

Partnership Instability, School Readiness, and Gender Disparities*

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Abstract

Trends in family formation during the past several decades have increased children's exposure to mothers' partnership instability, defined as an entrance or exit from a coresidential union or a dating partnership. Instability, in turn, is associated with negative outcomes in children and adolescents. This study uses data from the Fragile Families and Child Wellbeing Study to examine associations between mothers' partnership instability and children's school readiness, differences between coresidential and dating transitions, and the moderating role of child gender. Mothers' partnership transitions are negatively associated with children's verbal ability and positively associated with boys' behavior problems at age five. In general, coresidential and dating transitions have similar effects on school readiness. The findings have important implications for our understanding of the growing gender gap in educational attainment.

Partnership Instability, School Readiness, and Gender Disparities

Increases in divorce, cohabitation, and non-marital childbearing during the past few decades have increased children's exposure to partnership instability, defined as a parent's entrance or exit from a coresidential union (i.e., marriage or cohabitation) or a dating partnership. In turn, exposure to partnership instability has been shown to increase behavioral problems in children and adolescents that interfere with school commitment and success (Cavanagh, Crissey and Raley 2008; Cavanagh and Huston 2006; Fomby and Cherlin 2007; Osborne and McLanahan 2007; Wu and Martinson 1993; Wu and Thomson 2001). Partnership instability is especially pronounced among low-income populations and racial/ethnic minorities (Ventura and Bachrach 2000), suggesting that recent changes in family experiences may be exacerbating race/ethnic and class disparities in children's life chances (McLanahan and Percheski 2008).

Partnership instability may also be contributing to the growing gender gap in educational attainment. Whereas prior to the 1980s, boys obtained more schooling than girls, today, girls are more likely than boys to finish high school, enter college, and graduate from college (Buchman, DiPrete and McDaniel 2008). Importantly, the growing gender gap in education occurred during the same period as the increase in partnership instability, suggesting that the two trends may be related. Although we would expect boys and girls to have similar levels of exposure to family instability,¹ there is some

¹ Although earlier research suggested that the presence of a male child reduces the likelihood of divorce, recent research finds no gender difference (Lundberg, McLanahan and Rose 2007).

evidence that boys are more negatively affected by instability than girls (Biller 1981; Cavanagh et al. 2008; Hetherington, Cox and Cox 1985). This implies that the increase in family instability during the past few decades may have disadvantaged boys relative to girls.

Prior research on instability and child outcomes has focused largely on older children and adolescents, ignoring the link between early instability and child development at the time children enter school. How children are doing at school entry is important because a successful transition to formal schooling sets the stage for all subsequent development and achievement. Inequalities in behavioral and cognitive abilities at the start of school are strikingly persistent across the life course (Entwisle, Alexander and Olson 2005). Moreover, there is growing evidence that gender gaps in cognitive and behavioral skills exist at school entry (DiPrete and Jennings 2008; Zill 1999).

This paper examines three questions involving the link between partnership instability and children's school readiness: 1) Is early exposure to partnership instability associated with lower cognitive ability and more behavior problems for children at school entry? 2) Is the association similar for coresidential and dating transitions? And 3) Is the association between partnership instability and school readiness stronger for boys than for girls? Our study moves beyond prior work in several ways. First, we use data from the Fragile Families and Child Wellbeing Study, a national survey that follows approximately 5,000 parents and their children from birth to age five. These data include a large oversample of children born to unmarried parents who are at increased risk for experiencing multiple partnership transitions. More importantly, they provide information

on mothers' cohabiting and dating relationships as well as marital unions which allows us to construct a more comprehensive picture of children's exposure to partnership instability than is typically provided in prior research. Second, recent research suggests that mothers' dating transitions are detrimental to early development (Osborne and McLanahan 2007), but only one study to date has explicitly compared residential and nonresidential transitions (Beck et al. forthcoming) and this study does not examine child outcomes. We extend previous research by including mothers' dating transitions as part of children's experience of family instability and by comparing the strength of the associations between types of transitions and children's school readiness. Third, we examine gender differences in exposure and response to mothers' partnership instability. Whereas some research finds that boys are more negatively affected by family disruption than girls, the results of these studies are inconsistent and have not focused on cognitive and behavioral outcomes at the time of school entry. Finally, we employ multiple techniques to gauge the robustness of hypothesized patterns in relation to important selection processes. Researchers argue that the characteristics of parents who undergo partnership transitions differ substantially from those in stable relationships and these differences, rather than instability, may be the source of poor child outcomes (Amato 2006; Sigle-Rushton and McLanahan 2004). Yet, few studies attempt to assess the extent to which observed associations between partnership instability and child well-being can be attributed to selection.

BACKGROUND

Children's School Readiness

The start of formal schooling represents a major life transition during early childhood. Children must adapt to a new environment, establish relationships with new authority figures and peers, and conform to a new set of expectations. The extent to which children are cognitively and behaviorally ‘ready’ (i.e., prepared) for this transition is critical because this period has important and long-lasting consequences (Pianta, Cox and Snow 2007). Children’s experiences and performance at the start of school serve as a foundation for future academic progress and launch children into trajectories of achievement. Given the cumulative nature of the school curriculum, children who perform poorly in early grades often fail to recover in later grades (Barnett 1996). Moreover, school records of academic and behavioral problems follow children across grades and schools, influencing teachers’ beliefs and expectations which, in turn, affect children’s future success in school (Entwisle and Hayduk 1988).

School readiness is typically measured as cognitive skills (e.g., math, reading, and verbal ability) as well as social and behavioral problems (e.g., externalizing and internalizing behavior, attention problems, and social problems). Although there is considerable debate regarding which of these skills is most important and the extent to which they influence one another (DiPrete and Jennings 2008; Duncan et al. 2007), research suggests that many children are not prepared for either the intellectual or the behavioral demands of school (Pianta et al. 2007). In particular, boys show up for school less prepared to learn (DiPrete and Jennings 2008; Zill 1999) and have slower progress through their schooling years than girls (Alexander, Entwisle and Dauber 1993; McCoy and Reynolds 1999). There is some evidence that gender differences are greater among

low-income and racial/ethnic minority children (Hinshaw 1992; Moudiddin 2008; but see DiPrete and Jennings 2008 for conflicting evidence). Family characteristics that are consistently correlated with school adjustment problems include low parental education, poverty, single parenthood, and family disruption (Crosnoe and Cooper forthcoming; Entwisle, Alexander and Olson 1997; Magnuson and Waldfogel 2008; Stipek and Ryan 1997; Zill 1999).

Partnership Instability and Child Well-Being

Over the past twenty-five years, the social and behavioral sciences have accumulated a wealth of empirical evidence linking parental divorce/separation with poor child outcomes, including internalizing problems (e.g., depression and anxiety), externalizing problems (e.g., antisocial behavior), and academic problems (e.g., low grades and low scores on achievement measures; Amato 2006; McLanahan and Sandefur 1994). Remarriage is also found to be associated with poor child outcomes (Hetherington et al. 1985). Although some of the association between divorce/remarriage and child outcomes is likely due to selection, there is considerable evidence that at least part of the association is causal (Amato 2006).

In recent years, the field has responded to the increasingly diverse and fluid nature of American families by studying trajectories or histories of family structure change and by incorporating cohabiting (Cavanagh and Huston 2006; Cooper et al. 2009; Fomby and Cherlin 2007; Meadows, McLanahan and Brooks-Gunn 2008) and dating (Beck et al. forthcoming; Osborne and McLanahan 2007) transitions into their investigations of family instability. Research on elementary school children, for example, suggests that

partnership instability (including changes in cohabiting unions) predicts parent- and teacher-reported behavioral problems (Ackerman et al. 1999; 2001; 2002; Cavanagh and Huston 2006; Kurdek, Fine, and Sinclair 1995). Other researchers have investigated the association between instability and cognitive outcomes of children in elementary school with mixed results. Kurdek and colleagues (1995), for example, report that partnership instability is negatively associated with academic achievement among sixth grade children, whereas Ackerman and colleagues (2002) find no significant effect of partnership instability on the academic competence of third grade children.

None of the research cited above has examined whether transitions into and out of coresidential and dating relationships have similar effects on children; nor have they investigated the association between multiple family transitions and children's behavioral and cognitive performance at the time of school entry. Moreover, little research in the field has carefully examined the extent to which selection is responsible for associations between partnership transitions and child outcomes.

Moderating Role of Child Gender

There are several theoretical reasons for expecting boys to respond more negatively to family disruption than girls. The presence of a male role model may be more important for boys' identity, boys may be harder to manage than girls, and/or mothers may treat sons differently than daughters because of negative emotions toward the father or because of concerns about their child's safety (Allison and Furstenberg 1989; Hetherington and Arasteh 1988; Rosen and Aneshensel 1978). The empirical literature also suggests that boys may be more negatively affected than girls by disruption

in the home (Biller 1981; Hetherington et al. 1985). Following a divorce, mother-son relationships are generally more strained than mother-daughter relationships (Hetherington et al. 1985) and boys exhibit more short- and long-term externalizing problems than girls (Demo and Acock 1988; Entwisle, Alexander and Olson, 1997).² Gender differences in behavior and achievement may be even more pronounced for children exposed to multiple partnership transitions. Insofar as boys take longer than girls to adjust to a family transition, multiple transitions may be particularly problematic for boys (Ackerman et al. 2001; Cavanagh and Huston 2008).

There is also evidence that boys are more sensitive than girls to stressors that co-occur with partnership instability. For example, some research suggests that boys are more negatively affected by changes in material resources, parental employment, and residence (Huston et al. 2003; Kling, Ludwig and Katz 2005). Among young children, parental conflict is more detrimental to boys' behavior, especially when it co-occurs with separation (Davies and Lindsay 2001; Maccoby and Martin 1983). As was true for research on instability more generally, no studies have examined gender differences in responses to partnership instability at the time of school entry.

METHODS

Data Source

The Fragile Families Study is a longitudinal, birth cohort survey that follows 4,898 children, including 3,712 born to unmarried parents and 1,186 born to married

² Other studies find no gender differences in response to parental divorce (Sun and Li 2002), and some research shows that girls exhibit more internalizing problems than boys (Furstenberg 1990).

parents (for a complete description of the sample and design, see Reichman et al. 2001). Baseline interviews were conducted between 1998 and 2000 in 20 American cities with populations of 200,000 or more. Mothers were interviewed in the hospital within 48 hours of their child's birth and fathers were interviewed shortly thereafter. Follow-up phone interviews were conducted with both parents when the child was one, three, and five years old, and supplemental assessments of mothers and children were conducted at ages three and five that gathered information on children's cognitive and socio-emotional outcomes.

Our analysis uses data from all four waves of the Fragile Families study. Of the 4,898 mothers in the original sample, we exclude mothers who lived less than half time with their child at some point in the study ($n = 150$). Because children's behavioral problems were assessed when mothers participated in the supplemental survey either at home or on the phone but children's verbal ability was assessed when mothers participated in the supplemental survey at home only, we use two separate samples. For children's verbal ability, we exclude mothers who did not participate in the supplemental survey at home, resulting in a sample size of 2,295. For children's behavioral problems, we exclude mothers who did not participate in the supplemental survey, either at home or on the phone, resulting in a sample size of 2,936.

To maximize the use of available information and minimize bias, we use the Multiple Imputation procedure in SAS to impute missing data for these mothers. Although Multiple Imputation is a valuable strategy for handling missing data with longitudinal data, imputing data that are not missing at random can produce biased

estimates of coefficients and standard errors (Allison 2001). Because mothers who left the study are not missing at random, we take a conservative approach to data imputation by imputing predictor variables only. Our final, imputed, analytic samples have observed characteristics that are very similar to the baseline sample (see Table 1 for detailed information on sample characteristics).

[Table 1 about here]

Measures

Children's school readiness. Children's *verbal ability* at age five is measured with age-standardized scores on the Peabody Picture Vocabulary Test-Revised (PPVT-R). The PPVT-R, a measure of receptive vocabulary, was administered to children during the five-year supplemental survey and assesses the size and range of words that children understand. Descriptive statistics for verbal ability and all other study variables are presented for the full sample in Table 2.

Behavioral problems at age five are measured using subscales derived from the Child Behavioral Checklist (Achenbach and Rescorla 2000). For each subscale, mothers report the extent to which statements about the child's behavior are true of the child (0 = not true, 1 = sometimes or somewhat true, 2 = often or very true). *Externalizing problems* are the sum of mother-reported responses to the aggression and rule-breaking behavior subscales ($\alpha = .84$). The aggression subscale is comprised of 14 statements about aggressive behavior, including attacks others, screams, sulks, is suspicious, teases,

argues, bullies, is disobedient at school, is disobedient at home, destroys other things, destroys own things, fights, threatens, and is unusually loud. The rule-breaking subscale assesses whether children engage in nine types of rule-breaking behavior: prefers being with older children, runs away from home, sets fires, steals at home, steals outside of home, swears, hangs around with others who get in trouble, lies or cheats, and vandalizes.

Internalizing problems are the sum of children's scores on the anxious/depressive and withdrawn behavior subscales ($\alpha = .68$). The anxious/depressive subscale assesses whether children feel overly guilty, self-conscious, worried that no one loves them, worried they might think or do something bad, worried that they have to be perfect, and worried in general. The withdrawn subscale asks mothers whether children are uninvolved in social activities, are secretive, are shy, are underactive, prefer to be alone, and refuse to talk.

Attention problems include five items that assess whether children do poor school work, stare blankly, are confused, day-dream, and act without thinking ($\alpha = .57$). Finally, *social problems* are measured by asking mothers whether children are poorly coordinated, are accident prone, are not liked by other children, prefer being with younger children, get jealous easily, get teased a lot, and feel others are out to get them. We retained this composite, despite its low reliability ($\alpha = .47$), because the items are designed to be used together.

Partnership instability. Coresidential transitions are measured by summing the number of times mothers transition in and out of coresidential relationships with

cohabiting or marital partners during the first five years following the focal child's birth.³ At each wave, mothers reported whether they were involved in a romantic relationship, whether they were living with a partner, and whether, if applicable, the current partner was the same partner identified in the previous wave. Based on this information, a coresidential exit or entrance between two waves is coded as one coresidential transition, while experiencing both (in either order) is coded as two coresidential transitions. At Wave 4, mothers were also asked how many romantic relationships lasting at least one month they had experienced since the last interview and whether they lived with any of these partners. Responses to these questions allow us to determine whether mothers were involved in relationships between Waves 3 and 4 that could not be identified based on reports of current status. Because mothers were not asked about their between-wave romantic relationships in earlier years, we are likely undercounting coresidential transitions between Waves 1 and 3. Note also that our measure of coresidential transitions does not examine whether mothers are changing residences, only whether they are transitioning into or out of a relationship that is coresidential in nature.

Dating transitions are counted similarly but are limited to transitions that do not involve a change in coresidence. We follow the measurement strategy of Osborne and McLanahan (2007) and Beck and colleagues (forthcoming) by coding mothers who

³ The vast majority of coresidential transitions are into and out of cohabiting unions rather than marital unions. Preliminary analyses revealed that associations between partnership instability and the child outcomes are similar for married and unmarried mothers at Wave 1; thus these two groups were collapsed for results presented here.

reported a pregnancy between two interviews as having entered and exited a dating relationship if they reported not having a partner at either time points. Importantly, we do not count changes in relationship status with the same partner (e.g., from cohabitation to marriage) as a partnership transition. Our final measure of partnership transitions sums coresidential and dating transitions to create a measure of the total number of transitions between Waves 1 and 4.

Controls. To minimize the possibility that the associations between family instability and child outcomes are spurious, all models control for the following demographic characteristics: marital status at birth (dummy variables for married, cohabiting, and living alone), maternal age in years at baseline, age in years at birth of first child, race/ethnicity (dummy variables for Black, Hispanic, White, and Other), immigrant status (1 = not born in United States), education (0 = high school degree or less, 1 = some college or more), poverty (dummy variables for poor or below 100 percent of the federal poverty line, almost poor or between 100 and 200 percent of the federal poverty line, and nonpoor or above 200 percent of the federal poverty line), parity (1 = first born), child gender (1 = male), child low birth weight (1 = below 2,500 grams), and child age in months at the in-home interview. We also control for an additional set of characteristics that are typically not available in other data sets, including mothers' cognitive ability (measured with the Weschler Adult Intelligence Scale – Revised), nonjoint births (whether she has children by another partner), partnership instability prior to focal child's birth (number of relationships lasting at least one month prior to

relationship with focal child's biological father), and maternal grandmothers' mental health (whether she suffered from depression or anxiety).

Analytic Techniques

Ordinary least squares regression techniques are employed to address each of our research questions. Our first step is to regress each of the child outcomes on the total number of partnership transitions and the full set of controls. Then, we replace total number of transitions with separate indicators of coresidential and dating transitions. Entering the two types of transitions into the same model allows us to test whether the coefficients for residential and nonresidential transitions are significantly different from one another. Next, we add interactions for child's gender and the two types of transitions to the previous model to examine whether associations between partnership transitions and outcomes vary by child gender.

Finally, because our data are observational (as opposed to experimental), we must consider the possibility that partnership instability is picking up the effect of a third (omitted) variable that is affecting both partnership instability and child outcomes. To investigate this possibility, we conduct three additional sets of analyses. First, we estimate lagged dependent variable models which include measures of child outcomes at age three. The lagged models control for unmeasured variables that are associated with child well-being at age three. Second, we estimate fixed effects models which examine the association between changes in partnership instability and changes in child outcomes. The fixed effects models are based on within-child changes in instability and well-being, and they control for unmeasured characteristics of the child that do not change over time.

Third, we estimate models that regress child outcomes at age three on future partnership instability (measured between ages three and five). The logic behind this ‘falsification test’ (Rothstein 2007) is that future instability cannot affect current child outcomes, and thus a positive coefficient would suggest that selection is a problem.

RESULTS

Table 2 presents the distribution of the study variables for boys ($n = 1,531$) and girls ($n = 1,405$) at age five. Beginning with the child outcomes, we find that boys have significantly lower scores on our measure of verbal ability compared to their female peers. They also experience more externalizing and attention problems but have fewer social problems than girls. Boys and girls have similar levels of internalizing problems. With regard to mothers’ partnership transitions, we find that boys and girls are exposed to similar levels of partnership instability between birth and age five, and dating transitions account for a majority of transitions for both boys and girls. Finally, boys and girls do not differ on the maternal and child control variables, with the exception of marital status at baseline. Boys and girls are equally likely to be born to married parents, but girls are more likely to be born to cohabiting parents than boys.

[Table 2 about here]

Our first research question asks whether partnership transitions are associated with children’s cognitive and behavioral readiness for school. Table 3 presents the results of OLS models predicting child outcomes at age five. We find that the total number of

partnership transitions experienced between birth and age 5 is negatively associated with children's verbal ability ($\beta = -.45, p \leq .01$), after controlling for maternal and child characteristics. Each partnership transition is associated with about one-half of a point decrease in verbal ability, which represents six percent of a standard deviation. Children exposed to a higher number of partnership transitions are also more likely to experience externalizing problems at age five than children exposed to fewer transitions ($\beta = .18, p \leq .001$). Exposure to one additional partnership transition results in about one-fifth of a point increase in the externalizing behavior index, which is equivalent to seven percent of a standard deviation. Partnership transitions are also associated with attention problems ($\beta = .03, p \leq .05$) and social problems ($\beta = .04, p \leq .05$) such that each partnership transition is associated with about five percent of a standard deviation increase in these problems. Contrary to expectations, we find that partnership transitions are not associated with child internalizing problems, and this finding holds when measures of anxiety/depression and withdrawal are examined separately. Overall, these results suggest that each partnership transition is associated with a small reduction in children's school readiness. Yet, given that about half of children born to unmarried parents experience three or more changes by age five (results available upon request), these findings suggest that children born into alternative family forms are at a significantly higher risk for both academic and behavioral problems at school entry.

[Table 3 about here]

Second, we examine whether the *type* of transition matters by examining coresidential and dating transitions separately. In Table 4, we find that coresidential instability is negatively associated with verbal ability ($\beta = -.79, p \leq .01$) and positively associated with externalizing problems ($\beta = .25, p \leq .01$), attention problems ($\beta = .05, p \leq .10$), and social problems ($\beta = .11, p \leq .01$; see Model 1). Dating transitions are also negatively associated with verbal ability ($\beta = -.36, p \leq .05$) and positively associated with externalizing problems ($\beta = .17, p \leq .01$) and attention problems ($\beta = .02, p \leq .10$). Consistent with the findings for total number of transitions, neither coresidential nor dating transitions predict child internalizing problems. Although the coefficients for coresidential transitions are larger in magnitude than the coefficients for dating transitions, Wald tests indicate that the difference between the two types of transitions is significant for social problems only. Overall, these findings suggest that both coresidential and dating transitions decrease children's cognitive and behavioral readiness for school.

[Table 4 about here]

Our third research question asks whether the associations between partnership transitions and child outcomes at school entry vary by child gender (see Model 2 of Table 4). We find that associations between coresidential transitions and child behavioral problems differ by gender, with boys responding more negatively than girls. Interactions between coresidential transitions and child gender are statistically significant for

externalizing problems ($\beta = .35, p \leq .05$), attention problems ($\beta = .08, p \leq .10$), and social problems ($\beta = .14, p \leq .05$). Interpreting each of these interactions suggests that an increase in exposure to transitions is significantly associated with increases in these three forms of behavioral problems for boys only. In contrast, increased exposure to maternal partnership transitions is significantly associated with decreases in verbal ability for boys and girls alike.

Robustness Checks

Table 5 presents results from the robustness checks which assess the extent to which observed associations between partnership instability and children's school readiness are robust to omitted variable bias. The robustness tests are limited to outcomes measured at child ages three and five: verbal ability, externalizing problems (aggression subscale), and attention problems. Rule breaking (a subscale of externalizing problems) and social problems were not asked at age three. Internalizing problems were not examined because they were not associated with partnership instability.

[Table 5 about here]

For verbal ability, the lagged model shows significant coefficients for all partnership transitions and dating transitions and a marginally significant coefficient for coresidential transitions. The fixed effects coefficient for coresidential instability is also marginally significant. Finally, the falsification test indicates that transitions between the ages of three and five are not significantly associated with verbal ability at age three. Yet,

the coefficient for coresidential transitions is large suggesting that omitted variable bias may be a problem.

For children's behavioral problems, we find significant coefficients for all three measures of instability in the lagged aggression models. The size of the coefficients in the fixed effects models are similar to those in the lagged models, but they are not significant because of large standard errors, which suggests that the point estimates are robust but perhaps not precisely measured. In the falsification models, we find that later transitions are not associated with child aggression at age three. Overall, these results provide some support for the argument that partnership instability has a causal effect on boys' aggression problems. The results for associations between coresidential transitions and attention problems are similar to the results for aggression. In contrast, the results for associations between dating transitions and attention problems suggest that we may be picking up the effect of an omitted variable.

We should point out that our robustness tests are based on the assumption that the measures of child well-being at age 3 are not picking up the effect of a pending separation or partnership change. This is a strong assumption which, if incorrect, could lead us to over control for pre-disruption conditions. For example, prior research suggests that child behavior problems increase during the period leading up to divorce (Sun and Li 2002). Thus, whereas passing the robustness tests should be viewed as strong evidence in favor of a causal effect, the failure to pass a test should not be taken as definitive evidence of no causal effect.

DISCUSSION

This paper investigated the association between maternal partnership instability and children's cognitive and behavioral preparation for school entry. Importantly, we extended prior work by comparing coresidential and dating transitions, examining gender differences in associations between instability and school readiness, and assessing the robustness of our findings to omitted variable bias. Differentiating the type of transition is important because children, especially Black children, are more likely to experience maternal dating transitions than marital or cohabiting transitions, and yet there has been very little research on whether these non-traditional transitions negatively affect child outcomes. Differentiating the effects of instability by child gender is important because if boys are more negatively affected by partnership instability than girls, then increasing family instability may be contributing to the gender gap in school readiness and, ultimately, to the gender gap in educational attainment. Finally, examining vulnerability to unobserved variables is important for addressing issues of selection and causation.

We found that both types of partnership instability (coresidential and dating) are associated with lower verbal ability, more externalizing problems, and more social problems and that coresidential instability is associated with attention problems. Our study is the first to provide strong empirical evidence that dating transitions are similar to marital and cohabiting transitions in terms of their association with children's school readiness. This finding is important because it means that most prior work seriously undercounts the level of instability in children's lives, especially Black children.

We also found that boys are more negatively affected by instability than girls in the area of behavior problems. When boys and girls are examined together, the effect of

each transition on behavioral outcomes is very modest, approximately 2 to 3 percent of a standard deviation. In contrast, when boys are examined separately, each transition is associated with approximately 6 to 10 percent of a standard deviation. That boys respond more negatively to each transition than girls suggests that trends in family formation may be contributing to the gender gap in school attainment by reducing boys' readiness to learn at the time they enter formal school. Interestingly, although boys in this sample have lower verbal ability than girls at age 5, there were no gender differences in the effects of instability on verbal ability. Robustness tests lend support to the argument that both coresidential and dating instability have causal effects on boys' externalizing behavior and that coresidential instability has a causal effect on boys' attention problems. The evidence for a causal effect of instability on verbal ability is more ambiguous.

Our study has several limitations. First, because our data are observational, we cannot rule out the possibility that unmeasured variables led to both mothers' partnership instability and poor child outcomes. Although we attempted to minimize this possibility by including a rich set of control variables (e.g., mothers' cognitive ability and partnership history, and maternal grandmothers' mental health) and by conducting several robustness checks, we recognize that omitted variable bias may still exist. In particular, our robustness checks did not control for omitted variables that change over time. Secondly, we may be undercounting the level of instability that children are exposed to between birth and age 5. In the five year interview, mothers were asked about partnerships that began and ended within the preceding two-year time period, but this question was not asked in earlier waves. Thus, we are likely missing some transitions that

occurred between birth and age 3. Additionally, we treat each relationship change as equally important when in fact some changes may be more important than others. Finally, our data are representative of children living in urban areas and so our results may not generalize to children living in suburban or rural areas. The fact that our findings for coresidential instability are similar to research on older children using nationally representative data (Cavanagh and Huston 2006; Fomby and Cherlin 2007) suggests that the urban sample may not present a problem.

Our findings contain a number of implications for future research. First, future research should move beyond a focus on marital unions to include dating as well as cohabiting unions. Second, researchers need to pay close attention to gender differences in the effects of instability on child behavior problems, especially externalizing problems. Several studies indicate that early behavioral problems are strong predictors not only of future behavior but also of educational and labor market success (Farkus et al. 1990, Heckman, Stixrud and Urzua 2006). Indeed, much of the success attributed to early childhood education programs such as Head Start is due to reductions in behavioral problems and improvements in social skills (Barnett 1996). Insofar as family instability has differential effects on boys and girls and insofar as family instability is more common among disadvantaged populations, the increase in instability during the past few decades may account for the growing gender disparity in school achievement, especially among minority populations. Finally, our findings have implications for policies aimed at strengthening families and improving child well-being. Current initiatives, originally funded by the Bush Administration, seek to promote marriage by providing parents with

training in relationships skills (Dion 2004). Our results suggest that a stronger emphasis on relationship stability, regardless of the type of union, is important for promoting children's school readiness, especially among boys. In addition, policy makers and program providers should more seriously consider the impact that dating relationships have on the resources and well-being of household members. These relationships are often not the focus of policies, but our results point to the potential risk of *all* forms of partnership instability to young children's academic well-being.

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Table 1: Selected Characteristics of Various Fragile Families Samples

	Sample 1 ^a (n = 4,898)	Sample 2 ^b (n = 759)	Sample 3 ^c (n = 1,116)	Sample 4 ^d (n = 150)	Sample 5 ^e (n = 2,295)	Sample 6 ^f (n = 2,936)
Maternal characteristics						
Relationship status at birth						
Married to biological father (%)	24.23	23.06	27.87	5.33	21.44	23.67
Cohabiting with biological father (%)	36.42	39.00	36.47	42.00	36.30	35.63
Living alone (%)	39.34	37.94	35.66	52.67	42.27	40.70
Age at baseline	25.28	25.77	25.46	25.61	24.91	25.09
Race/ethnicity						
Black (%)	47.62	40.29	42.86	58.39	53.64	50.75
Hispanic (%)	27.34	32.50	30.64	22.15	24.23	25.10
White (%)	21.08	20.74	21.11	16.78	19.35	21.29
First generation immigrant (%)	17.03	28.76	19.77	5.33	12.18	13.33
Education at baseline	1.11	1.02	1.13	.59	1.10	1.14
Child characteristics						
Gender (% male)	52.44	51.65	53.76	54.67	51.81	52.15
First born (%)	38.28	37.30	38.61	20.27	38.52	38.66
Low birth weight (%)	10.74	12.25	9.41	26.00	10.02	10.42

Note: ^a Original Fragile Families Study sample. ^b Mothers who did not participate in the five-year core survey.

^c Mothers who participated in the five-year core survey but not in the five-year supplemental survey. ^d Mothers who lived with focal child half time or less during one or more waves. ^e Analytic sample for verbal ability. ^f Analytic sample for behavioral problems.

Table 2: Descriptive Statistics by Child Gender

	Total ^a		Boys		Girls	
	<i>n</i> = 2,936		<i>n</i> = 1,531		<i>n</i> = 1,405	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Child outcomes						
Verbal ability ^b	93.23	15.41	92.17*	16.48	94.36	14.83
Externalizing problems	6.73	5.28	7.21*	5.54	6.22	4.94
Internalizing problems	3.56	2.92	3.55	2.94	3.57	2.89
Attention problems	1.07	1.34	1.17*	1.41	.96	1.25
Social problems	2.52	1.92	2.45*	1.91	2.59	1.93
Partnership transitions						
All partnership transitions	2.11	2.12	2.15	2.10	2.07	2.15
Coresidential transitions	.91	1.05	.91	1.06	.91	1.04
Dating transitions	1.20	1.87	1.24	1.84	1.16	1.89
Maternal controls						
Married at baseline	23.67		24.30		22.99	
Cohabiting at baseline	35.63		33.39*		38.08	
Living alone at baseline	40.70		42.31		38.93	
Age at baseline	25.09	6.02	25.02	6.02	25.16	6.02
Age at first birth	21.52	5.25	21.59	5.21	21.45	5.29
Black (%)	50.75		51.61		49.81	
Hispanic (%)	25.10		23.79		26.49	
Other (%)	2.85		3.08		2.63	
White (%)	21.30		21.52		21.07	
First generation immigrant (%)	13.33		13.06		13.59	
Education	1.14	.99	1.15	1.00	1.12	.99
Poor at baseline (%)	36.17		36.19		36.16	
Almost poor at baseline (%)	25.51		25.54		25.48	
Nonpoor at baseline (%)	38.32		38.28		38.36	
Cognitive ability	6.76	2.65	6.78	2.68	6.73	2.62
Nonjoint births (%)	35.81		35.13		36.55	
Parents' mental health (%)	38.81		40.16		37.33	
Relationship history ^c	2.05	2.32	2.02	2.25	2.09	2.39
Child controls						
First born (%)	38.66		39.77		37.47	
Low birth weight (%)	10.42		9.60		11.32	
Age in months at Wave 4	63.83	3.04	63.86	3.10	63.80	2.99

Note: Source: Fragile Families and Child Wellbeing Study.

^a Based on analytic sample for behavioral problems ($n = 2,936$). ^b Based on analytic sample for verbal ability ($n = 2,295$). ^c Number of relationships lasting at least one month prior to relationship with father.

* Indicates difference between boys and girls is statistically significant at $p \leq .05$.

Table 3: Results of OLS Models Predicting Child Outcomes at Age Five by Partnership Transitions

	Verbal Ability ^a	SE	External Problems ^b	SE	Internal Problems ^b	SE	Attention Problems ^b	SE	Social Problems ^b	SE
All partnership transitions	-.45**	.16	.18***	.05	-.02	.03	.03*	.01	.04*	.02
Maternal characteristics										
Cohabiting at baseline	.24	.89	.10	.30	.26	.17	-.03	.08	.22*	.11
Living alone at baseline	1.37	.96	.52	.33	.39*	.18	.08	.08	.36**	.12
Age at baseline	-.07	.08	-.09***	.03	.004	.02	-.02*	.01	.003	.01
Education at baseline	1.82***	.39	-.33*	.13	-.09	.07	-.06 [†]	.03	-.12**	.05
Poor at baseline	-5.43***	.79	.77**	.27	.48***	.15	.13 [†]	.07	.18 [†]	.10
Almost poor at baseline	-3.87***	.77	.53*	.26	.26 [†]	.15	.05	.07	.10	.10
Black	-6.67***	.85	-.04	.28	-.27 [†]	.16	-.33***	.07	.02	.10
Hispanic	-6.93***	.99	.02	.33	.64***	.18	-.15 [†]	.08	.29*	.12
Other	-.59	1.86	1.14 [†]	.62	.27	.34	-.06	.16	.43 [†]	.23
First generation immigrant	-5.47***	1.02	-.60 [†]	.34	.74***	.19	-.13	.09	.09	.12
Cognitive ability	.75***	.12	.02	.04	-.07**	.02	-.01	.01	-.02	.01
Age at first birth	.27**	.10	.02	.03	-.01	.02	.001	.01	-.02	.01
Nonjoint births	-1.04	.82	.20	.29	-.09	.15	-.07	.07	-.03	.10
Relationship history ^c	.42***	.13	.13**	.04	.02	.02	.01	.01	.02	.02
Parents' mental health	.15	.61	1.35***	.20	.71***	.11	.36***	.05	.42***	.07
Child characteristics										
Gender (male)	-2.39***	.52	.96***	.19	-.01	.10	.19***	.05	-.14*	.07
First born	-.74	.79	-.99***	.27	.07	.15	-.02	.07	.03	.10
Low birth weight	-2.26**	.94	.73*	.31	-.02	.17	.23**	.08	.06	.12
Age in months at Wave 4	.22*	.09	-.08 [†]	.04	.001	.02	.001	.01	-.01	.01

Note: Unstandardized coefficients presented. Some or more college is the reference category for education, nonpoor is the reference category for poverty status, and White is the reference category for race/ethnicity.

^a $n = 2,295$. ^b $n = 2,936$. ^c Number of relationships lasting at least one month prior to relationship with father.

[†] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 4: Results of OLS Models Predicting Child Outcomes at Age Five by Partnership Transitions and Interactions with Child Gender

Model	Variable	Verbal Ability ^a	SE	External Problems ^b	SE	Internal Problems ^b	SE	Attention Problems ^b	SE	Social Problems ^b	SE
1	Coresidential transitions	-.79**	.29	.25**	.10	.01	.05	.05 [†]	.03	.11** ^c	.04
	Dating transitions	-.36*	.16	.17**	.06	-.03	.03	.02 [†]	.01	.02 ^c	.02
	Child male	-2.38***	.56	.96***	.19	-.01	.10	.19***	.05	-.14*	.07
2	Coresidential transitions	-.92*	.42	.07	.14	-.03	.08	.003	.04	.03	.05
	Dating transitions	-.34	.22	.14 [†]	.07	-.03	.04	.02	.02	.001	.03
	Child male	-2.56***	.85	.56*	.28	-.09	.16	.10	.07	-.32***	.10
	Child male x coresidential transitions	.24	.56	.35*	.17	.08	.10	.08 [†]	.05	.14*	.07
	Child male x dating transitions	-.04	.30	.07	.10	.01	.06	.02	.03	.04	.04

Note: Unstandardized coefficients presented. Models include the full set of controls.

^a $n = 2,295$. ^b $n = 2,936$. ^c The difference between coresidential and dating transitions is statistically significant at $p \leq .05$.

[†] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table 5: Robustness Checks

Model	Variable	Verbal Ability ^a	SE	Aggression Problems ^b	SE	Attention Problems ^b	SE
Lagged	All partnership transitions	-.36**	.14	.11**	.04	.03*	.01
	Coresidential transitions	-.45 [†]	.27	.22**	.07	.05 [†]	.02
	Dating transitions	-.34*	.15	.09*	.04	.02	.01
Fixed	All partnership transitions	-.10	.24	.08	.08	-.000	.02
	Coresidential transitions	-.75 [†]	.43	.21	.14	.06 [†]	.04
	Dating transitions	.02	.25	.06	.08	-.01	.03
Falsification	All partnership transitions	-.26	.23	.04	.10	.03	.02
	Coresidential transitions	-.91	.59	-.25	.24	-.02	.05
	Dating transitions	-.14	.27	.10	.11	.03	.03

Note: Unstandardized coefficients presented.

^a Results for full sample ($n = 2,295$). ^b Results for boys ($n = 1,531$).

[†] $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.