Family Structure, Family Stability and Early Child Wellbeing

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This study exploits rich data from the Fragile Families and Child Wellbeing Study (FFCWS) to distinguish the effects of family structure at birth from family stability over time on child cognitive, socio-emotional and health outcomes. We define two models: one that measures family structure at birth only and a second that measures possible changes in family structure since birth. We find that both family structure and stability are important to all child outcomes but for family structure, the results are attenuated by child and demographic characteristics. Family stability effects by contrast, remain significant even after these controls are included and also reveal that the cognitive, socio-emotional and health outcomes of children born to married or cohabiting parents are more adversely affected by changes in family structure over time.

Keywords: Asthma, Cognitive Ability, Behavioral Problems, Family Structure, Family Stability and Obesity

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The American family is rapidly changing. No change is more striking than the increase in the share of children who are born to unmarried parents. Indeed, this type of family has become so common that it now has a distinct label – the "fragile family" – signifying that although the parents and child form a family, they are less likely than traditional married couple families to remain together.

The growth of fragile families is of concern because a large body of research has found that children raised in non-traditional married families do not fare as well as children living in traditional married families (see e.g. Brown, 2004; Carlson & Corcoran, 2001; McLanahan & Sandefur, 1994). But this research has typically not distinguished between two very different types of risk: first, being born to an unmarried parent and second, growing up in a family whose structure is unstable over time. Much of the research showing that children of single parents do not fare as well as children of married parents, for instance, exploit samples of children whose parents were married and then separated or divorced; in such samples, living with a single parent is by definition conflated with experiencing family instability.

In this paper, we take advantage of new data on a large sample of children in "fragile families" to distinguish the effects of having been born to an unmarried parent from the effects of having experienced family instability. Thus, we estimate naïve models, in which we control only for family structure at birth, and then a richer set of models in which we control for both family structure at birth and family instability since birth. Another strength of our analysis is that we examine a wide range of child outcomes, including outcomes from the cognitive, socio-emotional, and health domains. Prior studies have focused on one or two such domains but rarely all three collectively. Finally, our paper stands out from prior research in its focus on the early

childhood period. Given the increasing share of children born into "fragile families", it is important to understand family structure and stability effects in the early stages of a child's life.

THEORY AND BACKGROUND

A substantial body of research confirms that the structure of the family into which a child is born and develops, present both advantages and disadvantages that subsequently affect cognitive, socio-emotional and even physical health outcomes. McLanahan and Sandefur (1994) showed that children born to two married biological parents – the traditional family structure – had lower risk of being a high school dropout, pregnant teen, and idle; these children also had better adult outcomes. Later studies observing younger children found that those born to married parents had fewer socio-emotional and health problems as well as higher cognitive scores (Brown, 2004; Carlson & Corcoran, 2001; Bzostek & Beck, 2008; Harknett, 2005).

Although much of the research on this topic has simply compared children in traditional married couple with all other families, more nuanced research has examined differences in outcomes for children in various types of non-traditional families. One important distinction is whether children are living with cohabiting parents or single parents (typically single mothers). In a cohabiting family (and particularly if the cohabiters are the child's biological parents), the child has the benefit of living with both parents and their shared time and economic resources would likely yield better child outcomes relative to children living with single mothers (Cherlin, 2004; Brown, 2004). Single-parent households typically have the least resources and thus, would be expected to have worse outcomes relative to children in married or cohabiting unions (Biblarz & Gottainer, 2000; Magnuson & Berger, 2009; McLanahan, 1985); prior studies have confirmed this (Carlson & Corcoran, 2001; Brown, 2004; Bzostek & Beck, 2008; Harknett, 2005).

Does Family Stability Matter?

While most of the research in this area has examined the effect of family structure at birth (or current family structure at the time of the child assessment), more recently studies have begun to examine family structure changes over the course of a child's life. These studies have specifically focused on the issue of family stability – that is, whether the parent(s) with whom a child lives have been stable or changing over time. Accounting for family stability is crucial because the positive effect of the traditional family may be in part due to stability rather than family structure per se.

Why would family stability affect child well-being? The main theory brought to bear is social stress theory (George, 1989, 1993; Holmes & Rahle, 1967; Osborne & McLanahan, 2007). Changes in family structure are typically accompanied by changes in economic, time, and parental resources; this in turn place stress on families and thus adversely affect child outcomes. Family instability also yields residential instability and a sense of insecurity concerning household rules (Amato, 2000; Cavanaugh & Huston, 2006; Kelly & Emery, 2003; Osborne & McLanahan, 2007; Magnuson & Berger, 2009; Waldfogel et al., forthcoming).

Empirical studies have shown that family instability is associated with lower child cognitive scores, increased behavioral problems, and poorer health (Cavanagh & Huston, 2006; Fomby & Cherlin, 2007; Osborne & McLanahan, 2007; Magnuson & Berger, 2009). Nevertheless, family structure at birth still has an influence even when stability is taken into account (Cavanagh & Huston, 2006; Osborne, Manning & Smock, 2007; Raley & Wildsmith, 2004). Carlson & Corcoran (2001) found that children born to single parents had more behavioral problems and lower cognitive scores regardless of whether their family structure was stable or unstable since birth.

Another reason to take both birth status and stability into account is that the risk of instability is related to initial family structure (Osborne, Manning & Smock, 2007; Raley & Wildsmith, 2004). Non-marital cohabitation at birth has been linked to greater risk of later instability relative to parents who are married or even single at birth (Amato, 1993; Carlson & Corcoran, 2001; Fomby & Cherlin, 2007; Osborne & McLahanan, 2007; Wu & Martinson, 1993). Hence, instability in married, cohabiting, and single-parent families may have differential effects on children and this study will explore these effects in detail.

<center>Potential Mediators</center>

If family structure and family instability do affect child cognitive ability, behavior, and health, it is important to understand through what mechanisms these effects come about. Economic, time, and parental resources are all likely to play an important role and we discuss each of these potential mediators below. We note that these mediators are not mutually exclusive nor do they complete the exhaustive list of theoretical mechanisms possibly at work.

Economic Resources

Income and family type are inextricably linked: empirical evidence confirms that non-traditional families are consistently poorer than traditional married families (McLanahan & Sandefur, 1994; Carlson & Corcoran, 2001). In particular, children of single mothers are at a unique disadvantage since only approximately one-third of noncustodial fathers pay child support (Carlson & Corcoran, 2001; Sorenson, 1997). Even children living with unmarried cohabiting parents have fewer resources than children with married parents because cohabiting parents have lower incomes and less education than married parents (McLahanan & Sandefur, 1994; Manning & Brown, 2003; Brown, 2004). Subsequently, non-traditional single and two-parent families – regardless of their stability over time – have fewer economic resources to buy

books, clothes, food and other inputs that boost children's academic, social, and health outcomes (Carlson & Corcoran, 2001; Hanson, McLanahan & Thomson, 1997).

Time resources

Time allocated to raising and caring for children is expected to be positively correlated with their wellbeing (Scott-Jones, 1994; Haveman & Wolfe, 1995). While the quality of time a parent spends with the child is salient, studies have shown that quantity of time also has positive consequences for child cognition and health (Antecol & Bedard, 2007; Ermisch & Francesconi, 2001). This research points specifically to the likely negative effects of *paternal* absence. Not only do single mothers have less time to spend with their children (since they bear more of the household and parental responsibilities relative to their married counterparts), but absent fathers also tend to spend less time with their children than do resident fathers (McLanahan & Sandefur, 1994; Scott-Jones, 1994; Tach et al., 2010). Nevertheless, the involvement of a non-resident father may ameliorate child health, behavior, cognitive scores, and language skills (Black et al., 1999; Waldfogel et al., forthcoming).

Parental Resources

Beyond economic and time inputs, parents supply many other intangible resources that are consequential for early child cognitive, behavioral and health development. Two such intangible parental resources are parenting quality and parental mental health.

In single-parent families, parenting may be less effective because often the custodial parent (usually the mother) must be both provider and supervisor. Non-custodial fathers are less involved than custodial fathers, and even if they are involved, they do not play as strong a role in the discipline and shaping of their children's lives (Hetherington, 1999; Kelly & Emery, 2003).

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Family instability may further alter parenting quality by creating residential instability, change in social networks, loss of economic resources, and socio-emotional adjustments (Cooper et al., 2009; Hogan & Kitagawa, 1985; Astone & McLanahan, 1994); these changes in turn are likely to affect parents' ability to be good parents.

Family structure may also be related to parental mental health. Studies have shown that single and cohabiting mothers have higher levels of depression relative to married mothers (Brown, 2000, 2002, 2004; Demo & Acock, 1996; Friedlander et al., 1986; McLanahan, 1985; Waldfogel et al, forthcoming). Moreover, the stress that accompanies family instability also affects parental mental health (Cooper et al., 2009; Meadows et al., 2008; McLahanan & Sandefur, 1994), further compromising child development.

DATA AND VARIABLES

We use data from the Fragile Families and Child Wellbeing Study (FFCWS). It utilized stratified random sampling technique to sample 4,897 births from twenty large cities in the United States from 1998 to 2000. Parents of these children were interviewed in the hospital at the time of the birth and then at approximately one, three and five years post-birth. Designed to capture the conditions and capabilities of unwed parents, these data provide detailed information on the relationship patterns, family structures, transitions, and characteristics of the parents interviewed. Our analyses exploit the rich data provided on dynamic family structures from the child's birth until year five in addition to extensive data on parental and family characteristics prior to the child's birth, at birth, and thereafter.

We analyze outcomes for children at age 5. As we discuss below, some of the outcomes were assessed by telephone, while others were assessed during a home visit. Of the 4,897 mothers interviewed at the time of the child's birth, 4,139 were in the core-interview at year five;

of these, 3,001 mothers also participated in an In-Home Longitudinal Study designed to capture more detailed child outcomes. These 3,001 in-home participants represent 81% of the eligible population for the In-Home sample. There is no statistical difference between participants and non-participants of the In-Home Study except for racial differences. Black mothers are more likely and Hispanic mothers are less likely to be in the In-Home Survey. Due to missing data, the sample for each outcome is not 3001 observations. For the PPVT-R, there are 2301; for the Woodcock-Johnson Letter Recognition Test, there are 2,310 observations and for obesity, there are 2,130 observations. Sample sizes are a bit higher for aggressive behavior and anxiety/depression since these data can be acquired via phone interview rather than through In-Home assessments. There are 2711 observations for aggressive behavior and 2756 observations for anxiety/depression. Asthma is the only outcome provided by the core-interview and there are 4,020 observations. Overall, 4,023 observations from both the core interview and In-Home Longitudinal Study will be used for analyses throughout this study.

<p style="text-align:center">Child Outcome Measures</p>

The child cognitive, behavioral and health measures are drawn from the five-year in-home interview and the mother's fifth-year core (phone) interview of the FFCWS; summary statistics are presented in Table 1. Measures of cognitive development are the Peabody Picture Vocabulary Test-Revised (PPVT-R) and the Woodcock Johnson Letter-Word Identification Test, both administered during the In-Home interview. The PPVT-R is often used as a test of English Language proficiency and serves as an indicator of academic readiness for pre-school aged children (Dunn & Dunn, 1997). The Woodcock Johnson Letter-Word Identification Test measures word recognition and pronunciation abilities of children (Woodcock & Johnson, 1990). Children's scores on both tests were standardized in order to adjust for each child's performance

in comparison to his/her peers of the same age (in months). The mean standardized scores for the PPVT-R and Woodcock Johnson Test in the analysis sample are about 92.96 (s.d. = 16.08) and 99.45 (s.d. = 15.26) respectively. Both these tests are internally valid for pre-school aged children with $\alpha = 0.94$ for the PPVT-III and $\alpha = 0.92$ for the Woodcock-Johnson Test (Ziol-Guest & Mckenna, 2009).

Behavioral problems were measured using the Child Behavior Checklist (CBCL), which includes sub-scales identifying externalizing or internalizing behaviors (Achenbach, 1991). Each item was scored on a 3-point Likert scale: {0 = "not true", 1 = "somewhat true" and 2 = "very true"}; a response of "very true" indicates more severe behavioral problems. Externalizing behaviors are outward displays of problem behaviors including aggression and violence. In this study, we create an externalizing behaviors index by summing the 20 aggressive behavior items from the CBCL ($\alpha = 0.84$). Internalizing behaviors include problems such as anxiety, withdrawal and depression. We create an internalizing behaviors index by summing the 14 anxiety/depression items from the CBCL ($\alpha = 0.68$). The average index score in the analysis sample at age 5 is 10.70 (s.d. = 6.37) for aggressive behavior and 3.37 (s.d. = 2.99) for anxiety/depression.

Our two measures of health are obesity and asthma. Obesity in children is defined as having a body mass index (BMI) at or above the 95th percentile for their age-group (as provided by the In-Home activity assessment); in the analysis sample, 17% of children were obese at age 5. Information on asthma was obtained in the mother's core-interview. An asthmatic episode or asthma attack in the past 12 months is the indicator for asthma in children; 8% of children in our sample had asthma at age 5 under this definition.

Family Structure Measures

To distinguish the effects of family structure from family stability, we first define three family structure types at the time of the child's birth and then construct variables that capture changes in family structure over time. Family structure at birth is one of three categories: biological parents are married to each other, biological parents are cohabiting with each other (but not married), and the child's biological mother is single

[1]. Table 2 shows that approximately 25% of mothers were married at the time of birth, 36% were cohabiting, and 39% were single.

To determine family stability, we observe whether the child has remained in the family structure into which he/she was born, in all subsequent interviews through to age five. We then define a set of variables to capture the dynamics of children's family structures, categorizing them as stable or unstable. Stable family structure categories include: stable marriage, stable cohabitation, stable single-parent, and stable transition from cohabitation with the biological father to marriage with the biological father. (This latter category is defined as stable since the child is living with both biological parents from birth to age five with only a change in marital status). Unstable family structure categories include: married at birth and unstable, cohabiting at birth and unstable, and single at birth and unstable. Family instability by age 5 is extremely common. Shown in Table 2, almost half of all families in our sample were unstable while only about 20% were in stable marriages. Of note is that 5% of families were in unstable marriages (indicating that one-fifth of parents married at birth had divorced by age 5).

[1] Although in principle, there might be a fourth category, in which a child's mother is cohabiting with someone other than the child's biological father, this is rare at the time of the birth. For the most part, if a mother is not married to or cohabiting with the child's father at birth, she is not married to or cohabiting with anyone else at that time.

Independent Variables

We control for child and demographic characteristics that are likely to be correlated with both family structure (stability) and child outcomes. These variables, all measured at the time of the child's birth, include: child gender, parents' age, mother's race/ethnicity, mother's education, whether father is of a different racial-ethnic group and whether father has either more, the same or less education than the child's mother.

Mediating Variables

We also consider four variables that might potentially mediate the associations between family structure (stability) and early child wellbeing: mother's household income at year five, mother's aggravation in parenting, father involvement, and parents' depression (see Table 1 for summary statistics). Mother's household income is a proxy for economic resources and is presented in tens of thousands of dollars and the average income is about $38,000. Four parental aggravation items (from the Child Development Supplement of the Panel Study of Income Dynamics; (α = 0.69)) are administered to the mother in the fifth-year core interview and these are scored on a 4-point Likert scale with 1 indicating the most parenting aggravation and 4 indicating the least aggravation; the mean is 2.82 suggesting less parenting aggravation by mothers in general. Father involvement is measured by the question "During the last 30 days, on how many days has the father seen the child?" This is admittedly a very simple measure of father involvement, which captures the quantity (not quality) of the time the father has spent with the child. The average number of days in the month a father sees his child is about 17 days. A binary variable for parents' depression was derived from the Composite International Diagnostic Interview - Short Form (CIDI-SF), administered during the fifth-year core interviews of both parents. Individuals

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are coded as depressed if they scored three or more on the major depression scale. 16% of mothers and 8% of fathers met this criterion.

<div align="center">Analytic Strategy</div>

To examine the associations between family structure (stability) and our six measures of early child wellbeing, we employ three different models. Model 1 includes only the family structure (stability) variables in order to assess the simple bivariate relationship between family structure (stability) and the child outcomes. Model 2 adds controls for child and demographic variables to see to what extent the associations found in Model 1 are diminished when those factors are controlled. Model 3 then adds the potential mediators to see if they have significant effects on the outcomes and also to see to what extent their inclusion diminishes the effects of family structure (stability). We begin with "naïve" models that focus only on family structure at birth. Then, in a more sophisticated set of models, we take family stability into account.

<div align="center">MULTIVARIATE RESULTS</div>

<div align="center">Family Structure at Birth Models</div>

Tables 3 to 5 present the effects of family structure at birth on the six cognitive, behavioral, and health outcomes. Table 3 presents estimates of the family structure effects on the PPVT-R and Woodcock-Johnson Letter-Word Identification Test. Model 1 for both cognitive outcomes suggests that being born into a fragile family is associated with 3 or 4 point lower cognitive scores relative to being born into a traditional married family (the reference category). However, once child and demographic variables are added in Model 2, the negative effect of being in a fragile family dissipates substantially, leaving virtually no statistically significant difference in scores (with the exception of the Woodcock-Johnson Test, where children born to single parents score 1 point lower than children born to married parents).

For child behavioral problems in Table 4 (Model 1), single parenthood and cohabitation at birth is associated with significantly higher aggressive and anxious/depressed behaviors (relative to marriage), although the associations are small. This result is maintained in Model 2 for anxious/depressed behavior, but somewhat attenuated for aggressive behavior (although the difference between children of single mothers and married couples is still significant).

In Table 5, even after controlling for child and demographic variables, fragile families are strongly associated with increased likelihood of obesity. Cohabitation and single parenthood are also associated with increased asthmatic episodes and attacks, but this result only holds for the bivariate analysis in Model 1. The family structure model suggests that the associations between family structure and the early child outcomes tend to weaken if not dissipate once child and demographic controls are added to the model (except obesity).

<u>Family Stability Models</u>

The results from the family stability models, presented in Tables 6 to 8, tell a more detailed story. The first point of difference to note is that the reference category is now children in *stable* married families. In comparison to this reference category, children whose parents were married-at-birth but subsequently divorced have lower PPVT-R and WJ scores (Table 6) and more aggressive behavior problems (Table 7) even after controlling for other child and demographic characteristics. This result suggests that stability matters and would not be seen in the naïve model since it does not distinguish between stable and unstable married families.

For children born to single mothers, these more comprehensive models allow us to separate those that remained single (single-stable) from those that moved into some other family structure (single-unstable). Across all of the cognitive, behavioral, and health outcomes we consider, both groups fare worse than the stable married family, even after controlling for child

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and demographic variables; this confirms the findings of Carlson & Corcoran (2001). F-tests comparing the coefficients on stable and unstable single-mother families show these two family types are not statistically different from each other.

Among children whose parents were cohabiting at birth, outcomes tend to be consistently poorer than for children in stable married families regardless of whether the cohabiting relationship was subsequently stable. However, the family instability model indicates that the outcomes of children in unstable cohabiting families tend to be worse than the outcomes of children living in stable cohabiting or stable cohabiting-to-married families. Tables 7 and 8 indicate that living in unstable cohabiting households exacerbates aggressive behavior, obesity and asthma for children relative to their counterparts living in stable cohabiting or stable cohabit-to-married families. Woodcock Johnson test scores and anxiety/depression are statistically worse in unstable cohabiting households relative to stable cohabit-to-married families.

<u>Mediating Effects</u>

Finally, it is important to examine whether the theoretical mechanisms underlying the relationship between family stability and early child wellbeing mediate these relationships. The mediators explored in this study are household income, father involvement, aggravation in parenting, and parental depression.

Results in Table 9 for selected variables (one each from the cognitive, behavior, and health domains; other results are available on request) show that the statistically significant associations between unstable family structures and PPVT-R scores mostly dissipate when mediators, particularly income and aggravation in parenting, are included in the model. With regard to anxious/depressed behavior problems, parenting aggravation and maternal depression are significantly associated with these problems but these controls do not significantly change

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the coefficients on the family stability measures. Finally, father involvement is significantly associated with obesity, but again, the coefficients from Model 2 do not change significantly.

DISCUSSION AND CONCLUSION

In this paper, we have taken advantage of new data on a large sample of children in "fragile families" to examine the associations between family structure (stability) and child well-being in early childhood. In naïve models, in which we control only for family structure at birth, we find that children born to unwed parents have worse cognitive, behavioral, and health outcomes in general than children born into traditional married families. However, most of these differences attenuate when we control for differences in child and demographic characteristics, suggesting that family structure per se may not be that consequential.

The results from more sophisticated models, in which we contrast several distinct dynamic family structures (reference category is stable married families), tell a more complete story. First, children born to married parents who later divorce have worse test scores and aggressive behaviors relative to their counterparts in stable married families. Second, children born to cohabiting parents are disadvantaged across an array of outcomes and this is strongly associated with family stability. While children born to cohabiting parents who transition into marriage are not statistically different from those in stable married families, children born to cohabiting parents who later split do significantly worse than those in stable married families; moreover, unstable cohabitation exacerbates child socio-emotional and health problems relative to stable cohabitation and transition to marriage. Third, children born to single parents have the most consistently adverse outcomes (except asthma), regardless of family stability.

Thus, taking family stability into account mostly affects our understanding of children in married and cohabiting families. This may perhaps be because in such families, the economic,

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time and parental resources are most negatively impacted by the biological father leaving the household; as a consequence, child wellbeing is jeopardized. Notwithstanding, being born to a single mother, subjects the child to less resources at the outset , which may not change significantly even if a paternal figure moves into the household.

The potential mediators have shed some light on the processes underlying the differences between families, but also leave many questions unanswered. Income and parental aggravation substantially mediate children's PPVT-R scores, while parental aggravation and depression mediate children's anxiety/depression, but only moderately. The mediators played little role in explaining obesity.

There are some limitations to this study that should be noted. First, our sample is drawn from twenty medium to large U.S. cities, thereby affecting the generality of our findings to non-urban areas. Second, although we have many rich controls, including controls for pre-birth characteristics, there may be variables omitted from our analysis that are correlated with family structure, family stability, and child outcomes. For this reason, we cannot place a strong causal interpretation on our results and instead view them as associations. Third, it is important to note that our report of children's behavior comes from mothers. Future work would do well to replicate our analyses but with more objective measures and also control for some important mediating factors such as relationship quality and parents' drug and alcohol abuse.

In spite of these limitations, our results advance our understanding of the "fragile families" into which American children increasingly are being born. We find that both family structure and family stability matter, and that stability matters most for children born to cohabiting parents. Policymakers designing programs, and practitioners working with children in fragile families, therefore, should take both family structure and stability into account.

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Table 1. Descriptive Statistics for the Outcome Measures and Mediators

	Mean	SD	Range	α
Child Outcomes				
PPVT-R (Standardized) [N = 2301]	92.96	16.08	40 – 139	0.94
Woodcock-Johnson [N = 2310]	99.45	15.26	46 – 186	0.92
Aggressive Behavior [N = 2711]	10.70	6.37	0 – 36	0.84
Anxiety/Depressive Behavior [N = 2756]	3.37	2.99	0 – 20	0.68
Obesity [N = 2130]	0.17	0.38	0 – 1	
Asthma [N = 4020]	0.08	0.27	0 – 1	
Mediators [N = 4023]				
Income (x $10,000)	3.80	4.41	0 – 80	
Father Involvement	17.18	13.71	0 – 30	
Aggravation in Parenting	2.82	0.68	1 – 4	0.69
Maternal Depression	0.16	0.37	0 – 1	
Paternal Depression	0.08	0.28	0 – 1	

Table 2. Distribution of Family Structure and Stability Measures [N = 4023]

	Percentage of Analysis Sample
Family Structure at Birth	
Married at Birth	24.91%
Cohabiting at Birth	35.82%
Single at Birth	39.27%
Family Stability over Time	
Married – Stable	19.76%
Married – Unstable	5.15%
Cohabiting – Stable	7.26%
Cohabiting to Married – Stable	7.56%
Cohabiting – Unstable	21.00%
Single – Stable	14.09%
Single – Unstable	25.18%

Table 3. Multiple Regression Analyses Predicting PPVT-R and Woodcock Johnson Test Scores: Family Structure Models

	PPVT-R						Woodcock Johnson Test					
	Model 1			Model 2			Model 1			Model 2		
Variable	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Cohabiting at Birth	-7.80	0.92	-3.75**	-1.47	1.03	-0.71	-5.46	0.91	-2.63**	-1.89	0.97	-0.91
Single at Birth	-8.59	0.89	-4.19**	-1.16	1.02	-0.57	-5.60	0.88	-2.74**	-2.51	1.00	-1.23*
Child/Demographic Controls	No			Yes			No			Yes		
R^2		0.06			0.20			0.03			0.14	
Observations		2301			2301			2310			2310	

Note: The reference category is married at birth. Model 1 regressions have no control variables. Model 2 regressions control for child

and demographic characteristics: child's gender, parents' age at the time of the focal child's birth, race/ethnicity and education.

*p < .05. **p < .01.

Table 4. Multiple Regression Analyses Predicting Aggressive and Anxious/Depressed Behavior: Family Structure Models

	Aggressive Behavior						Anxious/Depressed Behavior					
	Model 1			Model 2			Model 1			Model 2		
Variable	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Cohabiting at Birth	1.49	0.30	0.72**	0.62	0.35	0.28	0.65	0.14	0.31**	0.58	0.17	0.28**
Single at Birth	2.47	0.29	1.20**	1.56	0.37	0.76**	0.66	0.14	0.32**	0.71	0.17	0.34**
Child/Demographic Controls	No			Yes			No			Yes		
R^2		0.03			0.05			0.01			0.04	
Observations		2711			2711			2756			2756	

Note: The reference category is married at birth. Model 1 regressions have no control variables. Model 2 regressions control for child and demographic characteristics: child's gender, parents' age at the time of the focal child's birth, race/ethnicity and education.

*$p < .05$. **$p < .01$.

Table 5. Multiple Regression Analyses Predicting Obesity and Asthma: Family Structure Models

| | Obesity | | | | | | Asthma | | | | | |
| | Model 1 | | | Model 2 | | | Model 1 | | | Model 2 | | |
Variable	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Cohabiting at Birth	0.06	0.02	0.03**	0.06	0.03	0.03*	0.02	0.01	0.01*	0.02	0.01	0.01
Single at Birth	0.06	0.02	0.03**	0.07	0.03	0.03**	0.03	0.01	0.02**	0.02	0.01	0.01
Child/Demographic Controls	No			Yes			No			Yes		
R^2		0.01			0.02			0.01			0.02		
Observations		2130			2130			4020			4020		

Note: The reference category is married at birth. Model 1 regressions have no control variables. Model 2 regressions control for child and demographic characteristics: child's gender, parents' age at the time of the focal child's birth, race/ethnicity and education.

*$p < .05$. **$p < .01$.

Table 6. Multiple Regression Analyses predicting PPVT-R and Woodcock Johnson Test Scores: Family Stability Models

| | PPVT-R | | | | | | Woodcock Johnson Test | | | | | |
| | Model 1 | | | Model 2 | | | Model 1 | | | Model 2 | | |
Variable	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Married – Unstable	-9.14	1.88	-2.46**	-5.82	1.64	-1.57**	-7.27	1.74	-1.95**	-6.52	1.70	-1.75**
Cohabiting – Stable	-11.80	1.49	-2.81** ‡	-4.54	1.48	-1.08**	-8.81	1.35	-2.10** ‡	-4.61	1.40	-1.10**
Cohabit to Married – Stable	-7.08	1.56	-1.72** ‡	-2.06	1.59	-0.50	-4.87	1.40	-1.18** ‡	-1.98	1.34	-0.48 ‡
Cohabiting – Unstable	-10.25	1.03	-4.38**	-3.18	1.19	-1.36*	-7.32	1.08	-3.13**	-4.30	1.15	-1.84**
Single – Stable	-10.80	1.16	-3.99**	-3.35	1.24	-1.23*	-6.77	1.14	-2.50**	-4.46	1.22	-1.65**
Single – Unstable	-10.71	0.98	-4.52**	-2.85	1.17	-1.20*	-7.57	1.03	-3.19**	-4.73	1.14	-1.99**
Child/Demographic Controls	No			Yes			No			Yes		
R^2	0.06			0.20			0.03			0.14		
Observations	2301			2301			2310			2310		

Note: The reference category is stable marriage. Model 1 regressions have no control variables. Model 2 regressions control for child and demographic characteristics: child's gender, parents' age at the time of the focal child's birth, race/ethnicity and education.

*p < .05. **p < .01. †, ‡ denote statistical significant difference from the unstable counterparts at the 5% and 1% levels respectively.

Table 7. Multiple Regression Analyses Predicting Aggressive and Anxious/Depressed Behaviors: Family Stability Models

| | Aggressive Behavior | | | | | | Anxious/Depressed Behavior | | | | | |
| | Model 1 | | | Model 2 | | | Model 1 | | | Model 2 | | |
Variable	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Married – Unstable	1.49	0.54	0.40**	1.14	0.56	0.31*	0.43	0.27	0.11	0.52	0.27	0.14
Cohabiting – Stable	1.18	0.54	0.28* [‡]	0.27	0.57	0.06 [‡]	0.97	0.27	0.23**	0.83	0.28	0.20**
Cohabit to Married – Stable	1.50	0.48	0.36** [‡]	0.76	0.52	0.18 [†]	0.58	0.26	0.14* [‡]	0.51	0.27	0.12 [†]
Cohabiting – Unstable	2.10	0.35	0.90**	1.24	0.43	0.53**	0.72	0.17	0.31**	0.78	0.20	0.33**
Single – Stable	2.74	0.42	1.01**	2.00	0.48	0.74**	0.75	0.20	0.28**	0.91	0.22	0.34**
Single – Unstable	2.80	0.34	1.18**	1.87	0.43	0.79**	0.74	0.16	0.31**	0.85	0.19	0.36**
Child/Demographic Controls	No			Yes			No			Yes		
R^2		0.03			0.05			0.01			0.04	
Observations		2711			2711			2756			2756	

Note: The reference category is stable marriage. Model 1 regressions have no control variables. Model 2 regressions control for child

and demographic characteristics: child's gender, parents' age at the time of the focal child's birth, race/ethnicity and education.

*$p < .05$. **$p < .01$. †, ‡ denote statistical significant difference from the unstable counterparts at the 5% and 1% levels respectively.

Table 8. Multiple Regression Analyses Predicting Obesity and Asthma: Family Stability Models

	Obesity						Asthma					
	Model 1			Model 2			Model 1			Model 2		
Variable	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Married – Unstable	0.03	0.04	0.01	0.03	0.04	0.01	0.02	0.02	0.01	0.02	0.02	0.00
Cohabiting – Stable	0.03	0.03	0.01 ‡	0.03	0.03	0.01‡	-0.01	0.01	-0.00 ‡	-0.01	0.02	-0.00 ‡
Cohabit to Married – Stable	0.04	0.03	0.01 ‡	0.03	0.04	0.01‡	0.01	0.02	0.00 ‡	0.01	0.02	0.00 ‡
Cohabiting – Unstable	0.09	0.03	0.04**	0.10	0.03	0.04**	0.05	0.01	0.02**	0.05	0.02	0.02**
Single – Stable	0.08	0.03	0.03**	0.10	0.03	0.04**	0.03	0.01	0.01*	0.02	0.02	0.01
Single – Unstable	0.06	0.02	0.02*	0.07	0.03	0.03*	0.04	0.01	0.02**	0.03	0.01	0.01*
Child/Demographic Controls	No			Yes			No			Yes		
R^2	0.01			0.02			0.01			0.02		
Observations	2130			2130			4020			4020		

Note: The reference category is stable marriage. Model 1 regressions have no control variables. Model 2 regressions control for child and demographic characteristics: child's gender, parents' age at the time of the focal child's birth, race/ethnicity and education.

*$p < .05$. **$p < .01$. †, ‡ denote statistical significant difference from the unstable counterparts at the 5% and 1% levels respectively.

Table 9. Multiple Regression Models Predicting PPVT-R, Anxious Depressed Behavior, and Obesity: Including Potential Mediators

	PPVT-R			Anxious/Depressed			Obesity		
Variable	B	SE B	β	B	SE B	β	B	SE B	β
Married – Unstable	-3.59	1.73	-0.96*	0.30	0.28	0.08	0.07	0.04	0.02
Cohabiting – Stable	-3.77	1.47	-0.90*	0.85	0.27	0.20**	0.03	0.04	0.01
Cohabit to Married – Stable	-1.65	1.58	-0.40	0.43	0.26	0.10	0.04	0.04	0.01
Cohabiting – Unstable	-0.88	1.29	-0.38	0.55	0.22	0.23*	0.14	0.04	0.06**
Single – Stable	-0.31	1.42	-0.11	0.60	0.25	0.22*	0.15	0.04	0.05**
Single – Unstable	-0.68	1.25	-0.29	0.62	0.21	0.26**	0.11	0.03	0.05**
Mediators									
Household Income	0.56	0.11	2.44**	-0.02	0.02	-0.11	0.00	0.00	0.01
Father Involvement	0.06	0.03	0.78	-0.00	0.01	-0.01	0.00	0.00	0.03*
Parenting Quality	1.60	0.47	1.09**	-0.91	0.09	-0.62**	-0.01	0.01	-0.01
Mother Depressed	0.21	0.79	0.07	1.06	0.16	0.37**	-0.03	0.02	-0.01
Father Depressed	0.37	1.03	0.10	-0.19	0.19	-0.05	0.01	0.03	0.00
Child/Demographic Controls	Yes			Yes			Yes		
R^2	0.22			0.11			0.02		
Observations	2301			2756			2130		

Note: The reference category is stable marriage. All regressions control for child and demographic characteristics: child's gender, parents' age at the time of the focal child's birth, race/ethnicity and education.

*p < .05. **p < .01.