out of cohabiting relationships, our analysis is the first to examine changes in dating relationships. Although a dating partner is likely to be less involved with the child than a cohabiting partner, we argue that the beginnings and endings of dating relationships

are likely to affect the mothers' psychological (and possibly material) resources and ultimately her ability to care for her child.

Third, our data include extensive information on parents' characteristics at the child's birth, including prior relationship stability and grandparents' mental health. Thus we are able to control for many of the theoretically important (but often unobserved) characteristics that are likely to be correlated with mothers' future partnership stability as well as child behavior problems. These controls reduce the possibility that the associations we observe between partnership instability and child outcomes are spurious.

Fourth, whereas previous studies have primarily focused on older children and adolescents, we focus on children at age 3. The zero to three period is a crucial stage in the development of the mother-child relationship (Belsky, 1990), and behavioral problems at early ages are thought to be predictive of subsequent behavioral and academic difficulties (McLeod & Kaiser, 2004; NICHD Early Childcare Research Network, 2004; but see Duncan et al., (2006) who find no association between behavior problems at age 5 and academic achievement at ages 8 through 13). Finally, our data include questions about changes in economic resources, residential mobility, maternal stress, and mothering quality which allow us to examine possible mechanisms through which partnership instability affects child well-being.

Prior research and theoretical perspectives

Research on the association between partnership instability and child well-being has been ongoing for twenty-five years. Early studies focused on changes in marital unions, including divorce and remarriage. As cohabitation became more common, researchers began to include transitions in and out of these unions as well. Several researchers have documented a negative association between the number of partnership changes a child is exposed to and child well-being at various developmental stages.

Looking at adolescents, Capaldi, Crosby, and Stoolmiller (1996) found that boys who are exposed to multiple partnership transitions become sexually active younger than boys who grow up in stable families. Wu and his colleagues found that the number of family transitions a child experiences between birth and age 14 is associated with early sexual intercourse and premarital childbearing among adolescent girls (Wu, 1996; Wu & Martinson, 1993; Wu & Thomson, 2001). Similar results have been reported for adolescent pregnancies by researchers using British data (Cockett & Tripp, 1994) and New Zealand data (Woodward, Fergusson, & Horwood, 2001). Most recently, Fomby and Cherlin (forthcoming) have shown that union instability (including changes in cohabiting relationships) is associated with behavior problems in White (but not Black) adolescents.

Looking at younger children, Capaldi and Patterson (1991) found that boys who experience three or more partnership transitions have substantially more adjustment problems in elementary school than boys who experience no transitions. Similarly, Kurdek, Fine, and Sinclair (1995) found that partnership transitions are negatively associated with academic achievement and behavior problems among 6th graders, and Najman and colleagues (1997) reported similar effects on child behavior problems at age 5. Ackerman and his colleagues (1999, 2001, & 2002) conducted a number of studies of the effects of partnership transitions on the academic performance and behavior problems of children between the ages of 5 and 8 and found that multiple transitions, including changes in cohabitation status, are associated with increases in behavior problems, but not cognitive test scores. Most recently, Cavanagh and Huston (2006) found that partnership instability is associated with behavior problems among middle-income 5 year old children.

In addition to documenting the association between partnership transitions and child outcomes, researchers have also identified a number of factors that appear to modify the effects of instability on child well-being. For example, two studies report stronger effects for Whites than for Blacks (Fomby & Cherlin, forthcoming; Wu & Thomson, 2001); several studies report

more negative effects among children whose parents have fewer resources, measured variously as mental health, cognitive skills, and economic status (Ackerman et al., 2002; Cavanagh & Huston, 2006), and there is mixed evidence regarding the moderating effects of family structure on instability (Cavanagh & Huston, 2006).

Why would partnership instability affect child well-being?

Our theoretical model for how partnership instability affects poor outcomes in children is based on social stress theory (George, 1989; 1993; Holmes & Rahe, 1967). According to this theory, partnership transitions are associated with changes in material and social resources which, in turn, negatively affect a mother's psychological functioning and capacity to positively interact with her child. Ultimately, declines in mothers' functioning lead to increases in child behavior problems.

According to social stress theory, even "positive" events, such as getting married, forming a new partnership, or ending a bad relationship, may lead to increases in stress. Social stress theory posits that the negative effects of partnership changes should be most pronounced around the time of the change and should fade out over time in the absence of additional changes (Acock & Demo, 1994; Williams & Umberson, 2004). Because the stress from each event is cumulative, children who experience multiple changes over a short period of time are likely to be at greater risks of negative outcomes than children who experience a single change or no changes (Rutter, 1983).

The theoretical model described above is supported by empirical research which shows that divorce is associated with income loss and greater residential mobility (Holden & Smock, 1991, McLanahan & Sandefur, 1994). Separation from cohabitation is also associated with a decline in resources (Avellar & Smock, 2005). Whereas remarriage or repartnering may lead to increases in family resources, the extent to which the additional income is equally shared in stepfamilies is unclear (Case, Lin, & McLanahan, 2000). Moreover, although remarriage may

indicate a move to a larger house or safer neighborhood, the move itself may disrupt mothers' and children's connections to neighborhood ties.

Divorce also leads to disruptions in family processes that are associated with good parenting and positive outcomes in children (Hetherington, Cox, & Cox, 1982). According to these researchers, the disruptions in routines and other parental behaviors that typically accompany divorce are usually temporary, lasting between 18 months and two years for most families (Hetherington, Cox, & Cox, 1985). A similar process occurs when a mother remarries and her child must adapt to a new stepfather and possibly step-siblings (Hetherington et al., 1992; Hetherington, Bridges, & Insabella, 1998).

As the family adjusts to the changes and establishes a new set of routines, parenting improves and the child's behavioral problems subside. Over the long run, however, families that experience persistent changes may not have an opportunity to return to 'normal,' and thus may live in perpetual uncertainty and chaos (Brody, Neubaum, & Forehand, 1988). A chaotic, unpredictable environment negatively alters a mother's capacity to care for her child (Pavenstadt, 1965; Waters, 1980). More specifically, high levels of stress interfere with a mother's ability to provide warm, nurturing, and supportive parenting which are essential contributors to healthy child development (Belsky, 1990; Bowlby, 1977).

Aside from stress, there are two alternative hypotheses for why partnership instability might be associated with children's behavior problems. First, the 'selection hypothesis' posits that partnership instability and child behavior problems are both determined by a third unobserved (by the researcher) variable. For example, mothers with serious psychological problems may find it more difficult to maintain stable relationships and their children may also exhibit more behavior problems. Evidence for this hypothesis is mixed (Capaldi & Paterson, 1991, Capaldi et al., 1996, Fomby & Cherlin, forthcoming). Second, the 'reverse causality hypothesis' argues that having a child with a serious behavior problem may increase maternal

stress which will cause more partnership instability. A number of studies find that parents with an unhealthy child are more likely to divorce (e.g. Reichman, Corman, & Noonan, 2004). These alternative hypotheses have different policy implications and we examine the hypotheses in more detail in our analyses.

Moderating effects

Social stress theory also suggests that the effects of instability may be conditioned by race/ethnicity and family structure, although exactly how these moderating effects should play out is not entirely clear. On the one hand, social stress theory argues that change is less stressful when it is more normative and more predictable, and when a mother is protected by a strong support system (Maier & Seligman, 1976; Mineka & Kihlstrom, 1978). Because partnership instability is more common among Blacks, Hispanics, and unmarried mothers (Ellwood & Jencks, 2004; Martin, 2004), the effects of instability may be less negative for these groups. There also is evidence that minority and single mothers have more supportive kin networks (Black, Dubowitz, & Starr, 1999; Coley, 1998; McLoyd, Cauce, Takeuchi, & Wilson, 2000), although some researchers dispute this finding (McDonald & Armstrong, 2001). Finally, unmarried mothers may experience higher conflict and more violence in their relationships than married mothers (Brown & Booth, 1996; Cherlin, 1998) which suggests that ending a relationship may reduce their stress in the short term (Amato, 2005). All of these arguments imply that the effects of partnership transitions on mothers' functioning should be less negative for minority and unmarried mothers.

On the other hand, social stress theory also argues that a mother's capacity to cope with a stressful event is conditioned by her education level and material resources (George, 1989; Levine, 1980). Because married mothers and non-minority mothers have more resources at their disposal than unmarried, minority mothers (Manning & Brown, 2006) we might expect the effects of instability to be less negative for these mothers.

Control Variables

To minimize the possibility that the effect of partnership instability on child behavior is driven by selection, we control for a host of maternal characteristics that predate the child's birth and have been shown to affect both instability and child outcomes. These include mothers' age, race/ethnicity, education level, health (including mental health), and health behaviors. Age and race/ethnicity are predictive of relationship stability (Carlson, McLanahan, & England, 2004; Osborne et al., 2007) and are also associated with more punitive parenting and more child behavioral problems (Brody & Flor, 1998; Klebanov, Brooks-Gunn, & Duncan, 1994; McLoyd, 1990). Similarly, education and parental health are predictive of partnership stability (see Fein, Burstein, Fein, & Lindberg, 2003 for a review) as well as parenting and child behavior (Brody & Flor, 1998; Klebanov et al., 1994; McLoyd, 1990). Finally, we control for two child characteristics, low birthweight (Reichman et al., 2004) and male gender (Lundberg, 2005), as both of these variables have been shown to be associated with partnership instability and child behavior problems.

In addition to the standard set of controls, we include several additional variables that are not typically available in most data sets but are likely to be highly correlated with relationship instability and child outcomes. These include the number of prior romantic relationships a mother has had, the number of different men with whom she has had children, whether she grew up in a stable home environment, and whether she was married, cohabiting, romantically involved but living apart (visiting), or not romantically involved with the child's biological father at birth (Carlson, et al., 2004; Osborne, 2005a). Including these variables reduces (but does not eliminate) the chances that the association between instability and poor child outcomes is caused by selection.

Method

Data

Our analysis is based on data from the first three waves of the Fragile Families and Child Wellbeing Study (Fragile Families). The Fragile Families Study is a stratified, multi-stage,

probability sample of approximately 5,000 births that occurred between 1998 and 2000. The data are representative of births in US cities with populations of 200,000 or more. The study design called for a large over-sample of nonmarital births and thus these data allow us to distinguish among different types of unmarried mothers, including cohabiting mothers and mothers who are romantically involved with the child's father but living apart; as well as different types of union transitions, including transitions into and out of cohabiting and dating relationships and transitions into and out of marriage. Mothers were interviewed in the hospital soon after their child's birth. Almost 90% of the mothers in the original sample ($N = 4,897$) were reinterviewed when the child was approximately 1 year old, and 88% were interviewed when the child was approximately 3 years old. Both the 1 year and 3 year core surveys were conducted by telephone. In addition, at year three, assessments of mothers' parenting and child well-being, including the Child Behavior Checklist (Achenbach, 1992), were completed for 80% of the mothers who completed the core interview at age three. Approximately 64% of the mother-child assessments were completed in their home whereas 36% were completed by telephone.

Our analytical sample includes 2,111 mothers. We exclude 312 mothers (6% of N) who were not interviewed at waves 2 and 3, an additional 1,207 mothers (25% of N) who did not complete the mother/child module at age 3, and an additional 1,267 mothers (26% of N) who, completed the module, but did not complete the mother and child module in the home. Mothers who did not complete the mother/child module do not differ systematically from mothers who did complete it on the variables included in this analysis, with the following exceptions. Mothers who did not complete the mother/child module have slightly higher incomes at baseline and year 3 interviews, they are somewhat more likely to have been raised by two parents, and they are significantly less likely to report that their parents experienced depression. In addition, mothers who completed the mother/child interview in person did not differ systematically from mothers who completed the interview by telephone (Berger, Paxson, & Waldfogel, 2005).

Child outcome measures

We examine two child behavioral problems, aggressive and anxious/depressed behavior, using subscales from the Achenbach 1992 Child Behavior Checklists for 2 to 3 year olds. Each mother was read a statement and asked to indicate whether the statement was not/never true (0), somewhat/sometimes true (1), or very/often true (2) of her child. The aggressive behavior scale consists of 15 items ($\alpha = .8624$), including defiant, demands must be met immediately, disobedient, easily frustrated, fights often, hits others, has angry moods, punishment does not change actions, screams a lot, selfish, temper tantrums, easily jealous, moody, unusually loud, and whiny. The anxious/depressed scale consists of 10 items ($\alpha = .6527$), including: too dependent, feelings hurt easily, looks unhappy, self-conscious/embarrassed, too fearful, unhappy, upset by separation from parent, overtired, shy, and wants attention. The child behavior measures are standardized to have a mean of 0 and a standard deviation of 1.

Partnership transitions

The main independent variable of interest is the total number of maternal partnership changes between the child's birth and the time of the three year interview. We focus on the beginning and ending of romantic relationships rather than changes in coresidential relationships for both substantive and methodological reasons. Substantively, we argue that romantic relationships, regardless of coresidence, may divert a mother's time, attention, energy, and resources away from her child, thus affecting her stress level and parenting behavior. We also argue that changes in coresidence are not as clear as they might seem to be (Knab, 2005; Manning & Smock, 2005). For example, one mother who lives with a partner four nights per week may consider herself cohabiting, whereas another mother who spends the same number of nights with her partner may consider herself to be in a dating (or visiting) relationship. Further, cohabiting relationships are often preceded by a period of dating and we are unable to determine

precisely when the transition between dating and living together occurs. For both these reasons, we focus on the beginnings and endings of romantic partnerships.

A few caveats are in order. If cohabiting parents marry after the birth of their child, or if non-cohabiting partners move in together, neither of these changes is considered a partnership transition for the reasons stated above; namely we are focusing on the beginning and ending of the romantic relationship. It is likely, however, that a transition to marriage may have significant benefits to the mother (Ellwood & Jencks, 2004) that do not exist in cohabiting or visiting relationships, and we would not capture this by excluding the transition to marriage in our count. Prior research using the Fragile Families data, however, shows that transitions from cohabitation to marriage are not associated with differences in mothering (Osborne, 2005b) or child behavior (Osborne, McLanahan, & Brooks-Gunn, 2005), thus excluding this transition as a separate transition will likely have only a small influence on our results. Separation from the child's biological father following the birth, however, is considered a transition if the parents are romantically involved at the child's birth (i.e. married, cohabiting, or visiting). Moreover, if a mother reports being 'separated' from the child's father at wave 2 and being back together with the father at wave 3 ($n = 72$), both events are counted as partnership transitions. In separate analyses (available from the authors on request) we determined that the results are robust to various methods of counting transitions.

Mothers were not asked about the number of partnerships that ended and began between interviews; rather they were asked about current partnerships at the time of each interview and whether their current partner was the same person as their partner in the previous wave. Thus we cannot identify partnership changes that begin and end between interviews. Mothers who report having a child with a new partner between the two interviews, however, are coded as having begun and ended a partnership if they were not in a relationship with this partner at the time of the interviews ($n = 158$). Presumably, we are undercounting the actual number of romantic

partnerships mothers enter and exit over the course of their child's first three years since we cannot count partnerships that are unobserved at either interview unless they involve a new birth. Thus, our results should be interpreted as a lower bound estimate of the incidence of partnership instability. Alternatively, by including all romantic partnerships, we may be overestimating the number of partnerships that have an impact on the mother and child.

Mediating variables

We examine four potential mediating variables: changes in income, number of residential moves, maternal stress, and poor quality mothering. Income change is measured as the difference between mother's household income at year 3 and mothers' household income at baseline (divided by \$10,000). Household income is continuous and is based on the mother's report. Residential mobility is measured by mothers' reports of how many times she (and therefore the child) has changed residences between the child's birth and the year 3 interview. Maternal stress is measured by a 10 item scale ($\alpha = .8488$). Responses ranged from 1 to 5, and are recoded such that a higher score indicates higher levels of stress. The sum of the responses was divided by the number of questions (10) to produce a measure with a range of 1 to 5. Many of the items were borrowed or adapted from the Early Head Start evaluation. The ten questions were asked of the mother at the wave 3 interview and include: the mother often has feelings that she cannot handle things well, finds herself giving up more of her life to meet her child's needs than she expected, feels trapped by her responsibilities as a parent, has been unable to do new things since having the child, feels she is never able to do things she likes since having the child, is bothered by quite a few things in her life, feels having child has caused her more problems than she expected in her relationship with men, feels alone and without friends, expects to have a bad time when she goes to a party, is less interested in people than she used to be, is unhappy with the last purchase of clothing for herself, and enjoys things less than she used to.

Mothering behavior is based on 4 subscales created from the infant-toddler version of the HOME inventory (Bradley & Caldwell, 1977). Mothers are coded 1 on each of the subscales if they score in the bottom quintile on (1) punitive punishment, (2) lack of emotional responsiveness, (3) lack of verbal/social skills, and (4) low language literacy. We created a mothering measure from these subscales that ranges from 0 to 4, with a 4 indicating that the mother scores poorly (in the bottom quintile) on all 4 HOME subscales. To create the HOME subscales, each measure of mother-child interaction was observed during the in-home assessment. Each observation is based on a dichotomous (yes/no) assessment by the observer, and the observations are summed into scales such that a higher score represents more positive parenting behavior. The non punitive scale consists of 5 questions including, the mother does not shout, express annoyance, spank, scold or criticize, or interfere or restrict the child during the visit ($\alpha = .7619$). The emotionally responsive scale represents parental warmth and consists of 6 items including the mother talks with the child 2 or more times during visit, responds to the child's questions orally, praises the child during the visit, voices positive feelings toward the child, kisses or hugs the child, and tells the child the name of an object during the visit ($\alpha = .7377$). The verbal/social scale consists of 3 items and reflects the language skills the mother models for the child. The questions indicate whether the mother's speech is audible, whether she initiates verbal exchange with the observer, and whether she converses freely and easily during the visit ($\alpha = .6860$). The language/literacy scale consists of 11 items that include (1) the types of toys the child has in the house (to stimulate gross and fine motor skills), (2) having 5 or more books in the house, and (3) the mother reading to the child 2 or more times per week. The language/literacy scale is the only one of the four scales that is primarily based on the mothers' reports rather than interviewer observation ($\alpha = .7128$).

Control variables

The mother's relationship status with her child's biological father at the time of the child's birth is measured by four categories: married, cohabiting, visiting, and single. Cohabiting mothers are those who report living with their child's biological father at the child's birth and mothers who report living with the child's father 'most or all of the time' at years 1 and 3. Mothers are coded as visiting if they report being romantically involved with their child's biological father at the child's birth but not living with him. Single mothers are those mothers who are not romantically involved with their child's biological father at the child's birth. Approximately 3% ($n = 8$ out of 271) of the mothers in the last group were living with a new partner when their child was born.

Mother's prior relationship instability measures the number of mother's romantic relationships lasting more than one month prior to her relationship with the child's biological father, and the number of other men with whom she has had children. Both of these questions were asked at the year 3 interview, but the measures are coded to reflect behavior prior to the focal child's birth. A dichotomous measure of whether the mother's parents were married when she was age 15 is also included in the models. These variables are expected to capture unobserved characteristics of the mother that are likely to be related to relationship instability, poor parenting, and children's behavior problems.

We include two variables to measure child characteristics: a dichotomous variable to indicate if the child is male, and a dichotomous variable to indicate whether the child was born with low birthweight (less than 2,500 grams). Both of these variables have been shown to be related to partnership status and child well-being (Lundberg, 2005; Reichman et al., 2004).

All of the additional control variables are measured at birth unless otherwise indicated. Mother's age is a continuous variable, and race/ethnicity is measured by a set of dummy variables for non-Hispanic White, non-Hispanic Black, Hispanic, and other. Mother's education is based on four dichotomous categories: less than high school, high school, some college or technical

training, and college degree or more. Mother's health and health behaviors are assessed based on four measures: the mother's self-reported health status (1 – 5), prenatal smoking, and her mother's or father's prior bouts with depression. Grandparent depression is based on questions asked of the mother at the year 3 interview. These variables may pick up a genetic tendency toward depression, or other unobserved characteristics of mothers who are more likely to experience depression. Ideally, we would control directly for the mother's depression, because her depression may influence her parenting and her reporting of her child's behavior (Rutter, 2005). Mothers' depression was not assessed until the year 1 interview, however. Thus her depression may be a consequence of her partnership instability, and cannot be considered a control variable. In analyses not reported here, we tested models that included the mother's depression at year 1, and the results were consistent with the ones shown in the final analysis.

Cases with missing data on the outcome and mothering variables were dropped from the analyses, as indicated above. For cases with missing data on the control variables we imputed missing values to the mean of the subgroup, based on mother's relationship status at her child's birth (i.e. married, cohabiting, visiting, or single), and included a flag to indicate that the case had missing data. In no instance did we impute missing values for more than 5% of the cases.

Analytic strategy

To determine the association between partnership instability and child behavior we employ ordinary least squares regression techniques. We estimated 3 models for each outcome. The first model estimates the bivariate association between the number of partnership changes and child's aggressive and anxious/depressive behavior at age 3. The second model adds mothers' background characteristics, including demographic characteristics (age, race/ethnicity), education level, health and health behaviors (self-reported health, prenatal smoking, parents' depression), and prior instability (prior romantic relationships, number of other fathers for children, and parents married at age 15). This model also includes two child characteristics (low

birth weight and male). The third model controls for possible mediators between partnership instability and child behavior and adds changes in household income between the child's birth and year 3, the number of residential moves between birth and age 3, maternal stress, and poor quality mothering, measured at year 3. We recognize that these variables may actually act as predictors of partnership instability rather than as mediators as presented in our theoretical model. To determine the direction of the relationship, we run various sensitivity tests that are described in greater detail below. Finally, to determine if the effects of partnership instability on child behavior are similar across race/ethnic groups and family structures, we interact the number of partnership changes with each of these variables (separately) in models equivalent to Model 2 presented above.

Results

Descriptive statistics

Table 1 shows the distributions of the child behavior measures and the other variables used in this analysis by the mothers' relationship with the focal child's biological father at the child's birth. With few exceptions, married mothers differ significantly from unmarried mothers; however, there are very few differences among unmarried mothers. For child behavioral problems, a higher score indicates more problem behavior. Children born to married mothers have fewer reported aggressive and anxious/depressed behavioral problems. Based on the interpretation of the raw scores (not reported) compared to the national norms (Achenbach, 1992), children of married mothers have average scores in the 50th percentile of nationally-normed standards, whereas children born to unmarried mothers have average scores close to the 70th percentile of nationally-normed standards for 2 to 3 year olds (Achenbach, 1992). Scores above the 95th percentile are generally believed to indicate clinical problems; thus the mean for all children in this sample falls within the normal range of behavior (Achenbach, 1992).

Married mothers are approximately five years older than unmarried mothers (29 versus 24 years, respectively) and are more often White (41%) as compared to Black (28%) or Hispanic (24%). By contrast, over half of cohabiting mothers, three-quarters of visiting mothers, and two-thirds of single mothers are Black. Approximately one-third of married mothers have a college degree compared to less than 3% of unmarried mothers. Moreover, approximately two-fifths of unmarried mothers do not have a high school diploma, compared to only 15% of married mothers.

Marital status differences in health and health behaviors are somewhat mixed. The self-rated health status differentials among mothers are not very large. The difference in prenatal smoking, however, is considerable; over 20% of unmarried mothers report smoking during pregnancy, compared to 7% of married mothers. There are few differences in mothers' reports about their own parents' depression, with both groups reporting more depression among their mothers than fathers.

Married mothers report having had more partnership changes prior to the birth of their child than unmarried mothers, which is not surprising given that the former are, on average, five years older than the latter. Interestingly, married mothers have had children with fewer partners than unmarried mothers. This finding is consistent with the idea that married mothers spend a good deal of time 'searching' for mates before starting their families, whereas unmarried mothers start their families early in the 'search' process (Edin & Kefalas, 2005). Finally, child gender is similar for married and unmarried mothers, although low birthweight is nearly twice as common among unmarried mothers as married mothers.

With regard to the mediating variables, only married parents experience a significant increase in their household income between the child's birth and age 3. Among unmarried mothers, household income is relatively flat. Married mothers report approximately half the number of residential moves between the child's birth and age 3 as unmarried mothers report, and there are no significant differences among the unmarried mothers. In addition, married

mothers report significantly lower levels of maternal stress than unmarried mothers, and mothers who are not in a relationship report the highest levels of maternal stress. Mothers who are married at their child's birth are also significantly less likely to exhibit poor mothering behaviors when their child is age 3, as compared to mothers who are unmarried at their child's birth. Mothers who are romantically involved with their child's father but living apart (visiting mothers) have the poorest observed mothering behaviors.

Prevalence of partnership instability

The first question we address is: how many partnership transitions are children exposed to during the first three years of life, and how does exposure differ by race/ethnicity and family structure at birth? The results indicate that partnership instability varies substantially by family structure (Table 2). Children born to married mothers are significantly less likely to experience a partnership transition than children born to unmarried mothers; and children born to cohabiting mothers are less likely to experience a transition than children born to unmarried mothers who do not live with a partner (visiting or single mothers). Moreover, if a child born to a married mother does experience a transition, it is generally only one, whereas children born to unmarried mothers are likely to experience multiple transitions.

Over 87% of children born to married mothers experience zero partnership transitions by age 3, as compared to 50% of children born to cohabiting mothers, 30% of children born to visiting mothers, and 26% of children born to single mothers. Children whose mothers live apart from their biological father at birth (visitors and singles) are at high risk of experiencing multiple partnership transitions; over 20% of children born to visiting mothers and 30% of children born to single mothers experience three or more partnership transitions in the first three years of life. By contrast, less than 10% of children born to cohabiting parents and less than 3% of children born to married parents experience such high levels of instability. The differences are also stark when the mean number of transitions is considered. Children born to married mothers experience .22

transitions between birth and age 3, on average, as compared to .92 for children born to cohabiting mothers, and approximately 1.50 for children born to visiting and single mothers.

Prior studies have not included transitions in and out of romantic partnerships, but rather have focused on marital and cohabiting transitions. Table 2 illustrates how much instability we would observe in this sample if we only counted cohabiting or marital transitions. The results show significantly fewer partnership transitions for all groups, but especially for mothers who are visiting or single when their child is born. By counting only marital and cohabiting relationships, we miss about 15% of the transitions experienced by children born to married or cohabiting parents, approximately 25% of the transitions experienced by children born to visiting mothers, and almost 50% of the transitions experienced by children born to single mothers. By counting only marital transitions, we miss about half of the transitions experienced by children born to married mothers and almost all of the transitions experienced by children born to unmarried mothers. We capture most of the transitions experienced by children born to married mothers because these transitions are nearly all separations from a marriage.

With regard to the differences in prevalence of transitions by race/ethnicity, we find that Black children experience the most partnership transitions (1.28), White children experience the fewest (.57), and Hispanic children fall between (.76) (results not shown). The results in Table 2 show that Black children born to married or cohabiting parents experience significantly more transitions compared to White or Hispanic children, but that the differences by race/ethnicity among children born to parents who do not live together are small. This finding is important because it is most common for White children in this sample (48%) to be born to married parents, whereas Hispanic children (47%) are most commonly born to cohabiting parents, and Black children (38%) are most commonly born into visiting relationships. Thus, the difference in instability across race and ethnic groups, particularly between Black and White children, is

driven by the different relationship statuses of the children's parents at the child's birth in conjunction with differing levels of instability within a given relationship status.

Multivariate analyses

The next question we address is, how are maternal partnership transitions associated with children's behavior at age 3; and does this association differ by race/ethnicity and family structure at birth? The first three columns of Table 3 report the results for childhood aggression. Consistent with prior research on older children and adolescents, partnership instability is positively associated with behavioral problems in children as young as age 3. Model 1 shows that each partnership transition is associated with an increase in aggressive behavior equivalent to 9% of a standard deviation. Although this effect size is modest, the effects accumulate with each transition. Thus small differences can add up to substantial effects. In Model 2, we control for a host of background characteristics of the mother. These variables reduce the coefficient for partnership instability on aggressive behavior by more than half; the coefficient declines to an effect size of approximately 4% of a standard deviation.

Interestingly, children born to cohabiting and visiting mothers show no differences in aggressive behavior at age 3 relative to children born to married mothers nor compared to each other ($p = .90$), net of background characteristics of the mother. Children born to single mothers, however, show significantly higher levels of aggressive behavior than children born to married mothers, net of the number of changes they experience and the control variables. In fact, living in a single-mother household is equivalent, in terms of risk for aggressive behavior, to experiencing 5.25 partnership transitions.

Importantly, children born to single mothers are the most likely to experience partnership instability; over 30% experience 3 or more changes. The combined risks associated with being born to a single mother and multiple partnership changes place these children at extreme risk of elevated aggressive behavior relative to their counterparts born to married parents who experience

fewer partnership changes. Several other factors, including, the mother's age, education level, health, and prior instability, and the child's gender are also predictive of aggressive behavior.

The results for anxious/depressive behavior are similar to those for aggressive behavior. The last three columns of Table 3 show that each partnership transition is associated with more anxious/depressive behavior, equivalent to an effect size of 9% of a standard deviation. The control variables introduced in Model 2 explain 56% of the effect of partnership instability on anxious/depressed behavior, yet the effect remains statistically significant. Ethnicity, education, and health are also predictive of anxious/depressive behaviors.

Robustness checks

To determine if our results are sensitive to how we measure partnership instability and how we defined our sample, we performed a number of sensitivity tests. First, we examined categorical specifications of partnership transitions and found that the effects are generally linear and additive. We estimated a model using the same variables as included in Model 2, and measuring transitions as 1 change, 2 changes, 3 changes, or 4 or more. For aggressive behavior, the standardized coefficients were -.02 for one transition, .04 for two transitions, .12 for three transitions and .15 for four or more transitions. Wald tests revealed that there are no threshold effects and that the effects are additive. However, one should be cautious in interpreting these results since the coefficients themselves indicate that one transition has no effect on child behavior whereas three or more transitions have large effects. To be consistent with prior research and to be more parsimonious, we opted to measure partnership transitions as a linear variable. The results are similar for anxious/depressive behavior.

In addition, we might find larger effects associated with more transitions because children who experience more changes, by definition, have also experienced more recent changes, and the effect of recent changes is likely worse than those that occurred prior to age 1. We tested this by limiting our analysis to partnership transitions between the child's first and

third years, and found the results are consistent with the ones that include changes in the first year. Moreover, it is important to note that we cannot account for changes that occur within interview waves which increases the measurement error in our count of transitions. This increase in measurement error makes finding significant differences more difficult because it increases our standard errors. Finally, we investigated whether the effect of partnership transitions was linear and additive regardless of the initial relationship status of the mother by running separate models using the count variables for transitions for each relationship status, and testing for significant differences across models. It is likely that the first transition for married parents (i.e. separation) would have a different effect than the first transition for single mothers (i.e. forming a new partnership). Nonetheless, we found that the effects of the transitions are similar, linear, and additive for all groups.

Next we looked at whether the results were sensitive to including transitions in dating relationships. We found that the effect of partnership transitions, when limited to coresidential transitions, was very similar to the effect when all transitions were included. For aggression, the standardized coefficients (based on the equivalent of Model 2) were .0367 for all transitions and .0366 for coresidential (married and cohabiting) transitions only. For anxious/depressive behavior, the differences were somewhat larger, but still quite small (.0347 for all transitions and .0260 for coresidential transitions only).

We also looked at whether our results were sensitive to the exclusion of mothers who did not complete the mother-child assessment in person (and thus their mothering behaviors were not observed). As noted above, 3,318 mothers completed the mother-child module, but only 2,111 completed it in their home rather than by telephone. We found that the effect of transitions on child behavior problems was similar for the two samples. In models equivalent to Model 2, for aggressive behavior, the standardized coefficient on partnership transitions was .0376 for the larger sample as compared to .0367 for the limited sample; for anxious/depressive behavior, the

standardized coefficients are .0384 and .0347, respectively. We chose to limit this analysis to the mothers who completed the child module in the home rather than by telephone because we wanted to use the observed measure of mothering quality rather than rely solely on maternal reports of her interactions with her child.

Moderators

To determine if the effect of partnership instability is conditioned by the child's race/ethnicity or family structure at birth, we tested for significant interactions between partnership transitions and these other variables (using a model similar to Model 2). The results are reported in a note in Table 3. None of these interactions is significant with one notable exception: partnership instability appears to be more strongly associated with aggressive behavior among Hispanic children as compared to Non-Hispanic White children ($\beta = .12; p = .01$). The stronger effect for Hispanics is not something that has been found in the previous literature, primarily because Hispanics have rarely been examined separately. Although this significant interaction could be spurious, given that so many interactions were tested, it merits more serious attention in future work. In additional analyses, not shown, we separated the Hispanic group according to their nativity status, to determine if the effect of instability was different for native born Hispanic mothers and immigrant mothers. Although foreign born Hispanics have more stable relationships than native born Hispanics (Osborne et al., 2007; Sweeney & Phillips, 2004), we did not find that the effect of instability differed by nativity status.

Our findings are inconsistent with prior studies that have found that the effects of family instability are stronger for Whites. The fact that previous studies have found weaker effects for Blacks may be because previous studies have not counted changes in cohabiting and dating relationships, thus missing a large proportion of transitions in this group. The difference could also be because the results are sensitive to the age of the child. The studies that found significant interactions were looking at older children. In any case, our findings indicate that future research

should continue to try to determine if family instability has differential effects for various children, with more attention paid to Hispanics.

Mediators

The final question we address is whether changes in resources and residence, maternal stress, and poor quality parenting mediate the effect of partnership instability on child behavior problems. Our theoretical model posits that partnership instability introduces stress in the household because of changes in resources, which undermine a mother's interaction with her child. These factors will, in turn, negatively affect a child's behavior. Model 3 in Table 3 reports the results of this analysis for aggressive behavior in children. The results indicate that maternal stress and parenting do mediate the effect of partnership instability on aggressive behavior; the coefficient on partnership instability declines to 2% of a standard deviation when the mediators are introduced to the model, and the effect is no longer significant. Changes in income and residence are not significant predictors of aggressive behavior. In other analyses, we introduced each of the mediators separately to the model; changes in resources and residence did not attenuate the effect of partnership instability, whereas maternal stress and mothering behaviors attenuated the effect of partnership instability to a similar degree when entered separately. Maternal stress and poor mothering also attenuate the single mother effect as well as the effects of mothers' education and health on children's aggressive behavior; the coefficients on these variables decline substantially when maternal stress and poor mothering are included in the model. Maternal stress, however, appears to attenuate the effect of these other variables more than mothering behavior as indicated by a larger decline in these coefficients when maternal stress is introduced independent of mothering behaviors than vice versa. Interestingly, maternal stress and poor mothering behaviors have largely independent effects on aggressive behavior. The sizes of the coefficients for each of these variables when entered jointly is very similar to the sizes of the coefficients when the variables are entered individually (results not

shown). This finding is important because, in our analysis, maternal stress is self-reported whereas poor quality mothering is based on interviewer observations.

Table 3 also reports similar results for anxious/depressive behavior. Model 3 shows that maternal stress and poor mothering jointly explain the significant effect of partnership instability on anxious/depressed behavior in 3 year old children. The coefficient on partnership instability declines to .02 of a standard deviation and is no longer significant. As with aggressive behavior, changes in economic resources and residence do not mediate the association between partnership transitions and child behavior and the effects of maternal stress and poor mothering on anxious/depressed behavior are largely independent; the coefficients change very little between introducing the variables individually and jointly (results not shown).

Robustness Checks

Again, we performed several different tests to determine whether our results were sensitive to our exclusion restrictions and whether our findings were consistent with the reverse causality hypothesis. To address the first issue, we re-estimated the model, using questions on mothers' behavior taken from the core survey. In the core survey, the mothers self-reported their behaviors with their child (e.g. number of days per week the mother played games, sang songs, told stories to, shows affection, etc.), whereas in the in-home version, the mothers were observed. The core mothering behaviors were predictive of child behavior, but did not attenuate the instability effect. We suspect that the reason for this finding is that the questions on mothering in the core survey are not as reliable as the in-home observations based on the HOME scale.

To address the reverse causality hypothesis – that partnership instability is caused by child behavior problems, poor mothering, and maternal stress – we estimated models that treated instability between years 1 and 3 as a function of child temperament, poor mothering, and maternal stress at year 1 (based on questions from the core 1 year survey). We found that none of these variables has a significant association with partnership instability, net of the mothers' background

characteristics and prior instability. The standardized coefficients were .03 for maternal stress ($p = .12$), .004 for child temperament ($p = .345$), and -.02 for poor quality mothering at year 1 ($p = .593$). This finding lends little support to the reverse causality hypothesis.

Discussion

Our analysis addressed three questions: First, what is the prevalence of partnership instability during the first three years of a child's life, and how does this differ by race/ethnicity and relationship status at the child's birth? Second, is partnership instability associated with child behavior problems at age three, and, if so, does the association differ by the child's race/ethnicity or family structure at birth? And finally, do changes in resources and residence, maternal stress, and poor quality parenting mediate the association between partnership instability and child behavioral problems?

With regard to the first question, we found that partnership instability is very common among children born to unmarried parents, particularly those born to mothers who are not living with their child's father. Between 25% and 30% of children born to noncohabiting mothers experience three or more partnership transitions by age 3. Ours is the first analysis that we know of to document this level of partnership instability at such an early age in children's development. Our analysis also shows that the level of partnership instability is substantially underestimated if dating relationships are not considered. This problem is especially serious for children born to African American parents whose mothers are least likely to cohabit or marry and most likely to experience multiple dating transitions. These findings are important for researchers interested in family change and children's family experiences and especially for those interested in race/ethnic differences in these experiences.

Regarding the second question, we found that partnership instability is positively associated with aggressive and anxious/depressive behavior in children at age 3. Whereas one partnership change has only a modest effect on child outcomes, effects accumulate with each

change, leading to large effects for children who experience multiple transitions. Because children with fewer resources are more likely to experience multiple partnership transitions and these transitions are negatively associated with child well-being, the increasing instability in families may be contributing to growing disparities among children. These findings are consistent with previous research on older children and adolescents which has focused on instability in marital and cohabiting unions.

Somewhat surprisingly, we found only one significant interaction between partnership instability and child's race/ethnicity and family structure at birth. Although the level of instability is much higher among children born to unmarried and minority mothers, the effect of instability on child behavior problems appears to be similar regardless of the relationship status from which the changes occur or the child's race/ethnicity. The one exception is that partnership instability appears to have more negative effects on aggressive behavior for Hispanic children as compared to Non-Hispanic White children. Although this association may have occurred by chance, future research needs to pay close attention to the effects of family structure changes on Hispanic children, as this group has thus far been largely ignored.

Finally, regarding the third question, we found that maternal stress and poor mothering behaviors jointly account for all of the significant effects of partnership instability on child's aggressive and anxious/depressive behavior. Maternal stress and poor mothering appear to have largely independent effects on child behavior, however. Although maternal stress and low quality mothering mediate the effect of partnership instability on child behavior, the pathway is not entirely consistent with our theoretical model. The social stress hypothesis posits that partnership instability will lead to more stress and poorer parenting because of changes in resources, however our findings do not support that changes in income or residential mobility explain the effect of instability on stress. We found that changes in resources are not an important part of this story, perhaps because unmarried mothers experience very little change in

their material resources, or because relationship transitions that lead to the accumulation of greater resources are cancelled out by relationship transitions that lead to a loss in resources. It is also likely that if we could measure the changes in resources at the time of the partnership transition, these might have a stronger effect, but, unfortunately the data do not permit this. Other mechanisms that explain how instability leads to greater stress and poorer mothering need to be explored in future work. It is likely that partnership instability leads to changes in emotional resources, unmeasured in this analysis, which affect a mother's stress level and interactions with her child. The positive or negative contributions to the family of the child's biological and new social fathers subsequent to family transitions also need to be explored more fully, because these may be affecting the mother's stress and parenting.

Limitations

Our analysis has several other limitations. First, our measure of instability is restricted to the first three years of a child's life and ignores disruptions that occur later in childhood and adolescence. By focusing on the first three years, we miss many of the transitions that children ultimately experience, especially children born to married parents. Since marital unions are slower to dissolve than nonmarital unions (Osborne, et al., 2007), by focusing on the first three years after birth, we miss most of the partnership changes that follow divorce. A longer time span is needed in order to know whether partnership instability among divorced mothers is as common as it is among never married mothers, once a relationship ends.

A second limitation is that children's behavioral problems are assessed at a very young age and only once. Although previous research shows a strong correlation between behavioral problems in early children and conduct disorders in adolescence and young adulthood (NICHD Early Childcare Research Network, 2004), we would prefer to have data covering a longer time span and multiple observations on each child.

Third, we are not able to determine if a change in residence directly coincides with a change in partnership. The data measure changes in residence separately from partnership transitions, but it is plausible that a partnership transition that also requires a change in residence may place more stress on the mother and have more harmful effects on the child. In this vein, we would like to have more detailed information on the changes in mothers' economic and social resources that are the direct result of partnership changes, but the data do not allow this.

Finally, and most important, our analysis is limited in its ability to identify causal effects. Because our data are observational rather than experimental, we cannot be certain that our measure of instability is not a proxy for some other (unobserved) characteristic of the mother that is causing partnership instability as well as more stress, poorer parenting, and behavior problems in children. To deal with this issue, we used a rich set of control variables, including the number of partnership transitions a mother has had at the time of child's birth, the number of different men with whom she has had children, and her relationship status with the father at the time of the birth. To deal with the reverse causality hypothesis, we conducted a number of additional analyses to determine if partnership instability was a consequence of child behavioral problems, poor mothering, or maternal stress. We found no evidence to support this hypothesis.

Policy Implications

Our findings have important implications for the new government programs funded under the welfare reauthorization act and designed to increase marriage and marital stability (Garfinkel & McLanahan, 2003). A subgroup of these programs is aimed explicitly at unmarried parents who have recently given birth. Although our analysis does not address the question of whether the children of unmarried parents would be better off if their parents married, it does suggest that reducing the number of partnership changes a mother experiences may lead to better child outcomes. At the same time, the strong link between maternal stress and child well-being

suggests that encouraging marriage among couples who are likely to breakup or among parents whose relationship is a source of stress is likely to have negative effects on children.

References

- Achenbach, T. M. (1992) *Manual for the Child Behavior Checklist/ 2-3 and 1992 Profile*.
Burlington VT: University of Vermont Department of Psychiatry.
- Ackerman, B., Brown, E., D'Eramo, K., & Izard, C. (2002). Maternal relationship instability and the school behavior of children from disadvantaged families. *Developmental Psychology*, 38, 694 – 704.
- Ackerman, B., D'Eramo, K., Umylny, L., Schultz, D., & Izard, C. (2001). Family structure and the externalizing behavior of children from economically disadvantaged families. *Journal of Family Psychology*, 15, 288 - 300.
- Ackerman, B., Kogos, J., Youngstrom, E., Schoff, K., & Izard, C. (1999). Family instability and the problem behaviors of children from economically disadvantaged families. *Developmental Psychology*, 35, 258 - 268.
- Acock, A. C., & Demo, D. H. (1994). *Family diversity and well-being*. Thousand Oaks, CA: Sage
- Ainsworth, M. (1969). Object relations, dependency, and attachment: A theoretical view of the infant-mother relationship. *Child Development*, 40, 969 - 1025.
- Amato, P. (2005). The impact of family formation change on the cognitive, social, and emotional well-being of the next generation. *Future of Children*, 15, 75 - 96.
- Avellar, S., & Smock, P. (2005). The economic consequences of the dissolution of cohabiting unions. *Journal of Marriage and Family*, 67, 315 – 327.
- 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.
- Berger, L., Paxson, C., & Waldfogel, J. (2005). Income and child development. Working Paper, Center for Research on Child Wellbeing, *Princeton University*, Princeton, NJ.
- Black, M., Dubowitz, H., & Starr, R. (1999). African American fathers in low income urban

- families: Development, behavior, and home environment of their three-year-old children. *Child Development, 70*, 967 – 978.
- Bowlby, J. (1977). The making and breaking of affectional bonds: Etiology and psychopathology in light of attachment theory. *British Journal of Psychiatry, 130*, 201 - 210.
- Bradley, R., & Caldwell, B. (1977). Home observation for measurement of the environment: A validation study of screening efficiency. *American Journal of Mental Deficiency, 81*, 417 - 420.
- Brody, G., & Flor, D. (1998). Maternal resources, parenting practices, and child competence in rural, single-parent African American families. *Child Development, 69*, 803 - 816.
- Brody, G., Neubaum, E., & Forehand, R. (1988). Serial marriage: A heuristic analysis of an emerging family form. *Psychological Bulletin, 103*, 211 - 222.
- Brown, S., & Booth, A. (1996). Cohabitation versus marriage: A comparison of relationship quality. *Journal of Marriage and the Family, 58*, 668 – 678.
- Capaldi, D. & Patterson, G. (1991). Relation of parental transitions to boys' adjustment problem: I. a linear hypothesis. II. mothers at risk for transitions and unskilled parenting. *Developmental Psychology, 27*, 489 - 504.
- Capaldi, D., Crosby, L., & Stoolmiller, M. (1996). Predicting the timing of first sexual intercourse for at-risk adolescent males. *Child Development, 67*, 344 - 359.
- Carlson, M., McLanahan, S., & England, P. (2004). Union formation in fragile families. *Demography, 41*, 237 - 262.
- Case, A., Lin, I., & McLanahan, S. (2000). How hungry is the selfish gene? *Economic Journal, 110*, 781 – 804.
- Cavanaugh, S., & Huston, A. (2006). Family instability and children's early problem behavior. *Social Forces, 85*, 575 – 605.
- Cherlin, A. (1998). Marriage and marital dissolution among Black Americans. *Journal of*

- Comparative Family Studies*, 39, special issue on Black Family Life in Comparative Perspective, 147 - 158
- Cockett, M., & Tripp, J. (1994). *The Exeter Family Study*. Exeter, UK: University of Exeter.
- Coley, R. (1998). Children's socialization experiences and functioning in single-mother households: The importance of fathers and other men. *Child Development*, 69, 219–230.
- Duncan, G., Dowsett, C., Claessens, A., Magnuson, K., Huston, A., Klevanov, P., Pagani, L., Feinstein, L., Engel, M., Brooks-Gunn, J., Sexton, H., Duckworth, K., & Japel, C. (2006). School readiness and later achievement. Unpublished manuscript, Northwestern University.
- Edin, K., & Kefalas, M. (2005). *Promises I can keep: Why poor women put motherhood before marriage*. Berkeley, CA: University of California Press.
- Ellwood, D., & Jencks, C. (2004). The spread of single-parent families in the United States since 1960. In D. P. Moynihan, T. Smeeding, & L. Rainwater (Eds.), *The future of the family*. (pp. 25 - 65). New York: Russell Sage Foundation.
- Fein, D., Burstein, N., Fein, G., & Lindberg, L. (2003). The determinants of marriage and cohabitation among disadvantaged Americans: Research findings and needs. Marriage and Family Formation Data Analysis Project, *Abt Associates Inc*.
- Fomby, P., & Cherlin, A. (forthcoming). Family instability and selection effects on children. *American Sociological Review*.
- Garfinkel, I., & McLanahan, S. (2003). Strengthening fragile families. In I. Sawhill (Ed.) *One Percent for the Kids: New Policies, Brighter Futures for America's Children* (pp. 76 – 92). Washington DC: Brookings Institution.
- George, L. (1989). Stress, social support, and depression over the life course. In K. S. Markides and C. L. Cooper (Eds.), *Aging, stress and health* (pp. 290). Chichester, England: John Wiley.
- George, L. (1993). Sociological perspectives on life transitions. *Annual Review of Sociology*, 19, 353 - 373.

- Ginther, D., & Pollack, R. (2004). Family structure and children's educational outcomes: Blended families, stylized facts, and descriptive regressions. *Demography*, *41*, 671 - 696.
- Hetherington, M., Bridges, M., & Insabella, G. (1998). What matters? What does not? Five perspectives on the association between marital transitions and children's adjustment. *American Psychologist*, *53*, 167 - 184.
- Hetherington, M., Clingempeel, W.G., Anderson, E., Deal, J., Hagan, M.S., Hollier, E.A., & Lindner, M. (1992). Coping with marital transitions: A family systems perspective. *Monographs of the Society for Research in Child Development*, *57* (2 - 3): R5.
- Hetherington, M., Cox, M., & Cox, R. (1982). Effects of divorce on parents and children. In M. Lamb (Ed.), *Nontraditional families: Parenting and child development*. Hillsdale, NJ: Erlbaum.
- Hetherington, M., Cox, M., & Cox, R. (1985). Long-term effects of divorce and remarriage on the adjustment of children. *Journal of the American Academy of Child and Adolescent Psychiatry*, *24*, 518 - 530.
- Holden, K., & Smock, P. (1991). The economic costs of marital dissolution: Why do women bear a disproportionate cost? *Annual Review of Sociology*, *17*, 51 - 78.
- Holmes, T., & Rahe, R. (1967). Social readjustment rating scale. *Journal of Psychosomatic Research*, *11*, 213 - 218.
- Klebanov, P., Brooks-Gunn, J., & Duncan, G. (1994). Does neighborhood and family poverty affect mother's parenting, mental health, and social support? *Journal of Marriage and the Family*, *56*, 441 - 455.
- Knab, J. (2005). Cohabitation: Sharpening a fuzzy concept. *Center for Research on Child Wellbeing*, Working Paper #2004 - 05 - FF. Princeton University.
- Kurdek, L., Fine, M., & Sinclair, R. (1995). School adjustment in sixth graders: Parenting transitions, family climate, and peer norm effects. *Child Development*, *66*, 430 - 445.
- Levine, S. (1980). A coping model of mother-infant relationships. In S. Levine and H. Ursin (Eds.),

- Coping and health*. New York: Plenum.
- Lundberg, S. (2005). Sons, daughters, and parental behavior. *Oxford Review of Economic Policy*.
- Maier, S., & Seligman, M. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology*, *105*, 3 - 46.
- Manning, W. (2001). Childbearing in cohabiting unions: Racial and ethnic differences. *Family Planning Perspectives*, *33*, 217 - 223.
- Manning, W., & Brown, S. (2006). Children's economic well-being in married and cohabiting parent families. *Journal of Marriage and Family*, *68*, 345 – 362.
- Manning, W., & Smock, P. (2005). Measuring and modeling cohabitation: New perspectives from qualitative data. *Journal of Marriage and Family*, *67*, 989 - 1002.
- Martin, S. (2004). Growing evidence for a divorce divide? Education and marital dissolution rates in the United States since the 1970's. Russell Sage: Series on Social Dimensions of Inequality.
- McDonald, K., & Armstrong, E. (2001). Deromanticizing black inter-generational support. *Journal of Marriage and Family*, *63*, 213 – 223.
- McLanahan, S. (2004). Children and the second demographic transition. *Demography*, *41*, 607 - 628.
- McLanahan, S., & Sandefur, G. (1994). *Growing up with a single parent: What hurts, what helps?* Cambridge, MA: Harvard University Press.
- McLeod, J., & Kaiser, K. (2004). Childhood emotional and behavioral problems and educational attainment. *American Sociological Review*, *69*, 636 - 658.
- McLoyd, V. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioeconomic development. *Child Development*, *61*, 311 - 346.
- McLoyd, V., Cauce, A., Takeuchi, D., & Wilson, L. (2000). Marital processes and parental socialization in families of color: A decade review of research. *Journal of Marriage and the Family*, *62*, 1070 - 1093.
- Mineka, S., & Kihlstrom, J. (1978). Unpredictable and uncontrollable events: A new perspective on

- experimental neurosis. *Journal of Abnormal Psychology*, 87, 256 - 271.
- Najman, J., Behrens, B., Andersen, M., Bor, W., O'Callaghan, M., & Williams, G. (1997). Impact of family type and family quality on child behavior problems: A longitudinal study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 1357 - 1365.
- NICHD Early Child Care Research Network. (2004). Trajectories of physical aggression from toddlerhood to middle childhood. *Society for Research in Child Development*. Boston: Blackwell Publishing.
- Osborne, C. (2005a). Marriage following the birth of a child among cohabiting and visiting parents. *Journal of Marriage and Family*, 67, 14 - 26.
- Osborne, C. (2005b). Mothering in stable and unstable families. Working Paper #2003 – 08 - FF, *Center for Research on Child Wellbeing*. Princeton University.
- Osborne, C., Manning, W., & Smock, P. (2007). Married and cohabiting parents' relationship stability: A focus on race and ethnicity. Working Paper #2004 – 17 - FF, *Center for Research on Child Wellbeing*. Princeton University.
- Osborne, C., McLanahan, S., & Brooks-Gunn, J. (2005). Young children's behavioral problems in married and cohabiting families. Working Paper #2003 – 09 - FF, *Center for Research on Child Wellbeing*. Princeton University.
- Pavenstadt, E. (1965). A comparison of the child-rearing environment in upper-lower and very lower-lower class families. *American Journal of Orthopsychiatry*, 35, 89 - 98.
- Reichman, N., Corman, H., & Noonan, K. (2004). Effects of child health on parents' relationship status. *Demography*, 41, 569 - 584.
- Rutter, M. (1983). Stress, coping, and development: Some issues and some questions. In N. Garnezy and M. Rutter (Eds.), *Stress, coping, and development in children* (pp. 1 - 42). New York: McGraw Hill.
- Rutter, M. (2005). Environmentally mediated risks for psychopathology: Research strategies and

- findings. *Journal of the American Academy of Child and Adolescent Psychiatry*, 44, 3 - 18.
- Sweeney, M. & Phillips, J. (2004). Understanding racial differences in marital disruption: Recent trends and explanations. *Journal of Marriage and Family*, 66, 639 – 650.
- Ventura, S. & Bachrach, C. (2000). Nonmarital childbearing in the United States, 1940-1999. *National Vital Statistics Reports*, 48(16). Hyattsville, Maryland: National Center for Health Statistics.
- Waters, E. (1980). Traits, relationship, and behavioral systems: The attachment construct and the organization of behavior and development. In T. Immelmar, E. Barlow, M. Main, & L. Petrinoich (Eds.), *Development of Behavior*. New York: Cambridge University Press.
- Williams, K., & Umberson, D. (2004). Marital status, marital transitions, and health: A gendered life course perspective. *Journal of Health and Social Behavior*, 45, 81 – 98.
- Woodward, L., Fergusson, D., & Horwood, L. J. (2001). Risk factors and life processes associated with teenage pregnancy: Results from a prospective study from birth to 20 years. *Journal of Marriage and Family*, 63, 1170 - 1184.
- Wu, L. (1996). Effects of family instability, income, and income instability on the risk of a premarital birth. *American Sociological Review*, 61, 386 – 406.
- Wu, L., & Martinson, B. (1993). Family structure and the risk of a premarital birth. *American Sociological Review*, 58, 210 – 232.
- Wu, L., & Thomson, E. (2001). Race differences in family experience and early sexual initiation: Dynamic models of family structure and family change. *Journal of Marriage and Family*, 63, 682 - 696.

Table 1: Distribution of variables by mother's relationship status child's birth

	Total <i>N</i> = 2,111	Married <i>n</i> = 456	Cohabiting <i>n</i> = 795	Visiting ^a <i>n</i> = 589	Single ^b <i>n</i> = 271
Child behaviors ^c					
Aggressive (<i>M</i> = 0; <i>SD</i> = 1)	0.09	-0.18	0.12	0.15	0.29
Anxious/depressive (<i>M</i> = 0; <i>SD</i> = 1)	0.08	-0.23	0.15	0.16	0.22
Demographic characteristics					
Age (years)	24.87	29.11	24.03	23.43	23.35
White	18.71	41.23	16.73	6.45	13.28
Black	54.52	27.85	51.82	74.36	64.21
Hispanic	23.02	23.68	28.68	16.47	19.56*
Education level					
Less than high school	34.91	15.13	38.36	40.92	45.02
High school	31.55	20.61	34.21	35.82	32.84
Some college	24.63	31.36	24.91	21.22	19.93
College	8.91	32.89	2.52	2.04	2.21
Health/health behaviors					
Fair or poor health	7.77	5.70	8.43	8.32*	8.12*
Prenatal smoking	19.89	7.02	22.89	23.09	25.83
Mother's mother depressed	27.43	29.39	29.56*	21.73	30.26*
Mother's father depressed	11.89	14.91	11.19	11.21*	10.33*
Prior instability					
Prior romantic relationships (mean)	2.07	2.80	1.97	1.63	2.09
Other fathers for children (mean)	0.24	0.08	0.22	0.32	0.42
Parents married at age 15	37.99	62.28	35.97	27.67	25.46
Child characteristics					
Male	52.34	50.88	50.31*	54.84*	55.35*
Low birthweight	9.09	5.26	8.93	11.71	10.33
Possible mediating variables					
Change in household income (Year 3 – Birth) (mean)	.23	1.04	0.01	0.07	-0.13
Residential moves (mean)	1.33	.79	1.53	1.36	1.61
Maternal stress (1 - 5) ^d (mean)	2.18	1.96	2.19	2.24	2.37
Poor mothering (0 - 4) ^e (mean)	0.79	0.45	0.81	0.96	0.93

Source: Fragile Families and Child Wellbeing Study.

Notes: ^aVisiting mothers are romantically involved with child's biological father, but do not co-reside. ^bSingle mothers are not romantically involved with child's biological father. ^cChild behaviors are based on subscales of the Child Behavior Checklist (Achenbach, 1992), and standardized to have a mean of 0 and standard deviation of 1. There are no significant differences in child behavior scores among children born to unmarried mothers. ^dSingle mothers report significantly higher levels of maternal stress than all other mothers. There are no significant differences between cohabiting and visiting mothers. ^eMothering behaviors are based on the sum of four dichotomous measures of poor parenting created from subscales from the HOME assessment: punitive, not emotionally responsive, not verbal social, and low language/literacy. Visiting mothers score significantly worse than all other mothers; there are no significant differences between cohabiting and single mothers.

*Value does not differ significantly from married at the $p \leq .05$ level; all other measures for unmarried mothers differ significantly from married mothers at the $p \leq .05$ level.

Table 2: Distribution of maternal partnership transitions between child's birth and age 3 by relationship status at child's birth

<i>n</i>	Married 456	Cohabiting 795	Visiting ^a 589	Single ^b 271
Count of transitions (%)*				
0 Transitions	87.28	50.06	30.56	26.20
1 Transition	6.80	25.03	29.54	24.35
2 Transitions	3.73	15.22	19.52	18.82
3 Transitions	1.10	3.02	7.13	25.83
4+ Transitions	1.10	6.67	13.25	4.80
Mean number of transitions				
All transitions ^c	.22	.92	1.45	1.59
Coresidential transitions ^d	.19	.79	1.11	.86
Marital transitions ^e	.14	.03	.01	.08
Transitions by race/ethnicity (mean)				
Non-Hispanic White	.11	.87	1.03	1.42
Non-Hispanic Black	.47	1.11	1.55	1.62
Hispanic	.15	.62	1.28	1.62
Other	.09	.82	.94	1.75

Source: Fragile Families and Child Wellbeing Study.

Note: ^aVisiting mothers are romantically involved with child's biological father, but do not coreside. ^bSingle mothers are not romantically involved with child's biological father.

^cTransitions include entrances and exits from marital, cohabiting, or dating relationships.

^dTransitions include entrances and exits from marital and cohabiting relationships. ^eTransitions include entrances and exits from marital relationships only.

* All unmarried mothers differ significantly from married mothers.

Table 3: Analyses of partnership transitions on child behavior^a
Results of OLS regression models

	Aggressive behavior			Anxious/depressive behavior		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Partnership transitions ^b	.09**	.04*	.02	.09**	.04*	.02
Relationship status at birth						
(Married)						
Cohabiting		.09	.07		.10	.07
Visiting		.10	.07		.09	.05
Single		.21*	.13†		.12	.06
Demographic						
Age		-.01**	-.01**		-.00	-.00
(White)						
Black		.04	-.02		.06	.01
Hispanic		.08	.08		.19*	.19**
Other		.14	.02		.27*	.17
Economic resources						
(Less than high school)						
High school		-.08	.00		-.23**	-.16**
Some college		-.20**	-.05		-.50**	-.38**
College		-.29**	-.09		-.68**	-.51**
Health/health behaviors						
Fair or poor health		.21**	.12		.20*	.12†
Prenatal smoking		.16**	.08		.06	-.00
Mother's mother depressed		.15**	.09*		.14**	.09†
Mother's father depressed		.09	.09		-.04	-.03
Prior instability						
Prior relationships		.01	.02†		-.01	-.00
Other fathers for children		.06†	.03		.04	.02
Parents separated at age 15		.05	.02		.08†	.06
Child's characteristics						
Male		.14**	.11**		.05	.03
Low birthweight		.04	.01		.06	.03
Possible mediating variables						
Change in income			-.01			.00
Residential mobility			-.01			.01
Maternal stress (1 – 5)			.42**			.32**
Poor mothering (1 – 4)			.13**			.11**
N	2111	2111	2111	2111	2111	2111
Constant	-.01	.09	-.83	-.01	.09	-.66
R-squared	.0141	.0656	.1687	.0143	.1055	.1698

Source: Fragile Families and Child Wellbeing Study. *Notes:* ^aBehavior is standardized with a mean of 0 and a standard deviation of 1. ^bTests for interactions between partnership instability and race/ethnicity and partnership instability and relationship status yielded only one significant result: Partnership instability is associated with more aggressive behavior among Hispanic children relative to White children ($\beta = .12$; $p = .01$). ** $p \leq .01$; * $p \leq .05$; † $p \leq .10$.