

## **Educational Assortative Mating and Children's School Readiness\***

Audrey Beck

Carlos González-Sancho

Center for Research on Child Wellbeing  
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\*Please do not cite or quote without permission. Address all correspondence to the first author at The Center for Research on Child Wellbeing, Princeton University, 286 Wallace Hall, Princeton, NJ 08544, [abeck@princeton.edu](mailto:abeck@princeton.edu). Carlos González-Sancho: Juan March Institute and Nuffield College ([gonzalez.sancho@nuffield.ox.ac.uk](mailto:gonzalez.sancho@nuffield.ox.ac.uk)). The Fragile Families and Child Wellbeing Study is funded by: the National Institute of Child Health and Human Development (NICHD), the California Healthcare Foundation, the Center for Research on Religion and Urban Civil Society at the University of Pennsylvania, the Commonwealth Fund, the Ford Foundation, the Foundation for Child Development, the Fund for New Jersey, the William T. Grant Foundation, the Healthcare Foundation of New Jersey, the William and Flora Hewlett Foundation, the Hogg Foundation, the Christina A. Johnson Endeavor Foundation, the Kronkosky Charitable Foundation, the Leon Lowenstein Foundation, the John D. and Catherine T. MacArthur Foundation, the A.L. Mailman Family Foundation, the Charles S. Mott Foundation, the National Science Foundation, the David and Lucile Packard Foundation, the Public Policy Institute of California, the Robert Wood Johnson Foundation, the St. David's Hospital Foundation, the St. Vincent Hospital and Health Services, and the U.S. Department of Health and Human Services (ASPE and ACF). We are thankful to Sara McLanahan, Gøsta Esping-Andersen and participants in the FFCW Working Group Seminar for valuable suggestions. González-Sancho gratefully acknowledges financial support from the Fulbright Commission in Spain.

## ABSTRACT

One of the concerns behind parental educational sorting is its potential to widen disparities in the ability of families to invest in their children's development. Using data from the Fragile Families and Children Wellbeing Study, this paper investigates the association between parental educational homogamy and children's school readiness at age 5. Our analyses reveal a positive impact of homogamy across child outcomes, most notably on socio-emotional indicators of development. Enhanced levels of parental agreement about the organization of family life and symmetry in the allocation of time to child care emerge as the intervening mechanisms behind this association. Our findings lend support to theoretical claims about the relevance of within-family social capital in the creation of human capital.

The role of assortative mating in the intergenerational transmission of inequality is receiving increasing attention by stratification researchers (e.g. Hout and DiPrete 2006: 13; Mare and Schwartz 2006; Esping-Andersen 2007), with educational similarity most recently cited as one of the components of social capital shaping economic mobility in contemporary America (Butler, Beach and Winfree 2008). In this paper, we focus on educational assortative mating (hereafter ‘EAM’, or ‘educational homogamy’) and address one of its major motivating concerns, namely the possibility that educational homogamy leads to an increasing differentiation in the ability of families to invest in their children. We adopt an inter-generational perspective and investigate the connection between parental homogamy, the family arrangements and investment strategies it can lead to, and children’s school readiness (hereafter, ‘SR’) at age 5.

We examine the impact of EAM on children’s outcomes using data from the Fragile Families and Children Wellbeing Study (FFCW), which offers multiple advantages for our purposes. It provides extensive information on family characteristics and a variety of indicators of children’s development at the age of kindergarten entry. Most importantly, it collects both mother and father reports and thus permits us to explore the homogeneity in partners’ preferences and family arrangements and identify the mechanisms linked to educational homogamy. Collecting information separately from both parents is essential to examine dimensions of family functioning such as “value consensus, expectations, exchange, and perceived obligations” (Furstenberg 2005:818). Our analytic combination of EAM and family investment strategies is linked to the interest that sociologists have developed in the role of social capital in the creation of human capital (e.g. Coleman 1988). We shall argue that educational similarity has positive consequences for children by fostering cooperation between parents and the adoption of more effective investment strategies –dynamics that can be classified as a form of within-family social capital.

We focus on early childhood (ages 0-5), a period during which time and energy demands for children’s monitoring, supervision and stimulation are particularly intense (Waldfogel 2006). Early childhood is thus a good stage for different strategies of allocating time and labor between the market and household production to emerge. Furthermore, the acquisition of early cognitive skills and behaviors that

prepare children for the future has become a major concern due to the recurrent finding of substantial social and ethnic/racial differentials in early ability (Lee and Burkam 2002) and to the relevance of early development for later educational achievement (Duncan et al. 2007; Cunha et al. 2006).

### **Educational assortative mating and its potential consequences**

Over the last decades, increasing instability in living arrangements and large disparities in families' economic security in the United States have been closely linked to the growing importance of education in determining a) marriage, union dissolution and fertility patterns (Ellwood and Jencks 2004; Carlson, McLanahan, and England 2004), b) economic well-being (Deere and Vesovic 2006; Gottschalk and Danziger 2005), and c) family investments in children, including parenting standards and practices (Bianchi et al. 2004; Lareau 2003). The intergenerational implications, as McLanahan (2004) argues, are "divergent destinies" of American children, increasingly tied to their parents' education. Hence, EAM, as far as it represents a critical interplay between the growing importance of education and the role of the family in shaping children's life chances, seems a natural branch of intergenerational stratification research.

Traditional EAM scholarship has largely focused on analyzing the patterns of educational sorting and identifying the processes that generate such patterns. These lines of enquiry have documented an increase in the propensity of partners to resemble each other in educational attainment in many post-industrial societies (Qian and Preston 1993; Blossfeld and Timm 2003; Schwartz and Mare 2005). For the period covering the FFCW births, Schwartz and Mare's (2005) estimates of the odds of crossing an educational barrier relative to the odds of homogamy revolve around 0.35 for the pairs at both ends of the educational distribution (2005: 638). However, documenting patterns of mate choice and examining their consequences are two quite different analytic tasks. To date, most studies have attempted to measure the contribution of homogamy to economic inequality (Burtless 1999; Gottschalk and Danziger 2005), or to relationship status and transitions (Goldstein and Harknett 2006), but attempts to estimate the impact of educational homogamy on children's schooling outcomes are surprisingly rare. At most, an incipient line

of research tries to link child outcomes to the partners' similarity in parenting style (Martin, Ryan and Brooks-Gunn 2007) or to the concordance between parenting and marital quality (Belsky and Pasco Fearon 2004), and tends to find beneficial effects of parental harmony. Thus far, evidence of interactive effects between the mother's and father's influence is weak, and the determinants of such similarity remain unexplored.

The consequences of parental educational sorting are a source of concern insofar as EAM widens disparities across families in their capacity to invest in the wellbeing and human capital of their offspring. On the one hand, an accumulation logic suggests that the total level of resources available for such investments reflect each partner's contributions (or lack thereof) of economic, cultural and social inputs. On the other, sorting on education can be taken as an indicator of homogeneity in partners' preferences, and couples in which both partners have attained the same level of schooling can be expected to suffer less frictions as investors in children's human capital; that is, partners' relative accord on these dimensions may interact positively with the level of household resources available and lead to higher or more efficient investments. Overall, thus, both the absolute levels of individual educational attainment and the relative disparity between parents' education can be relevant for the organization of family life and investments in children. Our interest here centers precisely on that second dimension of relative parental similarity.

### **The mechanisms linking parental educational homogamy and children's outcomes**

Central to our understanding of these processes is the sociological interest in family-based social capital and its contribution to the transmission of human capital (Coleman 1988). The resemblance in preferences and resources commanded by each partner can help clarify partners' obligations, reduce the uncertainty associated with long time horizons, and reinforce the feelings of reciprocity and cooperation for a common good. EAM may thus translate in a series of attitudes and behaviors that enhance the efficacy of investments in children's development by easing the flow of information between parents and

the coordination of their allocation decisions. In this vein, and following Furstenberg (2005), we suggest the implications of EAM can be interpreted as a form of within-family social capital.

Furthermore, we see this sociological focus on family coordination and cohesion as entirely compatible with non-cooperative bargaining models of the household (Lundberg and Pollak 1994; Lommerud 1997), which allow partners to hold different and potentially conflicting preferences regarding the organization of family life and allocation decisions about consumption and investment. Within this framework, the production of children ‘quality’ is a function of a variety of inputs from money to care-time, and both parents are assumed to care about children’s development –i.e. children constitute a family public good— but also about their own welfare. Individual and joint strategies for the provision of market and household goods and services are then negotiated between parents, with under-provision of household public goods as a potential outcome of the non-cooperative bargaining (Behrman 1997). We expect the result of these negotiations to be partly determined by the relative accordance between partners’ preferences and bargaining power, factors into which their relative educational resemblance can provide valuable insights.<sup>1</sup>

We propose the following causal chain to explain the influence of EAM on children’s outcomes: homogamy, as an indicator of homogeneity in preferences and personal resources, will positively influence parental *agreement* and *coordination*, which in turn should increase the efficacy of investments in children, thereby fostering development. By *agreement* we refer to relative concordance between parental preferences about the organization of family life. By *coordination* we refer to relative symmetry in the allocation of time, especially with regard to time with children. Sorting on education is taken as an indicator of homogeneity in partners’ preferences and personal resources, and thus as an enhancer of efficiency in the production of ‘child quality’. For two reasons: first, similarity of preferences should reduce friction in resource allocation decisions; second, less unequal uses of time by parents should lead to children receiving a richer variety of inputs.<sup>2</sup> Thus, partners’ correspondence on these dimensions, for instance, having a similar preference for investment in family public goods, is expected to promote a more efficient allocation of resources, regardless of whether such preference is intense or not. The latter

we see as more closely related to individual levels of educational attainment. Implied in this framework is that parental coresidence is the optimal context to examine emerging implications of EAM as resource sharing and parental coordination become most relevant when both parents reside in the same household.

### **School readiness and its determinants**

Early childhood is a particularly sensitive period in the process of human development, wherein the interplay of nature and nurture lays the foundations for cognitive functioning, physical health and behavioral capacities (Knudsen et al. 2006). Variations in early childhood experiences typically translate into disparities in children's capacity to absorb school inputs gainfully. The prevailing approach to SR sees it as involving the mastery of foundational concepts as well as behaviors that facilitate classroom adaptation (Kagan, Moore, and Bredekamp 1995). The non-cognitive components of SR typically include aspects such as children's ability to interact socially and cooperate, to understand their own and other people's emotions and behavior, and their persistence on the tasks they embrace, skills that are important when a child is first required to adjust to the rules of the school setting and the presence of other children.

A growing body of research argues that both early social and emotional development and cognitive abilities are key for children's success in later academic and labor market outcomes (Barnett, Young, and Schweinhart 1998; Farkas 2003). The finding that early competence bears upon subsequent achievement holds across a variety of datasets and stages of schooling ranging from kindergarten and early grades (Duncan et al. 2007, Hair et al. 2006, McClelland et al. 2000) to educational qualifications by early adulthood (Entwisle, Alexander and Olson 2005, Feinstein 2003).

The emergence of differentials in cognitive and socio-emotional development before the beginning of formal schooling is critically linked to family inputs such as differences in parenting practices. To this end, Lareau's (2003) work finds critical qualitative differences existing across social strata captured, in part, by the "concerted cultivation" practices typical of middle-class parents. Bodowski and Farkas (2008) and Cheadle (2009) also find ample evidence of differentiated parenting styles by family SES using ECLS-K data. Other analyses consistently reveal that SES-based disparities tend to

magnify as children progress through kindergarten and first grade (Lee and Burkam 2002; Denton and West 2002), further emphasizing the critical role of family environment in influencing the mobility of children. In sum, research suggests that SR, rooted in early family environment, possesses a multifaceted character and exerts a long-lasting influence on children's educational trajectories.

## **Data and Methods**

We use data from the Fragile Families and Child Wellbeing Study (N=4,898). The study has a longitudinal birth-cohort design and follows children born between 1998 and 2000 in twenty US cities (Reichman et al. 2001). It oversampled unmarried mothers, with approximately 75% of the sample children born outside of a marital union. Data were collected at birth, and at one, three and five years following birth. Our outcomes are derived from an additional In-Home module during the five-year data collection designed to measure the physical environment and parenting practices through direct observation. We use baseline couple weights to account for the twenty-city sampling design and oversampling of non-marital births, and multiple imputation to supplement missing information on our independent variables.

We first excluded those families who were missing information on the child's PPVT test (N=2453), either because they were not selected to take part in the In-Home Survey or because they opted to take the survey by phone.<sup>3</sup> The second restriction we imposed on our analytic sample was to exclude all children whose residence with both the mother and the biological father for the majority of the five-year period was ambiguous. Thus, our sample can best be thought of as approximately representative of biological-parent couples who stay or join together by child's age 5 from the 20 cities that FFCW data samples. Our sample includes three types of couples: stably married, couples who transition into marriage, and cohabitators. We consider biological parents only to ensure more consistent coresidence and avoid the confounding effects of social parenthood and external family commitments outside our focal households.<sup>4</sup> Based on relationship status information from the four waves of data, we exclude families in which mothers were cohabiting or married to a social father at any point during the five years, where

mothers claimed to end the period in a noncoresidential union (or living alone), and finally mothers who claimed to be ‘living alone-not romantically involved with the biological father’ for more than one period. Our relationship trajectory rules excluded an additional 1309 families. Mothers who were not in the twenty-city sample and those that did not consistently live full-time with the focal child over the five years were also excluded, yielding a final N of 896. Beyond relationship status, our analytic sample has a higher proportion of racially endogamous couples, educationally homogamous couples and college educated mothers as compared to the original FFCW sample, but is otherwise relatively similar in terms of age, nativity and mother’s race and ethnicity. Differences in baseline characteristics between the full sample, subsamples that were excluded, and finally, our analytic sample, are illustrated in Appendix 1.

Inclusion based on relationship longevity is particularly demanding in the case of cohabitators, whose unions tend to dissolve at a faster pace. Thus, along the spectrum of union formality, our group of long-term cohabiting parents falls much closer to married than to dating or short-term cohabiting parents in terms of stability and kinship bonds with the children present in the household. We argue, though, that this serves only to lessen the selectivity bias inherent in samples with diverse family types.

[Table 1]

*School Readiness Outcomes.* Table 1 presents descriptive means for the full analytic sample, as well as for homogamous and heterogamous couples separately, of the study’s dependent and independent variables. To capture the focal child’s verbal ability, or cognitive readiness, we utilize an age-standardized Peabody Picture Vocabulary Test-Revised (PPVT-R) score (M=96.54). Children’s non-cognitive readiness, measured using subscales derived from the Child Behavioral Checklist, are composed of a number of mother-reported items regarding the extent to which statements about the child’s behavior are true (0 = not true, 1 = sometimes or somewhat true, 2 = often or very true). Externalizing problems is the sum of mother-reported responses to the aggressive and rule-breaking behavior subscales (M=6.48,  $\alpha=.81$ ). These subscales include items such as whether a child attacks others, argues, disobeys, steals,

swears, or vandalizes property. Internalizing problems is the sum of scores on the anxious/depressive and withdrawn behavior subscales ( $M=3.67$ ,  $\alpha=.69$ ). Anxious/depressive items include, for example, whether the child worries that no one loves her, she might do something bad, or that she has to be perfect. The withdrawn items include items like: whether a child is uninvolved in social activities, refuses to talk, or would rather be alone. Attention problems captures behaviors such as whether a child stares blankly, is confused, or acts without thinking ( $M=2.32$ ,  $\alpha=.45$ ). Social problems include mother reports of the focal child not being liked by other children, preferring to be with younger children, or being teased ( $M=1.12$ ,  $\alpha=.56$ ). Table 1 also illustrates that, on average, PPVT-R scores are higher and behavior problems lower among children in homogamous as compared to heterogamous households. Statistical tests indicate that these differences are significant. In the final models all outcomes are standardized to have a mean of zero and standard deviation of one.

[Table 2]

*Educational Homogamy.* Our primary variable of interest is a constructed dichotomous indicator of educational homogamy, where 1 indicates that the parents have the same level of education (56.1%) and 0 indicates a dissimilar level. We define same level of education using the following four categories: ‘less than high school’, ‘high school graduate’, ‘some college experience’, and ‘college degree or more’. Table 2 shows frequencies by parents’ education levels as well as the ratio of actual unions relative to the expected distribution of unions based on the educational composition of our sample and mating at random. First, the number of homogamous couples at any given education level is 1.5 times (or more) greater than would be expected by distributions alone, with homogamy especially intense at both ends of the educational scale. One limitation of our data, not visible in the table, is that non-marital unions are concentrated at the bottom of the distribution (92.7% of college-educated mothers are married by year 5).

In analyses not shown we also examined whether the type of heterogamy mattered, but found that associations of ‘mother more educated’ as compared to ‘father more educated’ with SR were not

statistically different. Further, we also examined measures of social distance as captured by an absolute difference in levels between the mother's and the father's attainments, or as a series of dichotomous indicators noting the degree of difference (0, 1, 2, or 3 levels). These analyses suggested very similar conclusions to those results presented here; further, statistical tests indicated that level differences (1, 2, 3) were not consistently statistically different to warrant such a strategy.<sup>5</sup> Yet, we believe that the dichotomous indicator of homogamy captures the essence of our argument about relative comparative advantages and relative similarity of preferences given the relevant differences these educational transitions imply in terms of earnings potential and socialization experiences.

*Controls.* We also account for individual levels of both mother's and father's education (using the four categories detailed above). High school graduate is the omitted category for mothers and some college experience is the omitted category for fathers; this particular combination is not only common (N=65), but also in line with the tendency of heterogamous pairings to include a more educated husband. Returning to Table 1, our homogamous sample had a bimodal education distribution with proportionally more couples either with less than high school degrees, or conversely, college degrees. In contrast, our heterogamous sample has proportionally more couples in which either the father or mother has only a high school degree or some college experience.

We also include indicators of whether the mother or the father is an immigrant, controls for both mother's and father's age, for whether the mother was black, Hispanic or other race (white Non-Hispanic is the omitted category), and included an indicator as to whether the father was a different race or ethnicity. In terms of child characteristics, we account for gender of child and low birth weight. Additional controls include a measure of household income at child's age 5 (M=60,077), as well as a measure indicating whether or not the mother worked full-time during the first year following the birth (53.5%). We focus on early maternal employment following Waldfogel (2006: 45-62), who notes that negative consequences appear to be limited to full-time employment during the first year of child's life. We also control for the number of children in the household when the focal child is five years old (M=2.62) to account for the possibility that time and economic resources shaping a child's school

readiness may be more diluted in larger households. We include a series of dichotomous indicators capturing the primary non-parental child care arrangements at child's age 3: center-based, formal care, informal care and the omitted category, parental care. Finally, we also account for factors that may be associated with intergenerational transmission of ability and behavior, such as mother's PPVT-R score and history of psychological problems on the mother's side. Our homogamous group has a much larger proportion of couples in which the father and/or mother is an immigrant, and the mother is Hispanic/other race or Non-Hispanic white. Homogamous households also have higher earnings at child's age 5 and a lower proportion of mothers who worked full-time following the birth of the child.

To capture relationship trajectories, we include two dichotomous indicators of parents' living arrangements: continuously married parents (60%) and parents that transitioned into marriage during the five years following the focal child's birth (14.1%). The omitted category includes those that were continuously cohabiting and those that transitioned into a cohabiting relationship with the biological father from either 'romantically involved' or simply 'living alone' (25.9%).<sup>6</sup> As expected, more continuously married couples are homogamous (66%) compared to heterogamous (52.4%); however a higher proportion of the couples that transition to marriage over the period are heterogamous (20.8% versus 8.8%), and the proportions are quite evenly distributed for cohabitators. While previous research finds little difference between married and cohabiting unions with respect to sorting patterns, these studies most often capture relationship entry and are not confounded by differential dissolution (Blackwell and Lichter 2004; Qian 1998).

*Mediators between homogamy and children's SR.* This section presents the set of indicators of parental *agreement* and *coordination* that we expect to be associated with partners' relative educational resemblance. Our measures are not restricted to dimensions connected directly to children but also look at other aspects of family life that can affect children indirectly.

A first set of indicators taps into the dimension of *agreement*, and captures the relative similarity of parental preferences with respect to a variety of family life issues. Inter-parental friction is likely to permeate parenting practices and involvement, thus affecting children's development though diminished

parental consistency and accord (Krishnakumar and Buehler 2000; Belsky and Pasco Fearon 2004). The following indicators take the form of the discrepancy between partners' attitudes, measured as the summed difference between their answers to a series of questions about family life. We expect that the more partners resemble each other in their educational attainments, the more similar their preferences on these dimensions will be –i.e. the smaller the differences between their reports about, for instance, the meaning they attribute to their union. *Meaning of the union* captures the perceived advantages of being married relative to remaining single on issues like financial security, child upbringing by lone parents, and whether marrying makes a difference if living together. *Agreement on gender roles and family decision-making* is measured using a series of items about the roles of men and women in the household and the ways family decisions are made. Items include, for instance, whether the family is better off with a male breadwinner and a female housekeeper, or whether parents should stay together because of children even if they do not get along. *Agreement on responsibilities of fatherhood* is expressed through a battery of items presenting a list of “important things” that fathers may do for their children, including providing financial support and protection, teaching them about life, providing direct personal care, or serving as an authority figure.

The following indicators sum mother's and father's responses to construct total measures of support and cooperation which are expected to correlate positively with EAM. *Parental supportiveness* uses respondent's reports of the degree of support (by the other partner) on dimensions such as willingness to compromise, expression of affection, encouragement to undertake personal initiatives, or physical and psychological aggression. It is operationalized as a count of the times that an optimal level of support was reported by either partner. *Cooperation in childrearing* is constructed from a set of items asking partners about how they work together in raising the child and whether they live up to each other's expectations in these roles. For example, whether he or she respects the rules set up for the child or how fluent is the communication regarding the difficulties of upbringing. Cooperation was measured as the joint number of times partners reported collaborative behavior.

A second set of mediators taps into the dimension of *coordination*, measuring the relative parental symmetry in the allocation of time to market production and to children. Whereas parental labor supply is the main determinant of family income, parental time with children has also been shown to be a critical influence on children's schooling outcomes (Datcher-Lourey 1988; Cooksey and Fondell 1996) and to correlate strongly with parental educational attainment despite the higher opportunity cost that more educated individuals incur in foregone earnings (Bianchi et al. 2004; Sayer, Gauthier and Fustenberg 2004). Thus, both preferences and opportunities are likely to play a role in these allocation decisions that parents negotiate.

Our measures of *market labor supply* are derived straightforwardly from the number of hours of work reported by partners. *Parental time with children* is constructed from maternal reports of the days-per-week frequency with which parents interact with children engaging in a series of activities. While our data do not attain the precision of time-use diaries, two design features of the FFCW study make it a valuable source of information for our purposes. First, biological parents provide both own and partner's time with children. With few exceptions results are robust to changes in the source of information used to construct these measures; however, given the lesser reliance on imputation we used mother's report about the father's involvement. Second, parents are asked about the frequency with which they engage in a variety of activities with children, thus allowing us to distinguish between *developmental* and *non-developmental* forms of care (Stafford and Yeung 2005). The former is of primary importance and includes activities primarily aimed at stimulating the child's verbal and reasoning abilities which involve direct engagement and supervision from the parents. We classify as *developmental care* parental activities such as reading and telling stories, playing imaginary games, or playing with assemblage toys or pieces. Given that the notion of SR we adhere to comprises socio-emotional skills as a critical component, we also code as developmental care parental warmth and cultivation of the child's emotional confidence such as telling the child something she does is appreciated. In contrast, *non-developmental care* refers to relatively passive stimulation, such as putting the child to bed, assisting her with eating or watching TV together. This care distinction may not always be clear-cut, but the focus on developmental care captures

features such as active engagement, a clear teaching intent and the development of skills that are likely to be useful in school (e.g. nightly reading to the child). We compute the mother's, the father's and joint dedication to developmental care, and, most critically, the ratio of father's to mother's care.

Our analyses proceed in three stages. We first examine mean descriptive differences by homogamy in the mediators outlined above and, to this end, present the relevant comparison tests. Second, we use weighted OLS models to examine whether homogamy, net of the respective education levels of parents, is associated with improved school readiness. The third stage of our analyses is to test the extent to which parental agreement and cooperation serve to mediate the associations between homogamy and school readiness.

## **Results**

This section offers descriptive evidence and comparison tests for the proposed mediators between homogamy and SR. We hypothesize that children will benefit from a relationship in which parents agree on their approach to childrearing, support each other's decisions, minimize children's exposure to inconsistent rules, and receive a richer variety of parental inputs. Concordance between the parents' mindsets and more symmetrical parenting are expected to interact positively with the level of material and personal resources that parents choose to dedicate to children and thus foster the efficiency of these investments. Table 3 presents mean comparison tests between homogamous and heterogamous couples for the indicators outlined above. The relevant comparisons are to be read row-wise since varying numbers of items across waves translate into difference potential ranges for mean scores. Column 4 indicates whether differences correspond to our theoretical predictions, and column 5 reports significance levels for the two-sided hypothesis test of identical means between the two groups.

[Table 3]

The upper panel of Table 3 shows results for our measures of agreement and cooperation between partners. Only accord on the meaning of the union is, as we expected, higher among homogamous partners. Yet, differences are small and clearly indecisive on all attitudinal indicators. The lack of attitudinal differentiation at baseline may reflect a stage of family life when the challenges and trade-offs of parenthood have not yet crystallized. On the contrary, and in accordance with our predictions, educationally homogamous partners are more likely to report higher levels of mutual support and cooperation in child rearing in all subsequent years, the differences being statistically significant in most cases. Results (not shown) for the frequency of arguments about family matters and the likelihood that the father is asked to increase the time he spends with the child also support our hypothesis. Overall, thus, the data tend to suggest less friction in family life among homogamous partners.

The degree of parental coordination, in both the overall amount and the relative asymmetry of partners' time with children is shown in the lower panel of Table 3. Given that women are still normally assigned primary responsibility of children's nurturance, we expect incentives for specialization to play a larger role in determining the amount of time fathers' spend with children; the prediction is borne out. Fathers in homogamous unions spend more time in developmental care than their heterogamous counterparts, although significance tests only allow a sufficient margin of confidence for years 3 and 5. Richer insight can be drawn from comparisons of within-couple differences in time devoted to children, shown as ratios of father's to mother's time. Indeed, homogamous couples tend to display a more symmetrical allocation of time in 2 out of 3 comparisons. This tendency toward a higher degree of symmetry among homogamous partners is confirmed by results for differences in (market) labor supply, which again prove substantially smaller in homogamous unions in years 3 and 5. Only in year 1 are significant differences found against our expectations, possibly due to mothers limiting time in the labor market following the birth of the child. Increasing homogamy may therefore play a role in the trend towards less gender specialization in contributions to family well-being (Bianchi, Robinson and Milkie 2006). In sum, these descriptive results fit well within our mediation framework: partners in educationally homogamous couples tend to have higher average levels of agreement on various dimensions related to

the organization of family life, and to allocate more similar amounts of time to parenting activities.

Couple symmetry tends to be positively associated with higher overall amounts of care by fathers, and to a lesser extent by higher amounts by each parent combined (correlations with symmetry of care are 0.73 and 0.39 for father's and joint care in year 3, respectively).

Table 4 presents OLS regression coefficients for our main predictors of interest on the five outcomes comprising children's school readiness. Model 1 includes the parental education variables and a set of basic demographic controls capturing each parent's race/ethnicity, age, nativity status and relationship status over the five years. Additional controls include maternal verbal ability and family history of psychological problems; child gender and low birth weight. Model 2 proceeds by incorporating our measure of educational homogamy, as a means of checking the extent to which the education variables are impacted by its inclusion. Model 3 further extends the list of controls by adding post-birth characteristics likely to be associated with homogamy, and the richness of children's learning environments, including household income and number of children in the household at child's age 5, whether the mother worked in the first year of the child's life, and the most prominent form of child care at child's age three. For PPVT, positive estimates are associated with a higher child's score; alternatively, the behavioral outcomes are all scaled such that positive values indicate worse behavior and negative estimates mean lower levels of behavior problems. Control variables estimates from the final models are shown in Appendix 2 but not discussed in text; results are largely consistent with directional expectations, though occasionally intermittent in their significance.

[Table 4]

Focusing first on the impact of parental education variables, we observe that, relative to the reference categories of high school graduate, for mothers, and some college experience, for fathers, attainments above and below these yardsticks influence children's PPVT scores largely as expected. Maternal education variables' coefficients tend to be higher than fathers', possibly reflecting the fact that

mothers spend on average a larger fraction of time with children. Once extended controls are introduced, we still find that having a poorly educated father harms children's school readiness in terms of PPVT and internalizing. Maternal college experience (not degree) is the only category to show a systematic and significant effect across all specifications and outcomes, improving children's PPVT scores and reducing behavioral problems. Surprisingly, the positive association of college graduate parent(s) with PPVT becomes non-significant once extended controls are introduced, suggesting that the positive associations may operate through household income and decisions regarding child care. In contrast, the reductions in internalizing and externalizing behavior that come from having a highly educated father become non-significant, though remain negative in direction, once homogamy is introduced, suggesting the beneficial associations for highly educated fathers may be relegated to homogamous unions. Additionally, having a high school dropout mother has a positive sign across outcomes, even reaching statistical significance for PPVT and internalizing problems, a puzzling pattern, but similar to other FFCW research (Berger et al. 2008: 374-76).

Central to our interest, the incorporation of a homogamy dummy (Model 2) does not substantially alter either the magnitude or the significance of the education coefficients, except in the aforementioned cases. This can be interpreted as a sign that being raised by a homogamous couple involves something beyond the benefit that children derive from their parents' education considered separately. Further, homogamy estimates are highly significant across models, and always work in the expected direction of boosting children's outcomes. For example, children living in a homogamous household have a PPVT score that is 0.160 standard deviations above those that live in heterogamous households, additionally such children have internalizing behaviors that are 0.341 standard deviations below a child in a heterogamous household (Model 2). Model 3 shows that the impact of educational homogamy is fairly robust to the inclusion of further controls, reducing the magnitude of associations only between 10 and 30 percent while eroding most parental education variables' significance. Finally, the estimates of homogamy are notably larger in magnitude for the set of four socio-emotional outcomes we explore than for cognitive development.

[Table 5]

Thus far, we have shown a consistent, beneficial association between parental educational homogamy and children's SR. To test whether our proposed mediators account for the impact of homogamy, Table 5 incorporates the most closely related indicators of family investments among those examined in previous sections. We add separately, and then jointly: the ratio of the father's to the mother's and the joint amount of developmental care, parental supportiveness, and cooperation in childrearing, all measured at year 3. Year 3 is used due to its independence from the specific needs of the child's first months of life (relative to year 1) and its temporal precedence to the outcomes.

In all cases, save internalizing problems, homogamy is reduced in magnitude and loses significance or marginally maintains it after incorporating the mediators. Mediators perform as expected in most models, boosting verbal ability and reducing behavioral problems. However, not all seem to be equally relevant for every outcome. Not surprising, given small descriptive differences and low correlations with care symmetry, *joint* developmental care stands out as having the least impact among the mediators. On the contrary, the *ratio* of developmental care between the partners has a large effect on four out of five outcomes. Higher relative amounts of father's time are beneficial for social problems, verbal ability and attention problems, but are also associated with more internalizing and externalizing problems. Our two indicators of parental agreement are also significant and work to reduce the impact of homogamy for most outcomes. When included jointly with the measures of care, supportiveness maintains its relevance for all behavioral outcomes and cooperation in childrearing does so for externalizing and social problems only. We conclude that our proposed mediators account for the bulk of the homogamy association and prove their relevance to the various components of children's SR, lending support to our causal narrative and the hypothesis that parental educational similarity fosters the efficacy of family investments in children's human capital.

### *Extensions*

Whereas we posit that the enhancement of parental agreement and coordination is independent of their educational level, it is reasonable to contend that the effects of homogamy may vary in magnitude, or even in sign, depending on whether the homogamous partners are high school dropouts or college graduates. Alternatively, negative (positive) effects of low (high) attainments could accumulate or be subject to mutual reinforcement, resulting in smaller estimates at the bottom of the distribution and larger ones at the top. The inclusion in our models of individual education variables accounts for these influences to some extent, but as a further check we tested interactions (not shown) between homogamy and maternal education we found no evidence of moderation. Further, excluding college graduates, or alternatively excluding high school dropouts, from our analysis did little to change our findings, in the former case homogamy estimates were slightly larger, while in the latter they were smaller, suggesting that our least educated mothers might be particularly select given the relationship stability demands for sample inclusion. While the weight of the available evidence suggests that this relationship does not vary by education level, we cannot discount the possibility that our small sample sizes may account for the lack of statistical significance, and await confirmation using larger samples.

### **Discussion**

The chief concern about the trend of increasing parental similarity in education is that (dis)advantages associated with different levels of attainment become more unevenly distributed across families. This paper attempted to shed light on a complementary dimension, the connection between parental educational homogamy and the variety of family arrangements and parenting strategies it can lead to. We explored some of the implications of the similarity of parental levels of schooling, with the hypothesis that such resemblance increases the agreement between partners regarding the organization of family life, mutual support and the symmetry of partners' contributions to childrearing during the critical period of early childhood. In doing so, we examined some of the mechanisms linking parental educational similarity and children's SR by age 5. The FFCW study was particularly well suited for our purposes

containing a wealth of information about parental attitudes and behaviors, and both cognitive and socio-emotional measures of children's development.

The first stage of our analyses consisted in examining differences in a series of indicators of parental similarity of preferences and coordination of time allocations. Descriptive results confirmed that educationally homogamous partners are more likely to report high levels of mutual support and cooperation in childrearing, suggesting less friction in the organization of family life. When we looked at both the overall and relative symmetry of partners' time dedication to children, we found that intra-couple differences in the amount of time each parent spends with the child are less pronounced in homogamous unions, particularly with regard to developmental activities. This tendency toward a higher degree of symmetry among homogamous partners correlated with marginally higher amounts of overall parental time with children. However, our results challenge causal narratives which focus exclusively on the amount of parental resources invested in children, at least among intact families. Descriptive results showed that incentives for specialization play a larger role in determining fathers' behavior, and that the main driving force behind the differences between homogamous and heterogamous couples is fathers' amount of time in parenting. Fathers in homogamous unions spent more time in developmental care than their heterogamous counterparts. Thus, what makes these two types of couples different it is not so much the amount of overall parenting time but the relative symmetry that EAM induces.

Secondly, we used OLS models to examine in a multivariate context to extent to which homogamy, net of the respective education levels of parents, is associated with greater SR. Controlling for parental education and an extensive set of demographic and household characteristics, our models indicate that homogamy works in the expected direction of boosting children's outcomes and that the estimates are fairly consistent across models. Interestingly, the homogamy estimates were larger in magnitude for the set of four socio-emotional outcomes we explored. This pattern suggests that the enhanced levels of parental coordination and similarity of preferences translate more easily into improvements in children's behaviors, thus supporting the idea that children are benefiting mainly from consistency in their family environments and more congruent parenting.

Finally, in extending the models to include the mediators, we find the positive impact of homogamy is largely accounted for by our indicators of parental agreement and coordination —the ratio of the father's to the mother's developmental care, parental supportiveness, and cooperation in childrearing, which all prove to be relevant predictors of several components of children's SR. We interpret these results as supportive of our hypothesis that parental educational similarity fosters the efficacy of family investments in children's human capital by enhancing parental coordination and diminishing specialization in parenting tasks. In our view, the intra-household dynamic EAM leads to can be characterized as a form of within-family social capital and our findings read as a confirmation of the relevance of the latter in the inter-generational transmission of human capital.

All in all, we believe this paper raises insightful questions about the consequences of EAM for the family transmission of inequalities in education. Our results relate to homogamy regardless of the level of education at which it occurs; the incorporation of a homogamy dummy does not substantially modify the parental education estimates, and we find very few differences with alternative modeling strategies for education. This suggests that the mechanisms behind the impact of parental educational similarity are distinct from the transmission of human capital via parental skills. Coordination and consistency can emerge irrespective of parental preferences for child quality being weak or strong. If this is indeed the case, increases in homogamy could partially cancel out the negative consequences of a polarization in the distribution of resources across families. Firm conclusions about the societal consequences of increasing EAM in the US are premature without examining, more carefully, whether homogamy may act as a multiplier of the effects of education, a critical question we will pursue using other datasets better suited for the purpose. Despite their limitations, we maintain our results provide valuable insights into the differentiation of family life and investment strategies. We brought to light some of the mechanisms, unavailable in other data sources, which may be driving the impact of homogamy on children's SR by showing that relative symmetry in parental behaviors (and not overall levels of investment) is what distinguishes homogamous couples most. This line of reasoning suggests

that mothers and fathers are providing distinct and complementary inputs for children's development, rather than substitutable stimuli.

## Notes

<sup>1</sup> Bargaining power is typically operationalized as *actual* income contributions, which are endogenous to the negotiation of the division of labor; however, educational attainment is a valuable proxy not just for individuals' earnings *potential*, but also for the value of their contributions in other domains. Likewise, it is likely to correlate positively with self-confidence and negotiation skills. Hence, by going beyond pecuniary aspects, it may be a more meaningful approximation to the notion of bargaining power we are interested in here.

<sup>2</sup> This runs against the logic of the Beckerian framework, where complete gender specialization between market and household production is as an efficient solution provided that an initial comparative advantage exists. Yet, the production of *child quality* might present some peculiarities that advice *against* complete specialization. Efficiency may not hold if parental inputs to the production of child quality are not good substitutes but complements instead. Indeed, there are reasons to suspect that parental contributions do not possess the property of perfect substitutability: on the one hand, family disruption has been shown to weaken the intergenerational transmission of socioeconomic status, and its effects to be stronger when the mother is absent (Biblarz and Raftery 1999); on the other, the gender of a child seems to trigger differential parental involvement, although it is unclear whether parents have a gender-bias or are more efficient interacting with same-sex children (Lundberg 2005; Raley and Bianchi 2006).

<sup>3</sup> Mother-reported behavioral outcomes are missing less than the PPVT-R as such outcomes could be reported over the phone. Analyses that take advantage of all non-missing behavioral outcomes do not significantly differ from the sample we use to ensure comparability to the PPVT-R.

<sup>4</sup> The question of whether parental similarity of preferences and coordination holds for individuals with different kinds of bonds to children or parallel family obligations (e.g. social fathers of the FFCW children with offspring in other families) merits attention. For appropriate modeling, it would expand grandly the set of parameters. In simple models, non-coresident families, when considered separately did not show the same pronounced association for homogamy. We postpone a more detailed investigation to future work.

<sup>5</sup> We are somewhat limited in measuring social distance as data includes discrete categories of education, rather than years. However, given that transitions are the most consequential to economic wellbeing, we expect that social

distance will also be nonlinear in this respect; likewise, the assortative mating literature also points to this nonlinearity particularly with respect to the division between some college and college degree.

<sup>6</sup>We also parsed out the continuously cohabiting couples from the transition into cohabiting couples in one set of analyses; however, statistical tests indicated that these groups were not statistically different.

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Table 1  
*Descriptive Statistics by Educational Homogamy*

	Total N = 896		Homogamous n = 464		Heterogamous n = 432	
	M	SD	M	SD	M	SD
<i>School Readiness outcomes</i>						
PPVT-R	96.54	15.73	98.25 <sup>a</sup>	16.52	94.35	14.36
Internalizing	3.67	2.99	3.27 <sup>a</sup>	2.83	4.17	3.12
Externalizing	6.48	4.83	6.17 <sup>a</sup>	4.70	6.86	4.96
Social problems	2.32	1.88	2.15 <sup>a</sup>	1.86	2.55	1.89
Attention problems	1.12	1.56	1.03 <sup>a</sup>	1.56	1.24	1.55
<i>Maternal controls</i>						
Less than high school (%)	26.0		32.5 <sup>a</sup>		17.8	
High school degree (%)	27.1		18.6 <sup>a</sup>		38.0	
Some college experience (%)	18.8		16.0 <sup>a</sup>		22.4	
College degree or higher (%)	28.0		32.9 <sup>a</sup>		21.7	
Age at baseline	28.0	5.95	28.5 <sup>a</sup>	5.89	27.4	5.99
Black (%)	28.1		20.0 <sup>a</sup>		38.5	
Hispanic/Other (%)	39.0		45.9 <sup>a</sup>		30.3	
White (%)	32.8		34.1		31.2	
Immigration status (%)	26.7		32.4 <sup>a</sup>		19.5	
Mother worked during child's first year (%)	53.5		49.9 <sup>a</sup>		58.2	
Either parent had psychological problems (%)	35.7		33.9		38.0	
Mother's PPVT-R	91.9	14.72	93.5	15.88	89.85	12.81
<i>Paternal Controls</i>						
Less than high school (%)	29.7				26.2	
High school degree (%)	22.0				26.3	
Some college experience (%)	25.3				37.2	
College degree or higher (%)	23.0				10.3	
Age at baseline	30.1	7.05	30.3	7.08	29.8	7.01
Immigration status (%)	27.8		31.1 <sup>a</sup>		23.6	

Table 1  
Continued

	Total N = 896		Homogamous n = 553		Heterogamous n = 433	
	M	SD	M	SD	M	SD
<i>Couple/Household Characteristics</i>						
Homogamous union (%)	56.1					
Racially/Ethnically exogamous (%)	7.5		5.3 <sup>a</sup>		10.4	
Continuously married (%)	60.0		66.0 <sup>a</sup>		52.4	
Transitioned to marriage (%)	14.1		8.8 <sup>a</sup>		20.8	
Cohabiting/Transitioned to cohabiting (%)	25.9		25.2		26.8	
Number of children in household	2.62	1.14	2.45 <sup>a</sup>	1.05	2.84	1.20
Household Income, Year 5	60077.3	60270.5	68937.2 <sup>a</sup>	70101.9	48758.0	42050.8
<i>Child Controls</i>						
Low birth weight (%)	6.1		5.4		7.1	
Gender, child male (%)	59.6		63.1 <sup>a</sup>		55.1	
Formal child care, Year 3 (%)	19.9		22.8 <sup>a</sup>		16.2	
Informal child care, Year 3 (%)	29.3		28.2		30.6	
Family child care, Year 3 (%)	50.8		51.0		53.2	

Note: <sup>a</sup>Indicates that difference between groups is significant at  $p < 0.10$ . Statistics from the analytic sample (N=896) are weighted to account for sampling design when appropriate. Source: Fragile Families and Child Wellbeing Study.

Table 2. *Descriptive Statistics, Educational Distributions*

	Paternal Education			
	Less than High School	High School Graduate	Some College Experience	College Degree or Higher
	Ratio <sup>a</sup> /N	Ratio/N	Ratio/N	Ratio/N
<b>Maternal Education</b>				
Less than high school	2.18 / 155	.95 / 70	.31 / 20	.05 / 2
High school graduate	.93 / 68	1.52 / 114	.98 / 65	.15 / 6
Some college experience	.46 / 31	1.00 / 69	1.63 / 98	.94 / 34
College degree or higher	.09 / 4	.29 / 14	1.17 / 49	3.88 / 97

*Note:* Ratio statistic is the ratio of actual partnerships in the cell to the expected partnerships based on educational distributions and mating at random. Ns are unweighted counts of partnerships in the analytic sample (N=896).

Source: Fragile Families and Child Wellbeing Study.

Table 3. Indicators of parental similarity of preferences and symmetry in the allocation of time between homogamous and heterogamous couples. Mean comparison tests.

	Year	Heterogamous	Homogamous	ED <sup>a</sup>	Diff. P> t
<b>A. Agreement</b>					
<i>Difference between father and mother reports:</i>					
Meaning of the union	Baseline	4.40	3.80	Yes	.01
Gender roles	Baseline	3.60	3.59	Yes	--
Duties of fatherhood	Baseline	.66	.67	No	--
<i>Total couple (father and mother) report of:</i>					
Parental supportiveness	1	16.70	17.00	Yes	--
	3	19.25	20.29	Yes	.001
	5	26.40	27.70	Yes	.001
Cooperation in childrearing	1	30.93	31.33	Yes	.05
	3	33.05	34.08	Yes	.001
	5	33.39	33.59	Yes	--
<b>B. Coordination</b>					
<i>Total developmental care reported by:</i>					
Mother	1	33.85	33.10	n.a.	--
	3	47.48	45.99	n.a.	.05
	5	25.11	25.48	n.a.	--
Father	1	25.82	25.30	No	--
	3	37.49	40.15	Yes	.05
	5	17.87	19.79	Yes	.01
Couple	1	59.67	58.40	No	--
	3	84.97	86.14	Yes	--
	5	42.98	45.27	Yes	.05
<i>Ratio of father's to mother's:</i>					
Developmental Care	1	.896	.800	No	--
	3	.802	.886	Yes	.001
	5	.724	.786	Yes	.01
<i>Difference between father's and mother's report of:</i>					
Market labor supply <sup>b</sup>	1	27.49	30.36	No	--
	3	15.96	8.92	Yes	.001
	5	10.75	7.19	Yes	--
Market labor supply <sup>c</sup>	1	12.94	13.42	No	--
	3	12.49	7.64	Yes	.01
	5	11.66	7.44	Yes	.05

*Note:* Entries are means for the listed indicators in our analytical sample (N=896) after multiple imputation. Potential ranges vary according to the different number of items available in each wave. (-): statistically non-significant differences. (n.a.): does not apply. <sup>a</sup> Indicates whether the difference runs in the expected direction. <sup>b</sup> Difference in supply for all couples. <sup>c</sup> Difference in supply for couples in which both spouses work.

Table 4  
*OLS Regression Results Predicting Cognitive and Behavioral School Readiness*

School Readiness outcomes	PPVT-R			Internalizing			Externalizing			
	1	2	3	1	2	3	1	2	3	
<i>Maternal controls</i>										
Less than high school	.184*	.137 <sup>†</sup>	.150 <sup>†</sup>	-.507***	-.408***	-.409***	-.136	-.083	-.064	
Some college experience	.286***	.270***	.207**	-.314***	-.280**	-.256*	-.290**	-.272**	-.210*	
College degree or higher	.212*	.214*	.094	.025	.021	.102	-.058	-.060	.014	
<i>Paternal Controls</i>										
Less than high school	-.175*	-.193*	-.196*	.272**	.310**	.311**	-.024	-.004	-.016	
High school degree	.106	.086	.061	-.070	-.028	-.027	.047	.070	.071	
College degree or higher	.206**	.130 <sup>†</sup>	.070	-.288**	-.127	-.044	-.242*	-.157	-.167	
<i>Couple Characteristics</i>										
Homogamous union		.160***	.115*		-.341***	-.288***		-.180**	-.145*	
R-Squared	.407	.415	.434	.161	.184	.214	.108	.116	.139	
		Social Problems			Attention Problems					
	1	2	3	1	2	3				
<i>Maternal controls</i>										
Less than high school	-.116	-.046	-.033	-.130	-.057	-.037				
Some college experience	-.251*	-.227*	-.147	-.360**	-.336*	-.358**				
College degree or higher	-.133	-.136	-.003	-.199	-.202	-.176				
<i>Paternal Controls</i>										
Less than high school	.091	.117	.096	.146	.175	.164				
High school degree	-.006	.023	.024	-.003	.029	.004				
College degree or higher	-.088	.025	.082	-.006	.112	.183				
<i>Couple Characteristics</i>										
Homogamous union		-.239***	-.170*		-.251**	-.226*				
R-Squared	.079	.091	.129	.074	.084	.104				

Note: Outcomes have all been standardized. <sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 5. OLS Regression Results Predicting School Readiness with Symmetry in the Allocation of Time and Similarity of Preferences as Mediators of the Effect of Homogamy

Outcome	Homogamous Union	Joint Developmental Care	Ratio of Father's to Mother's Care	Parental Supportiveness	Cooperation in Childrearing
PPVT	.115*				
	.094 <sup>†</sup>	-.001	.409**		
	.101*			.014*	
	.091 <sup>†</sup>				.032**
	.081	-.001	.315*	.002	.024
Internalizing	-.288***				
	-.291***	.0002	.064		
	-.252***			-.036**	
	-.264***				-.032**
	-.251***	.002	.203	-.031*	-.021
Externalizing	-.145*				
	-.160*	-.006**	.313 <sup>†</sup>		
	-.104			-.042***	
	-.118 <sup>†</sup>				-.038**
	-.118 <sup>†</sup>	-.004 <sup>†</sup>	.473**	-.032**	-.027 <sup>†</sup>
Social Problems	-.170*				
	-.151*	.001	-.385*		
	-.124 <sup>†</sup>			-.047***	
	-.130 <sup>†</sup>				-.055***
	-.105	.003	-.201	-.032**	-.033*
Attention Problems	-.226*				
	-.195*	.005 <sup>†</sup>	-.622**		
	-.136			-.091***	
	-.170 <sup>†</sup>				-.076***
	-.107	.009***	-.372 <sup>†</sup>	-.084***	-.024

Note: Outcomes have all been standardized. <sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Appendix 1

*Selected Characteristics of Various Fragile Families Samples*

	Sample 1 <sup>a</sup> (n = 4,898)	Sample 2 <sup>b</sup> (n = 731)	Sample 3 <sup>c</sup> (n = 1,722)	Sample 4 <sup>d</sup> (n = 1309)	Sample 5 <sup>e</sup> (n = 896)
Baseline characteristics					
Maternal age	26.98	27.22	27.60	24.28	27.99
Paternal age	29.64	30.71	30.39	26.83	30.07
Maternal race/ethnicity					
African American (%)	33.78	32.24	27.59	54.22	28.12
Hispanic or Other Race/Ethnicity (%)	36.73	33.85	37.25	34.88	39.04
White (%)	29.49	33.91	35.16	10.90	32.84
Racial exogamy (%)	14.23	22.33	14.62	16.14	7.54
Maternal immigrant status (%)	27.33	41.77	27.70	16.26	26.7
Paternal immigrant status (%)	29.50	48.07	28.25	19.68	27.82
Maternal education					
Less than High School (%)	28.28	33.91	18.99	44.50	26.02
High School Degree (%)	31.97	34.56	32.14	36.07	27.12
Some College Experience (%)	19.31	13.18	24.06	15.69	18.84
College Degree or Higher (%)	20.45	18.34	24.81	3.74	28.02
Educationally Homogamous Union	53.18	49.12	51.55	55.52	56.09
Child gender (% male)	57.32	55.53	57.90	54.52	59.63
Child low birth weight (%)	10.08	11.80	8.28	17.57	6.15

*Note:* All statistics are weighted to account for sampling design. <sup>a</sup>Original Fragile Families Study sample. <sup>b</sup>Mothers who did not participate in the five-year core survey. <sup>c</sup>Mothers who did not attrite, but were excluded because of non-inclusion in In-Home survey or missing child's PPVT. <sup>d</sup>Not missing child's PPVT, but excluded because did not meet relationship sample criteria. <sup>e</sup>Analytic sample. Approximately 150 additional mothers were excluded because the child did not consistently live with the mother, and 90 excluded because they were not in the 20 city sample.

Appendix 2

*Additional Control Variable Estimates from Model 3 (Table 4)*

	PPVT-R	Internalizing	Externalizing	Social Problems	Attention Problems
Maternal age	-.008	.012	-.017*	.011	-.006
Paternal age	.017***	.004	-.014*	-.0004	-.007
African American (Mother)	-.178*	-.421***	-.412***	-.177 <sup>†</sup>	-.480***
Hispanic or Other Race/Ethnicity (Mother)	-.183**	.256*	-.083	.297**	-.074
Racial exogamy	.221**	-.284*	-.062	-.086	-.201
Maternal immigrant status	-.178*	-.153	.151	-.106	-.134
Paternal immigrant status	-.091	.065	-.184*	-.019	-.087
Maternal PPVT-R	.010***	-.009*	-.001	.0003	.007
Mother worked in year after birth	-.064	.204*	-.010	.077	.217*
Family history of psychological problems	-.111*	.289***	.008	.185**	.118
Household income, Wave 4	.002***	-.002**	-.001 <sup>†</sup>	-.003***	-.002*
Number of children in home, Wave 4	-.059**	-.020	.091**	.071*	-.051
Formal child care, Wave 3	.078	-.308***	.207*	.060	-.146
Informal child care, Wave 3	.091	.089	.206**	.293***	.156
Continuously married	.267**	-.412***	.105	-.333***	-.116
Transitioned to marriage	.146 <sup>†</sup>	-.293**	-.265**	-.226*	-.257 <sup>†</sup>
Child gender	.003	-.023	.232***	-.148*	.276***
Child low birth weight	-.119	.060	.056	.089	.143

*Note:* Outcomes have all been standardized. <sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .