Maternal Race and Black Outcomes*

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Spring 2011

Abstract

Differences in test scores between blacks and whites are stark. While much catchup occurred post-Civil rights, convergence has slowed. One of the potential sources for test score differences is differences in parenting practices across races. Mixed-race families allow us to identify the effect of maternal race as distinct from own-race effects. We find convincing evidence that black children with black mothers fare worse than black children with white mothers. For some outcomes, like full-time wages, the entire black-white wage gap can be explained with maternal race. We investigate the channels for this finding using detailed information on mother's parenting behaviors early in the life-cycle, finding that different home environments between black and white families with similar resources explain a significant portion of the black-white test score gap.

* This paper uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris, and funded by a grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 17 other agencies. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Persons interested in obtaining data files from Add Health should contact Add Health, Carolina Population Center, 123 W. Franklin Street, Chapel Hill, NC 27516-2524 (addhealth@unc.edu). No direct support was received from grant P01-HD31921 for this analysis.

1 Introduction

Differences in test scores between blacks and whites are stark and, while blacks showed some catchup through the 1980's, convergence in the black-white test score gap has stalled (Neal (2006)). These test scores serve as proxies for skills and go a long way in explaining differences in labor market outcomes (Neal and Johnson (1996) and Carneiro, Heckman and Masterov (2005)). Discrimination, or the threat of discrimination, surely still plays a role in the gaps in test scores and labor market outcomes, but it has become increasingly unsatisfactory in its ability to explain them as the successes of the Civil Rights Movement have rippled through the economy (Fryer (2010)). Heckman (2011) asserts that "discrimination is no longer a first order cause of racial disparity." Increasingly researchers have focused on the development of skills in the home and at school as explanations for the disparate outcomes. These differences in skill development across races may be driven by differences in family resources (income and wealth), school quality, and culture.

While a large black-white test score gap emerges before children begin school,[1] schools can nevertheless play a role in closing the gap. Empirical evidence suggests that if any group sees gains from additional resources in school, it is minorities, and, in particular, blacks. Krueger and Whitmore (2002) survey the literature on the effects of class size on test scores, finding that small class sizes are more beneficial for minority students and in particular more beneficial for blacks.[2] Neal (1997) shows benefits from attending Catholic schools for urban minorities that do not appear to be present for whites. Howell and Peterson (2002) summarize the literature on school vouchers, finding the benefits are greatest for blacks.

A natural question is then why school resources are more important for blacks than for other groups? As discussed in Todd and Wolpin (2003), cognitive achievement depends on both investments at home and at school and the two can serve as substitutes.[3] One potential

[1] Both Phillips, Brooks-Gunn, Duncan, Klebanov and Crane (1998) and Fryer and Levitt (2004) focus on understanding the early-life gap. See Neal (2006) for a review of the long literature.

[2] Krueger and Whitmore (2001) show that the small classes resulting from the Tennessee STAR experiment raised the likelihood of taking the SAT or ACT with the effects being strongest for blacks.

[3] See, for example Das, Dercon, Habyarimana, Krishnan, Muralidharan and Sundararaman (2011) and

explanation for the disparate effects of school resources across races is the ability of parents to substitute other inputs for poor schools. Namely, the effects on white students of having poor teachers may be undone by the actions of their parents in a way that does not occur in black households.

Particularly relevant to this issue is the debate between Peterson, Myers and Howell (1998), Peterson and Howell (2004), and Krueger and Zhu (2004a), Krueger and Zhu (2004b) on the effectiveness of vouchers. One of the points of the contention between first set of authors and the last two was how race was coded. Namely, when black is defined as having a black mother, the effects are stronger (and more likely to be statistically significant) than if black is defined as having either a black mother or father. That fact that the results seem to be different depending upon whether race is coded as race of the mother or race of the child is suggestive that what happens at home, and in particular the ability of parents to invest in their child's human capital, may depend on the race of the child's mother.

In this paper we examine how outcomes differ depending upon one's own race as well as the race of one's mother.[4] The presence of a number of mixed-race individuals in the National Longitudinal Study of Adolescent Health (Add Health) allows us to identify the extent to which the effect of "race" is driven by one's own race versus maternal race. In particular, the data provide a sufficient number of students with black fathers and white mothers to disentangle these effects.[5]

While the descriptive statistics suggest that those who label themselves as black but have white mothers come from similar socioeconomic backgrounds to blacks with black mothers, their academic and labor market outcomes are very different. With regard to academics, the test score gap is almost non-existent between blacks with white mothers and whites, and there is no difference in math grades between these two groups as well. Labor market

Liu, Mroz and va der Klaauw (2010) .

[4]Throughout we refer to Hispanic as a "race" although it is an ethnicity, simply for the sake of brevity in referring the mixed-ancestry, mixed-race, and mixed-ethnicity families. We outline the classification scheme we adopt below.

[5]Marriages between black men and white women are significantly more likely than marriages between white men and black women. See Fryer (2007) for a review.

outcomes show similar patterns. Namely, the effect of own race on both wages and labor force participation is estimated to be zero once controls for mother's race are included. These results survive numerous robustness checks, including using interview reports of the student's race as well as skin tone of the student: differences in outcomes across races and skin tones disappear once we account for race of the mother.

Others have also examined outcomes for mixed-race individuals. Both Fryer, Kahn, Levitt and Spenkuch (2008) and Harris and Thomas (2002) examine outcomes for those who label themselves mixed race and hence the focus is not on distinguishing between whether race of the mother or race of the child are driving differential outcomes between blacks and whites. Fryer, Kahn, Levitt and Spenkuch (2008) find that mixed-race blacks are significantly more likely to engage in drug use than either those who label themselves as only black or only white, and present a Roy model justifying this behavior. Hence, our results here that maternal race is much more important than own race in explaining human capital comes in spite of drug use likely working as a deterrent towards human capital attainment. One study that does use reporting by the mother is Ruebeck, Averett and Bodenhorn (2009). Their study, however, focuses on behaviors and attitudes, not measures of learning.

Given the link between maternal race and outcomes from the Add Health, we next turn to the National Longitudinal Survey of Youth 1979 (NLSY79) Child Supplement, which links more detailed information on parental behaviors and the home environment with child outcomes.[6] Although we cannot use the mother-child race distinction with this data due to the small number of off-diagonal race observations, our first insight tells us that controlling for own race is not informative if we control for maternal race.

The data reveal large differences across the home environments between white and black mothers. While black mothers who are college graduates have higher permanent incomes and come from more educated families than white mothers who are high school graduates,[7]

[6]This dataset has been used by many researchers to examine the sources of the black-white test score gap. See, for example, Phillips, Brooks-Gunn, Duncan, Klebanov and Crane (1998), Todd and Wolpin (2007), Carneiro, Heckman and Masterov (2005), Heckman (2011) (web appendix) and Moon (2010).

[7]By high school graduate, we mean someone whose highest level of education was twelve years.

the home environment for their children is, on many dimensions, worse.[8] These differences in home environments often translate into lower test scores for children with black, college-graduate mothers than for children with white, high school-graduate mothers. These differences in early childhood experiences explain a substantial portion of the racial gaps in test scores for both younger (ages 4-6) and older (ages 9-11) children.[9] Taken as a whole, our results suggest that the race of the mother better captures the racial gaps that researchers have documented in cognitive development, education, and the workplace. With race of the mother associated with differential investments (or ability to invest) in children, as advocated in Heckman (2011), early interventions are likely to have the largest impact on the black/white skill gap.

The rest of the paper proceeds as follows. In section 2, we describe the Add Health data and the demographic characteristics of households with children and mothers of different race combinations. We examine differences in educational outcomes as a function of own-race and maternal race in section 3. Section 4 performs a similar analysis of labor market outcomes. Section 5 conducts a series of robustness checks to confirm that maternal race is indeed a much larger driving factor behind cross-racial differences in outcomes than own-race. An analysis of differences in home environments between black and white households and how these differences translate into the black-white test score gap is conducted in section 6. Section 7 concludes.

[8]Fryer (2010) notes that children whose mothers are white high school graduates have as many books as children whose mothers are black college graduates. Both the NLSY Home scores and Emotional subscores are lower for children of black college graduates than white high school graduates. See section 6 for a description of these measures.

[9]Todd and Wolpin (2007) also show the history of lagged inputs into cognitive development explain a sizable portion of the black-white test-score gap.

2 Add Health Data

We use data from Waves I, III and IV of the National Longitudinal Survey of Adolescent Health (or Add Health).[10] The data is nationally representative at the school level and sampled seventh to twelfth grade students within a randomly sampled set of 80 communities across the United States.[11] The data also includes a sample of students who were administered a more detailed survey, the in-home sample, and whose parents were also administered a parent survey. These in-home interviews provide all the information we use outside of school characteristics at Wave I, including a short picture vocabulary test the Add Health Picture Vocabulary Test (AHPVT).[12] Wave III includes transcript data and weighting for non-release of transcripts, along with current education and labor market participation and wages. Wave IV provides the information for completed education and labor market activity. Add Health contains various non-representative over-samples, including blacks, so throughout we use cross-sectional probability weights provided in the data to correct for the non-random sample design.

2.1 Definition of Race

The question design in the Add Health survey allows us some leeway in how we define our race variables. To identify separately the effect of own race and maternal race, we need to observe a sizable number of students for whom own race and maternal race are not the same. We use a classification system that splits an individual's survey response into four distinct groups as follows: if the respondent indicates that he is of Hispanic or Latino origin, then we classify him as Hispanic. If he marks that his race is black/African American but does not mark Hispanic, then we classify him as black. If he marks white but not Hispanic or

[10] The survey of adolescents in the United States was organized through the Carolina Population Center and data were collected in four waves, in 1994-95, 1995-96, 2001-02 and 2008.

[11] A school pair, consisting of a high school and a randomly selected feeder school (middle school or junior high school from the same district) were taken from each community.

[12] AHPVT is an abbreviated version of the Peabody Picture Vocabulary Test; a non-written test consisting of identifying pictures with verbal responses. It is designed to measure verbal scholastic aptitude.

black, then we classify him as white. If he marks a race category that does not fall into any of the above groups, then his race is other. For students, we define race from the Wave I In Home Questionnaire, when the key outcomes at Wave I were measured. For mothers, we take responses from the Parent Questionnaire (also administered at the time of Wave I) when the surveyed parent is female and from the race of the surveyed parent's spouse when the parental respondent is not female. Table 1 shows a cross tabulation of student and maternal race.

There is little consensus on how to identify mixed-race individuals in survey data. Our approach is similar to that of Kao (1999) and Xie and Goyette (1997) in that we exploit the separate reporting of at least one parent's race. Fryer, Kahn, Levitt and Spenkuch (2008) and Harris and Thomas (2002) use the fact that Add Health allows respondents to choose more than one race in the questionnaires. Since our focus is on maternal race, we do not adopt this classification system, although results for regressions presented below are robust to different classification systems.[13] Ultimately we also exploit the interviewer-reported perception of the child and maternal race to verify that our results are not driven by the particular classification scheme we adopt.

2.2 Descriptive Statistics

There are some striking differences in family characteristics across same and mixed-race race families. Table 2 shows how mother's characteristics vary by race of the mother and the child for the Wave I in-home sample. For the table, we focus on mixed-race families with a white child and either a black or Hispanic mother to maintain reasonable sample sizes. We star (*) differences from the white mean which are significant at the 5% level, and † denotes differences from the own-group mean for mixed race individuals (blacks and Hispanics). Note

[13]A key issue is that different classification systems yield different numbers of individuals at the various waves in the data. For instance Fryer, Kahn, Levitt and Spenkuch (2008) use a strict definition based on child reporting, which yields around 300 individuals in the Add Health in school sample. However our outcomes of interest do not come from the in-school survey, but in the smaller in-home sample. Applying this strict definition in the home sample results in many fewer observations. For this reason we do not require double correct reporting for a child race to be identified as mixed race.

the income similarities among all those students self-reporting as black, and their differences from white student family income. Indeed, on most characteristics save maternal education, blacks from mixed-race families see characteristics similar to blacks from black families, both of which are significantly different from whites. For mixed Hispanic-white students, we observe a similar pattern in mother's college attendance to that of mixed-race blacks. Their mothers are much more likely to have gone to college compared to Hispanic students (30% versus 18%), but white students are still more likely to have a college-educated mother than both of these groups. Otherwise, the household characteristics for mixed Hispanic-white students fall more solidly between whites and Hispanics.

Table 3 summarizes average differences in outcomes by the same racial groups, where again we star (*) differences from the white mean and † differences from the own-group mean for mixed-race individuals. For a measure of intelligence (the Add Health Picture Vocabulary Test), transcript grades, college completion, and wages the mixed-race black outcomes are statistically different from blacks with black mothers, but not significantly different from whites. This finding occurs despite the increased likelihood that a black student with a white mother comes from a disadvantaged household.[14] Hispanics with white mother's see a similar pattern but only for the AHPVT and Math GPA. The table also contains striking differences in the wages among those employed full-time and differences in college completion across the same family groupings. Hispanics and blacks with white mother's are significantly more likely to have completed college (though the test of significance for Hispanics is just outside the 5% level).

We document the patterns of attrition across waves in Table 19 in the appendix.[15] We also include some of the family background controls from Table 2. While incomes are slightly higher and welfare rates lower for mixed-race families in Wave III and IV, the overall patterns

[14]These results for income, test score, and GPA differences are similar to means comparisons using the same data by Harris and Thomas (2002) and Kao (1999).

[15]Entering the sample in the appendix required valid own and mother race reporting. Throughout other missing variables are treated with missing indicators. Means are weighted since the Add Health sample design includes over samples of various minorities.

are similar to Table 2. The racial distribution is also fairly stable across waves. One group relevant for us is the number of black respondents whose mother's report being white, who comprise 5.9% of blacks in Wave I, 5.1% of blacks in Wave III, and 5.8% of blacks in Wave IV. Given the small sample of mixed race blacks we pool Waves III and IV when examining labor market outcomes.

3 Pre-Market Outcomes

Given the differences in means presented above, we examine the relationship between picture vocabulary test scores, high school GPA across different subjects and completed education with a large set of controls. We sequentially add controls beginning with own race and few baseline demographics, and adding more characteristics of the mother. Further, one of the advantages of the Add Health data set is that its school-based design makes it possible to control for school fixed effects.

3.1 Picture Vocabulary Test Scores

We first consider PVT scores. Denote Y_i as the individual i's PVT score. Our full specification takes the following form:

$$Y_i = \alpha_0 + \sum_r \alpha_{1r} I(Race_i = r) + \sum_r \alpha_{2r} I(MomRace_i = r) + \alpha_3 X_{i1} + \alpha_4 X_{i2} + \sum_j \alpha_{5j} I(School_i = j) + \varepsilon_i \tag{1}$$

where r indicates race and j denotes school, X_{i1} denotes controls for gender and age and X_{i2} denotes controls for characteristics of the mother. We then estimate the parameters by ordinary least squares. The PVT scores in the Add Health data are normed to mean 100, standard deviation 15.

Results are presented in Table 4. In column (i), we include only controls for race, gender,

and age, finding significant differences across races. In column (ii), similar to the descriptive statistics, maternal race is a much stronger correlate of the test score gap than own race. The explanatory power of maternal race in contrast to own race for both blacks and Hispanics is striking. For all specifications, the parameter estimate on own race black or Hispanic is less than half the estimate of the coefficient on maternal race black or Hispanic. Adding controls for characteristics of the mother in column (iii) shows that own race black or Hispanic is not significantly different or only marginally significantly different from zero, yet having a black or Hispanic mother relative to a white mother decreases the student's score by about six points.[16] There is evidence that those with black or Hispanic mothers attend worse schools as the coefficients on black mother and Hispanic mother fall by 3 and 0.7 points respectively when school fixed effects are included. But column (iv) shows that adding school fixed effects still results in maternal race being significantly more important than own race. Note that Hispanic own race coefficient falls to around one point, or 1/15 of a standard deviation, and is no longer statistically significant. We take these results as evidence that the channel through which race affects outcomes—beyond that due to schools— is in fact due to maternal race as opposed to own race.

3.2 Grade Point Average

We now turn to grades. We take the entire transcript history and construct a panel data set for individuals for each year of their high school career. Add Health gives grades at three levels: math, science, and overall. Within the math and science classes, the level of course is also given (e.g. algebra, chemistry, etc.), which allows us to control for course fixed effects. This is important as there is likely to be much selection into courses. Letting k indicate the level of the course and t the year in school (e.g. 10th grade), we separately estimate

[16]The additional controls include family income, welfare, single parent, mother's age and education, as well as whether the individual was living with their biological mother.

specifications for math, science and overall GPA as follows:

$$G_{ikt} = \beta_{0kt} + \sum_r \beta_{1r} I(Race_i = r) + \sum_r \beta_{2r} I(MomRace_i = r) + \beta_3 X_{i1t} + \beta_4 X_{i2} + \sum_j \beta_{5j} I(School_i = j) + \varepsilon_{ikt} \quad (2)$$

where G_{ikt} indicates the grade individual i received in course k at time t, X_{i1t} includes the individual's year in school, and β_{0kt} are course-year specific fixed effects. We then estimate the parameters by ordinary least squares.

We focus on grades in math classes as what algebra means at one school is likely to be more similar to algebra at another school and hence the selection issues are likely to be similar across algebra courses. Results for overall grades and science grades are given in the appendix. Results for math grades are given in Table 5. For blacks, the results mirror those for PVT scores. Namely, the coefficient on own race black becomes small and insignificant with the inclusion of race of the mother while the coefficient on mother race black is large and negative. Depending on whether school fixed effects are used, having a black mother is associated with a 0.3 to 0.2 drop in math grades.

The results for Hispanics are less clear. Controlling for own race, maternal race, and school fixed effects leads to negative coefficients on Hispanic and mother Hispanic but neither coefficient is significant and the magnitudes are significantly smaller than those for blacks. As shown in the appendix, examining overall grades and science grades also leads to negative coefficients on mother black or mother Hispanic as well as black or Hispanic but the results are generally insignificant with the inclusion of school fixed effects.[17]

3.3 Educational Attainment

We next investigate educational attainment. We treat educational attainment consistent with an ordered probit representation. Namely, 'latent' educational attainment is given by

[17]The one exception is the coefficient on own race black for Science grades.

S_i^* and follows:

$$S_i^* = \delta_0 + \sum_r \delta_{1r} I(Race_i = r) + \sum_r \delta_{2r} I(MomRace_i = r) + \delta_3 X_{i1} + \delta_4 X_{i2} + \sum_j \delta_{5j} I(School_i = j) + \varepsilon_i \tag{3}$$

with S_i giving the observed educational attainment at Wave IV.

Table 6 gives ordered probit estimates of the effect of race on educational attainment for men.[18] The patterns of the coefficients on own race and maternal race point towards negative effects of having a mom who is black or Hispanic with no effect of own race. However, none of the results with school fixed effects are significant.

4 Labor Market Outcomes

Here we repeat the analysis from Section 3 but now focus on labor market outcomes. In particular, we examine wages and employment using a pooled cross section from Waves III and IV. We estimate log-wage regressions and multinomial logits on no-work, part and full-time work. A difference from the results above is that we include lagged measures of achievement/ability, cumulative GPA, PVT scores and completed education in the labor market regressions.

4.1 Wages

Denoting W_{it} as the log wage of i at time t, we specify log wages as follows:

$$W_{it} = \gamma_0 + \sum_r \gamma_{1r} I(Race_i = r) + \sum_r \gamma_{2r} I(MomRace_i = r) + \gamma_3 X_{i1t} + \gamma_4 X_{i2} + \sum_j \gamma_{5j} I(School_i = j) + \varepsilon_{it} \tag{4}$$

[18] The results for women do not display the same pattern as for men. We suspect that simultaneous fertility decisions complicate the picture.

The time-varying components of X_{i1t} come through the pooling of the Wave III and IV data and include age at the different waves as well as a Wave IV indicator. Only those who who had positive earnings in the prior calendar year and working at least 30 hours a week at the most recent job were included.

Results are given in Table 7. Column (i) shows own race black is associated with 20% lower wages than own race white. Column (ii) adds race of the mother and results in the negative effects of own race from column (i) shifting completely to the coefficient on mother black. For Hispanics, including maternal race flips the own race coefficient again, but is not statistically significant. Adding additional controls for Hispanics results in negative coefficients on mother Hispanic and positive coefficients on own ethnicity Hispanic but in no case are the coefficients significantly different from zero.

Columns (iii) - (vi) sequentially add controls, and the coefficient on black mother shrinks slightly. The largest decrease comes from including measures of school achievement and the verbal test score in adolescence, which are also functions of maternal race. Including school indicators actually increases the gap for blacks from black families, while decreasing the gap for blacks form mixed race families. The school indicators may be picking up other unobserved neighborhood characteristics like the local labor market. For blacks, only when we condition on the PVT and GPA does the black mother coefficient slip below the 5% significance level with the significance coming back with the inclusion of school fixed effects.[19] In column (vii) we remove maternal race be keep the full set of controls. The literature on the black wage-gap generally finds estimates on the order -10%, whereas for respondents with black mother's our results show nearly double that impact in column (vi) at -20%.[20] When we remove maternal race in column (vii) the own-race black coefficient shrinks to -13%, which is consistent with prior literature. This suggests that there is significant heterogeneity in the black wage-gap, one dimension of which is difference between blacks with and without

[19]The Add Health PVT was administered at Wave I and adjusted for the age of the respondent.

[20]Fadlon (2010) finds a wage gap of -12% for the NLSY97, which has a similar age distribution to our sample here. See Lang and Lehmann (2010) for a review of how these wage-gaps fit with the literature on discrimination.

black mothers.

4.2 Labor Supply

The wage regressions focused exclusively on full-time workers. Here we examine whether maternal race influences employment status as well. In particular, we specify three levels of labor supply: working full time, working part time, and not working. We specify the utility for the kth level of labor supply as following:

$$\begin{aligned} V_{ikt} &= \theta_{0k} + \sum_r \theta_{1rk} I(Race_i = r) + \sum_r \theta_{2k} I(MomRace_i = r) + \theta_{3k} X_{i1t} + \theta_{4k} X_{i2} + \eta_{ikt} \\ &= U_{ikt} + \eta_{ikt} \end{aligned} \tag{5}$$

With η_{ikt} following a Type I extreme value distribution, multinomial logit probabilities result, where the probability of i choosing labor supply level k at time t given by:

$$Pr_i(kt) = \frac{\exp(U_{ikt})}{\sum_{k'} \exp(U_{ik't})} \tag{6}$$

The estimated coefficients are given in Table 8. Column (i) shows the effect of own race on the probability of working part time and full time relative to being at home. We again document negative and significant employment for blacks and Hispanics relative to whites. Moving to Column (ii) the inclusion of maternal race shrinks the own race coefficients for part time work, and it also reduces the coefficients in the full-time work equation, for blacks and Hispanics. Controlling for the full set of observables, except school fixed effects, maternal race effects remain significant for blacks: for part time work at the 5% level, for full time work at the the 10% level.[21] Overall, it appears maternal race also explains some portion of the black-white employment gap observed in the data.

[21] School fixed effects models produced qualitatively similar results, but the MLE estimator is unstable and subject to non-convergence in these models.

5 Robustness Checks

5.1 Robustness to Definition of Race

Given that mixed race families are identified from self-reported race, the potential endogeneity of these self-reports may be a concern. The Add Health data contain interviewer reports on the likely race of the respondent for both students and parents. Classification by interviewers included white, black/African American, or another race. This classification misses Hispanics who could be assigned to any of the three groups. Nonetheless, with this information we can assess how well our findings with respect to blacks hold up under a more arguably exogenous classification scheme, where we condition on agreement between the interviewer and adolescent self-report for black, white and other. This strategy removes almost all students who self identify as Hispanics.[22]

In Table 9, we report results for the black coefficients using self-reported maternal race and interviewer reported child race. For wages, education, and PVT scores we see the same patterns as before. Namely, large negative coefficients for blacks from black families that dwarf own race effects. For grades, the patterns are not as strong as in Table 5, but the point estimates still show a stronger effect of mother race than own race. We interpret these results as evidence that the patterns observed above are not simply a product of self-identification patterns among mixed-race families, but represent real differences in outcomes in our sample.

5.2 Robustness to Skin Color

A possible explanation for our results on the black-white wage gap could be skin color. The difference between own and maternal race coefficients in Table 7 are identified from mixed-race families. One potential channel for these effects is that there is less discrimination

[22]Results using agreement between maternal race and interviewer reported maternal race were very similar to the self-reported race results presented above for GPA and AHPVT. For the outcomes measured at Wave IV, education and wages, the sample of mixed race blacks whose parent and own-race reports agreed with the interviewer reports was too small to be informative.

against children from mixed-race families, perhaps because they more frequently have a lighter skin tone.[23] The Add Health data had the interviewer describe the respondent's skin color in Wave III as "Black, Dark brown, Medium Brown, Light brown or White." A cross tab of skin-tone and maternal race is given in Table 22, which shows that the lighter skinned categories contain a significant number of Asians and Hispanics. In Table 10 we replace self-identified race with interviewer reported skin color, and sequentially add controls as before, beginning with maternal race. In column (i) we can see substantial heterogeneity in wage-gaps for darker skinned individuals:[24] those with dark brown or black skin colors are essentially the source of the entire black-white wage-gap. As we add maternal race the size and significance of these gaps diminish.[25] Additional controls shrink the skin-color wage gaps until they are essentially zero; the wage-gap for those with black mother's is still large and significant. Finally, column (vii) shows that removing maternal race yields results similar to the prior literature, though now the wage gap is concentrated entirely among those with darker skin tones.

5.3 Robustness to Other Observables

Add Health contains many other variables that might explain the outcome-gaps between mixed-race families and same-race families. We investigate whether maternal and own-race coefficients move in response to characteristics of the child's birth, other mother characteristics and behaviors, and how the parent and child interact regarding homework and behavioral problems. Table 11 sequentially adds controls for these other observables and tests how the AHPVT gap changes in response. In column (iv) we add time use information to the prior results. We include how often the residential mother is home before and after school and at bed time, along with the hours working for pay, these have a small impact on maternal race

[23] Rangel (2007) examines this question in Brazil and finds differential investment among children within the same family but with different skin colors.

[24] The current specification does not include respondent race because the groups identifying a number of coefficients are too small to be informative.

[25] Groups like dark skinned individuals with Hispanic mother's or with non-biological mother's allow us to separately identify black mom from dark skinned.

coefficients. In column (v) we add birth weight and breastfeeding information which causes the largest drop in the maternal race coefficient. Contemporaneous measures of parenting during adolescence, whether the residential mother and/or father discussed grades, school work, or discipline show very little impact, once we've conditioned on a large set of covariates. Finally, in column (vii), adding school fixed effects returns us to estimates very similar to those in the final column of Table 4. Overall, the gaps in AHPVT and other outcomes are insensitive to including other controls in Add Health.[26] The Add Health gaps are measured between 12-18 years of age, with an average age of 16. It seems clear, as Heckman (2011) points out, that these high school test score gaps are a function of parental choices and resource constraints earlier in the life-cycle, and so we turn to the NLSY79, which allows greater insight into early life choices that differ across maternal race.

6 Early Life Test Scores

Given the large outcome differences among self-identified blacks with white and black mothers, a natural question is "What factors in the family or neighborhood environment are varying systematically with race?" Unfortunately the Add Health data are of limited use here since they only capture a cross-section of parental characteristics and behaviors when children are between the ages of 12-18. We instead turn to the Children of the NLSY79 (CNLSY79), which contains repeated test scores of achievement (math and reading), and picture vocabulary (similar to the AHPVT in Add Health). Most importantly the CNLSY79 contains detailed questions and interviewer assessments of the home environment, which surrounded children at an early age. In exchange for this rich set of descriptives, we lose the interesting subsamples which allow identification of own versus maternal race. These are very small in the CNLSY79 relative to Add Health (e.g. 24 black children with white mothers in the CNLSY79, with 144 in Add Health). Essentially, in the CNLSY79 we lose child-race

[26]Following the discussion in Fryer and Levitt (2004), we experimented with many school quality measures, none of which had significant impacts on the coefficients for most outcomes. This results is consistent with Fryer and Levitt (2006).

reporting and are forced to look only at mean differences across the self-identified maternal race categories, which the Add Health results do point toward as being of greater significance for outcomes. Ultimately, we use the CNLSY79 to understand what maternal race is proxying for in these outcome equations.[27]

6.1 Differences in Resources, Parenting Practices, and Outcomes Across Races

We first present descriptive evidence on how resources and outcomes vary with race of the mother. Table 12 presents means by maternal race for mothers in the CNLSY79, including self-identified Hispanic mothers. Stars denote significant differences between minority and white means. We draw all the children from the CNLSY79 and compute means of maternal characteristics, parenting practices, and early life behaviors. The only prerequisites for entering Table 12 are valid HOME scores and sub-scores, which will figure prominently below.[28] HOME scores are generated from a series of self-reported and interview assessed questions regarding the home environment. Questions such as "How frequently did you read to your child when they were aged 0 to 2?" were asked. Home scores can be divided into emotional and cognitive sub-scores, which vary systematically with race.[29] Cognitive sub-scores at ages 4-5 capture information on the stimulation, safety, organization, and interaction in the home environment. Emotional sub-scores capture information on physical violence, punishment, television, and the intimacy and warmth of interactions between mother and child.

The first three columns compare means across all individuals, the final two columns compare black college graduates to whites with no college. Moving down the first three columns, blacks and Hispanics show lower education, income, AFQT scores and parental

[27]As noted above, the fact that mixed race students look similar to whites on many outcomes suggests that race itself, i.e. genes, are not driving the observed racial differences. See Fryer and Levitt (2006) for more formal evidence that genes are not the cause of racial outcome gaps.

[28]Results of these means are very similar regardless of whether we condition on valid scores or not.

[29]The entire listing of how these indices are constructed can be found at: http://www.nlsinfo.org/childya/nlsdocs/guide/ChildYA2006UsersGuide.pdf, page 213.

education. As can be seen in the second panel, HOME scores for blacks are substantially below whites, and Hispanics fall between the two. Indeed, for nearly all outcomes in the table, blacks and Hispanics showed lower means than whites. For instance in the final panel of the table, the first three columns show an enormous difference in the fraction of white mothers who read to a 3- to 5-year-old child every day.

A candidate explanation is that these means vary systematically with race because race is generally correlated with having a lower socioeconomic status (SES). We show in the right-hand side of Table 12 that when comparing a low SES white group to a higher SES black group, most outcomes look very similar. Conditional on blacks having more education, they benefit from higher incomes and come from more educated families, although we cannot reject that AFQT is the same. HOME scores, and especially the emotional sub-score are still significantly lower for this group of black mothers. Beliefs about parents always teaching still persist in these samples, but on almost every other outcome we cannot reject that blacks with college degrees and whites with no college have the same behaviors. These results suggest that while parenting practices are correlated with education and SES substantial differences across races remain.

With significant differences in SES and home environments across races, it is unsurprising that the raw data will also show differences in test scores. These differences are presented in Table 13. Here we see that children of both black and Hispanic mothers have significantly lower test scores at all ages. The last two columns compare children of white mothers with a high school education to children of black mothers with at least a college education. With the exception of reading scores, children of less educated whites actually score higher than children of more educated blacks, despite the children of black mothers having more resources in terms of income, and education of parents and grandparents.

6.2 Resources, Race, and the Achievement Gap

Given differences in resources and parenting behaviors across races, we show that the extent that these observables can aid in explaining the black-white achievement gap at early ages. Fryer and Levitt (2004) showed that early life (Kindergarten) test score gaps can be explained with measures of family background (mainly parental eduction, occupation, and income) using the Early Childhood Longitudinal Study (ECLS). They also document that Math and Reading test score gaps return by third grade. We show in Table 14, that controlling for what we term "early life controls" (ELCs), the test-score gaps in CNLSY79 do not return. Early life controls include the HOME scores and sub-scores and include the set of indicators outlined in Table 12, along with other early life observables listed in the footnote to Table 14. The analysis which follows is similar to Phillips, Brooks-Gunn, Duncan, Klebanov and Crane (1998), but we expand the variables, tests scores, and cohorts used in their earlier work. The key difference is that, similar to Todd and Wolpin (2007), we use early life covariates to to explain later childhood test scores.[30]

We estimate a model for childhood achievement by age, using a lagged-input model given by the following

$$A_{ias} = \kappa_{1as} + \sum_r \kappa_{2as}^r I(MomRace_i = r) + \kappa_{3as} X_{i1a} + \kappa_{4as} X_{i2} + \kappa_{5s} X_{i3,a=5} + \nu_{ias} \qquad (7)$$

where A_{ias} is achievement by individual i at age a in subject s (Math, PPVT or Reading). The only time-varying covariates (X_{i1t}) are the child age, the survey year and maternal marital status at time of survey. The other controls include the mother's endowment and baseline controls: (X_{i3}) and the ELCs ($X_{i3,a=5}$). We only estimate (7) around age 5 and age 10, since the PPVT is administered then.[31]

[30] See Cunha, Heckman, Lochner and Masterov (2006) on the importance of accounting for early life measures of investment.

[31] Similar results for math and reading were obtained for other ages, though beyond age 10 selection becomes more of an issue. In Table 15 we show selection into having both scores is not driving results here. Including contemporaneous ELCs had no effect on the results.

The top panel of Table 14 shows the racial test score-gaps from an OLS regression at ages 4-5 and 10-11 of the Peabody Picture Vocabulary Test administered by the NLSY79. We only include individuals for whom we have valid ages 4-5 and 10-11 test scores, and age 4-5 home scores and sub-scores. The first two columns contain only child age, gender and survey year dummies as regressors. The PPVT test score gap for blacks and Hispanics is decreasing over time.[32] The third and fourth columns add what we term the "mother's endowment": AFQT, completed education, permanent income, and maternal grandparent education, mother's age at birth, married at the time of survey, and indicators for maternity leave in years, including an indicator for no work one year prior to birth.[33] Controlling for these variables reduces the PPVT test score gap by one-third for blacks and one-half for Hispanics at ages 4-5.[34] Changes in PPVT-gaps between ages 4-5 and 10-11 are basically unaffected. Finally, columns five and six add the early life controls in Table 12. The test score gap shrinks by an additional fifty percent. Note that when controls for the home environment are included the coefficients on mother's education and income drop dramatically, and are not significant at standard levels, as we add ELCs; implying that these covariates are strongly correlated with race, education and income.

The lower panel of Table 14 shows the same results for math test scores at ages 5-6 and 9-10.[35] The first two columns show the increase in the test score gap which Fryer and Levitt (2004) note. For blacks, as we add the mother's endowment the rise goes from 10 points to around 4, and adding ELCs the rise falls to 2 points, and is not significantly different form zero. For Hispanics the math test score gap does not widen over time, but we can explain

[32]The different age-profile for this test vs. the math and reading tests examined here and in Fryer and Levitt (2004) suggest that PPVT test may simply be measuring a language barrier. This could be another difference between black and white mothers we are unable to measure.

[33]Permanent income is a scaled individual fixed effect from a life-cycle wage regression using all the NLSY79 survey years.

[34]Across all specifications mother's age at birth, married and maternity leave have no impact on the racial test score gap once we condition on income, AFQT, own and grandparent education. They are included simply as controls.

[35]PPVT scores were mostly gathered at ages 4-5 and 10-11. Math and Reading tests were administered every two years beginning at age 5. At later testing ages, early births are disproportionately represented so we focus on age ten rather than twelve.

essentially the entire gap with the mother's endowment and the ELCs. We also see drops in the education and income coefficients, though not as substantial as the changes for the PPVT regressions. In the appendix we present the same results for reading scores, with very similar patterns.[36]

A concern with these results may be that conditioning on two valid test scores and the age 4-5 HOME scores may be selecting the sample toward later births among the women of the NLSY79. The children were only interviewed beginning in 1986, so a child above the age of 5 in 1986 had missing HOME and test scores. We fill in missing values of HOME scores and sub-scores with the maternal-race specific mean, and include an indicator for any ELCs missing interacted with maternal race. The results from these specifications are presented in Table 15, where we include the final column of results from Tables 14 for comparison. The only substantial difference is the number of observations, suggesting that if we could observe HOME and test scores for the early birth cohorts results would look very similar.

6.3 Comparing Outcomes for Children of More Educated Blacks with Less Educated Whites

One could argue that the results in the previous section point towards resources being the driver behind differences in test scores across races. Here we return to the sample of less educated whites (HS diploma) and more educated blacks (a college degree or more), repeating the estimation in Table 14 on this sample. As the descriptive statistics show, the educated black sample has more resources in terms of income and education than the white high school sample. The first two columns of Table 16 show no observed gap in math and a gap in PPVT at age 5 which is much smaller by age 11. Now we add the set of observables we term the mother's endowment: her AFQT, log-permanent income, and her parent's education. The math test-score gaps both rise by 0.20 of a standard deviation, the PPVT gaps rise by around

[36]Conditional on all the observables, black reading scores are actually higher than whites, a result also shown in Fryer and Levitt (2004).

0.30 of a standard deviation. This change suggests there would be a test score gap but for the presence of the better endowment among the higher educated black families. Adding the ELCs and the gaps for math and the PPVT shrink, but both are still larger than the raw gaps. This pattern of results suggests that the home environment provided by these two groups of mothers are dramatically different, and impact test scores. The endowment for higher educated blacks is making up for a worse home environment.

In light of these results, we return in the Add Health data to see if children of highly educated black mothers perform worse than children with white mothers who have a high school degree but no further education. Table 7 shows descriptive statistics for the two groups. While black mothers with at least a four-year degree have higher incomes and are less likely to be on welfare than white mothers with a high school degree, the means are not statistically significant. Highly educated blacks are, however, more likely to be single parents and more likely to be older. Children of highly educated mothers have lower PVT scores and lower grades in all subjects that children of white mothers with a high school degree.

Table 18 regresses both PVT scores and math grades on mother's characteristics and school fixed effects. Without school fixed effects, children of highly educated black mothers have significantly lower PVT scores and math grades than children of white mothers with high school degrees. Part of the explanation is schools. The coefficient falls on black mother for both PVT scores and math grades once school fixed effects are included, though the effects on PVT scores are still strong and significant. Highly educated black mothers in the Add Health send their children to worse schools than white mothers with a high school degree.

7 Conclusion

The legacy of slavery has limited the ability of blacks to achieve outcomes similar to whites both through discrimination and through gaps in resources. However, eliminating discrimina-

tion and equalizing financial resources will not eliminate differences in black-white outcomes. This paper helps establish an increasingly important area where black families trail whites: differences in the home environment. These differences are crucial for explaining the gap in education and labor market outcomes between blacks and whites.

From the Add Health data, black children with white mothers were shown to perform similarly to white children with white mothers on tests, in the classroom, and in the labor market.[37] Indeed, we find no wage gap between blacks with white mothers and whites. Similar results hold for Hispanics, though the results are weaker. These results suggest that, in addition to differences in monetary resources, differences in home environment are a driving force behind disparities in black-white outcomes. However, sample sizes are small and more research is needed on how race of the mother affects the long term outcomes of their children.

Data from the children of the NLSY show that differences in the home environment can explain a substantial portion of the racial differences in test scores at young ages. White mothers with a high school education have children who score better on tests than children of black mothers with at least a college education. This performance gap occurs despite black mothers with at least a college education having higher permanent income and having parents with higher education.

Perhaps a reason why school resources seem to be more effective for black students than white students is driven by differences in the home environment. When the school environment is relatively poor, white mothers are able to substitute parental resources to their children to overcome the environment in a way that black mothers are not. Understanding differences in the home environment across races is of substantial importance in understanding inequalities later in life.

[37]The similarities in performance are particularly striking in light of Fryer, Kahn, Levitt and Spenkuch (2008) which shows mixed race blacks are more likely to engage in drug use than those who label themselves white or black.

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Tables

Table 1: Cross Tabulation of Student Race and Maternal Race[a]

	Maternal Race					
Race	White	Black	Hispanic	Other	Missing	Total
White	8844	15	86	94	1849	1088
Black	144	3348	37	60	1080	4669
Hispanic	355	41	2253	61	815	3525
Other	86	6	21	799	538	1450
Missing	52	20	22	59	87	240
Total	9481	3430	2419	1073	4369	20772

[a]Both races are self-reported in separate survey instruments.

Table 2: Mean Mother's Characteristics[a]

	Group					
	White Students	Black with white mom	Black with black mom	Hispanic with white mom	Hispanic with Hispanic mom	All
Income ($1000)	50.3	33.0*	30.0*	48.5†	29.5*	45.2*
	(1.9)	(4.5)	(2.2)	(5.4)	(1.4)	(1.7)
	[8016]	[120]	[2488]	[285]	[1708]	[14019]
On welfare	0.064	0.211	0.194*	0.112†	0.179*	0.097*
	(0.008)	(0.093)	(0.016)	(0.031)	(0.021)	(0.009)
	[8918]	[131]	[2912]	[318]	[2066]	[16003]
Single parent	0.220	0.621*	0.558*	0.255	0.284*	0.282*
	(0.009)	(0.052)	(0.020)	(0.033)	(0.029)	(0.012)
	[8940]	[132]	[2918]	[319]	[2074]	[16057]
Mother's age	41.3	39.6	41.4	40.7	40.6*	41.3
	(0.2)	(1.2)	(0.4)	(0.5)	(0.3)	(0.2)
	[8061]	[123]	[2835]	[312]	[2012]	[14429]
Mother some college	0.415	0.474†	0.347	0.304*†	0.182*	0.384
	(0.020)	(0.089)	(0.036)	(0.049)	(0.019)	(0.017)
	[9077]	[117]	[2681]	[291]	[1862]	[16865]
Biological Mother	0.774	0.881*	0.867*	0.839*†	0.941*	0.741*
	(0.008)	(0.039)	(0.010)	(0.0316)	(0.006)	(0.009)
	[10029]	[132]	[2933]	[319]	[2080]	[18924]

[a]Standard errors for means in parentheses, sample sizes in brackets. * denotes significantly different from the white-student mean at the 5% level. † denotes significantly different from the own-minority group mean (black or Hispanic) at the 5% level. Means all measured in Parent Survey at Wave I.

Table 3: Mean Outcomes[a]

	Group					
Wave I	White Students	Black with white mom	Black with black mom	Hispanic with white mom	Hispanic with Hispanic mom	All
AHPVT score	104.6	101.6†	91.9*	102.1†	90.5*	100.7*
	(0.5)	(2.9)	(1.1)	(1.7)	(1.1)	(0.7)
	[9590]	[127]	[2794]	[306]	[1995]	[18001]
Wave III						
Cumulative GPA	2.68	2.50†	2.13*	2.45*	2.31*	2.55
	(0.03)	(0.14)	(0.07)	(0.10)	(0.05)	(0.03)
	[6806]	[78]	[1795]	[200]	[1208]	[12140]
Math GPA	2.31	2.12†	1.77*	2.14†	1.90*	2.18
	(0.03)	(0.15)	(0.07)	(0.11)	(0.04)	(0.03)
	[6781]	[78]	[1783]	[199]	[1199]	[12086]
Science GPA	2.40	2.15†	1.86*	2.16*	2.01*	2.27
	(0.03)	(0.15)	(0.08)	(0.11)	(0.06)	(0.04)
	[6748]	[78]	[1767]	[199]	[1187]	[12018]
Wave IV						
Finished College	0.30	0.35†	0.16*	0.27	0.15*	0.27
	(0.02)	(0.09)	(0.03)	(0.06)	(0.02)	(0.03)
	[3882]	[52]	[947]	[114]	[772]	[6929]
Wave III & IV						
Wages	16.59	17.56†	13.93*	15.49	15.41*	16.22
	(0.39)	(1.82)	(0.58)	(0.88)	(0.69)	(0.32)
	[4090]	[51]	[976]	[149]	[917]	[6753]
FT Employment	0.832	0.817	0.694*	0.774	0.799	0.804*
	(0.012)	(0.071)	(0.031)	(0.076)	(0.024)	(0.012)
	[4644]	[65]	[1448]	[54]	[1127]	[8178]

[a]Standard errors for means in parentheses, sample sizes in brackets. * denotes significantly different from the white-student mean at the 5% level. † denotes significantly different from the own-minority group mean (black or Hispanic) at the 5% level. AHPVT is measured at Wave I; GPA is measured from transcripts at Wave III, math and science are cumulative across all subject courses completed; completed education measured at Wave IV for males. Wages come from a pooled cross section of un-enrolled male respondents at Waves III and IV.

Table 4: Add Health PV Test Score Regressions[a]

	Specification					
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Black	-12.258	-3.287	-2.259	-2.819	-7.445	
	1.047	1.993	1.635	1.183	0.506	
Black mom		-9.601	-8.397	-5.287		-7.854
		2.006	1.624	1.3		0.548
Hispanic	-11.899	-4.509	-2.63	-1.188	-5.061	
	0.929	1.101	1.07	1.004	0.795	
Hispanic mom		-9.21	-6.591	-5.741		-6.677
		1.298	1.135	1.01		0.762
R^2	0.131	0.144	0.245	0.35	0.345	0.349
Mother Characteristics	no	no	yes	yes	yes	yes
School FE	no	no	no	yes	yes	yes

[a]Dependent variable is the normalized Add Health version of the Peabody Picture Vocabulary Test. Sample size is 14314. All regressions include other race, mom other race, female, and age. White and white mom are omitted. Mother characteristics include income, on welfare, single parent, mother's age, mother's education, and biological mother. Missing indicators are used for non-race variables.

Table 5: Pooled Math GPA Regressions[a]

	Specification					
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Black	-0.448	-0.115	-0.063	0.004	-0.199	
	(0.032)	(0.089)	(0.087)	(0.082)	(0.041)	
Black mom		-0.358	-0.320	-0.232		-0.228
		(0.092)	(0.090)	(0.087)		(0.043)
Hispanic	-0.309	-0.177	-0.151	-0.065	-0.099	
	(0.037)	(0.066)	(0.064)	(0.059)	(0.044)	
Hispanic mom		-0.157	-0.102	-0.046		-0.099
		(0.072)	(0.069)	(0.065)		(0.048)
R^2	0.154	0.155	0.174	0.213	0.213	0.213
Course X year FE	yes	yes	yes	yes	yes	yes
Mother Characteristics	no	no	yes	yes	yes	yes
School FE	no	no	no	yes	yes	yes

[a]Sample size is 31056. All regressions include other race, mom other race, female, and age. White and white mom are omitted. Mother characteristics include income, on welfare, single parent, mother's age, mother's education, and biological mother. Missing indicators are used for non-race variables.

Table 6: Men's Educational Attainment, Ordered Probit[a]

	Specification					
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Black	-0.384	-0.059	0.100	0.136	-0.094	
	(0.111)	(0.148)	(0.163)	(0.175)	(0.075)	
Black Mom		-0.359	-0.331	-0.278		-0.149
		(0.163)	(0.178)	(0.187)		(0.081)
Hispanic	-0.326	-0.256	-0.059	0.001	-0.040	
	(0.073)	(0.129)	(0.143)	(0.137)	(0.081)	
Hispanic Mom		-0.092	0.046	-0.063		-0.058
		(0.132)	(0.148)	(0.147)		(0.088)
Mother Characteristics	no	no	yes	yes	yes	yes
School FE	no	no	no	yes	yes	yes

[a]Educational attainment is given as 1=some high school, 2=high school graduate, 3=some college, 4=college graduate, 5=more than college. Sample size is 5434. All regressions include other race, mom other race, female, and age. White and white mom are omitted. Mother characteristics include income, on welfare, single parent, mother's age, mother's education, and biological mother, plus missing indicators.

Table 7: Male Log-Hourly Wage Regressions-Full Time Workers[a]

	Specification							
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Black	-0.205	-0.015	0.029	0.036	0.010	0.033	-0.133	
	(0.034)	(0.079)	(0.081)	(0.078)	(0.074)	(0.076)	(0.042)	
Black Mom		-0.207	-0.199	-0.151	-0.143	-0.193		-0.162
		(0.084)	(0.087)	(0.083)	(0.078)	(0.079)		(0.043)
Hispanic	-0.043	0.042	0.081	0.086	0.082	0.017	-0.058	
	(0.029)	(0.053)	(0.055)	(0.055)	(0.055)	(0.059)	(0.042)	
Hispanic Mom		-0.103	-0.078	-0.045	-0.054	-0.107		-0.092
		(0.062)	(0.066)	(0.063)	(0.063)	(0.068)		(0.047)
R^2	0.252	0.253	0.272	0.286	0.302	0.357	0.355	0.356
Mother Char.	no	no	yes	yes	yes	yes	yes	yes
PV Test & GPA	no	no	no	yes	yes	yes	yes	yes
Educational Attainment	no	no	no	no	yes	yes	yes	yes
School FE	no	no	no	no	no	yes	yes	yes

[a]Hourly wages for respondents with positive earnings in the prior calendar year and more than 30 hours at current job. Sample size is 6753. Coefficients not shown here include: other race, other race-mother, male, age, wave four indicator. Mother's characteristics include age, education, income, on welfare, and single, and an indicator for non-biological mother. Both school and mother characteristics measured at wave one.

Table 8: Multinomial Logit: None, Part-Time, or Full-Time Work[a]

	Specification									
	(i)		(ii)		(iii)		(iv)		(v)	
	Part	Full	Part	Full	Part	Full	Part	Full	Part	Full
Black	-0.600	-1.033	0.415	-0.196	0.322	-0.124	-0.524	-0.602		
	(0.253)	(0.173)	(0.490)	(0.490)	(0.535)	(0.554)	(0.252)	(0.211)		
Black Mom			-1.083	-0.873	-0.921	-0.502			-0.608	-0.625
			(0.545)	(0.483)	(0.589)	(0.565)			(0.271)	(0.216)
Hispanic	-0.474	-0.378	-0.208	-0.013	-0.142	0.164	-0.266	0.046		
	(0.206)	(0.167)	(0.504)	(0.383)	(0.504)	(0.371)	(0.222)	(0.209)		
Hispanic Mom			-0.309	-0.413	-0.161	-0.131			-0.278	0.01
			(0.538)	(0.425)	(0.562)	(0.454)			(0.262)	(0.255)
Pseudo-R^2	0.125		0.124		0.144		0.143		0.144	
Mother Char.	no	no	no	no	yes	yes	yes	yes	yes	yes
PV Test & GPA	no	no	no	no	yes	yes	yes	yes	yes	yes
Educational Attainment	no	no	no	no	yes	yes	yes	yes	yes	yes

[a]Coefficients relative to not working. Sample size is 8178. Sample only includes men unenrolled in school at the time of survey. Coefficients not shown here include: other race, other race-mother, male, age, wave four indicator. Mother's characteristics include age, education, income, on welfare, and single.

Table 9: Robustness Check: Interviewer Reported (IR) Race[a]

	Specification			
Male Wages	(i)	(ii)	(iii)	(iv)
IR Black	-0.214	0.013	0.081	0.084
	(0.035)	(0.101)	(0.098)	(0.109)
Black Mom		-0.242	-0.252	-0.287
		(0.105)	(0.103)	(0.117)
Male Education	(i)	(ii)	(iii)	(iv)
IR Black	-0.347	0.035	0.127	0.172
	(0.102)	(0.211)	(0.227)	(0.255)
Black Mom		-0.411	-0.335	-0.292
		(0.223)	(0.242)	(0.270)
AHPVT	(i)	(ii)	(iii)	(iv)
IR Black	-12.49	-5.29	-3.31	-3.88
	(1.06)	(2.41)	(2.00)	(1.35)
Black mom		-7.60	-7.53	-4.27
		(2.39)	(2.02)	(1.47)
Math GPA	(i)	(ii)	(iii)	(iv)
IR Black	-0.456	-0.263	-0.177	-0.085
	(0.032)	(0.102)	(0.105)	(0.109)
Black mom		-0.204	-0.200	-0.136
		(0.105)	(0.108)	(0.113)
Mother Characteristics	no	no	yes	yes
School FE	no	no	no	yes

[a]Interviewer assessment that child's race is white, black or other must agree with self-report. Maternal race is self-reported, results include indicators for mom's race Hispanic and Other. AHPVT and GPA always include controls for female, age, and own race other; GPA regressions also include course-by-year indicators. All regressions include child age, wave of survey, and own race other. Wage regressions include only those working full-time, completed eduction those unenrolled at Wave IV. Standard errors are clustered at the school level for wage, education and AHPVT results and at the individual level for GPA results. Education specification is an ordered probit on 1=some high school, 2=high school graduate, 3=some college, 4=college graduate, 5=more than college. Number of observations for each set of results is: wages, 5584; education 3900; AHPVT, 11642; and Math GPA, 26008.

Table 10: Robustness Check: Male Hourly Wages with IR Skin Color[a]

	Specification						
IR Skin Color	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Light Brown	-0.082	-0.059	-0.042	-0.043	-0.042	-0.015	-0.058
	(0.036)	(0.040)	(0.040)	(0.038)	(0.037)	(0.036)	(0.036)
Medium Brown	-0.042	0.011	0.059	0.062	0.054	0.065	-0.005
	(0.047)	(0.056)	(0.058)	(0.057)	(0.055)	(0.056)	(0.050)
Dark Brown	-0.222	-0.109	-0.056	-0.059	-0.072	-0.038	-0.149
	(0.051)	(0.070)	(0.070)	(0.068)	(0.067)	(0.064)	(0.057)
Black	-0.226	-0.104	-0.062	-0.047	-0.049	-0.026	-0.142
	(0.066)	(0.072)	(0.070)	(0.072)	(0.070)	(0.067)	(0.061)
Maternal Race							
Black Mom		-0.133	-0.131	-0.085	-0.094	-0.149	
		(0.058)	(0.058)	(0.056)	(0.056)	(0.058)	
Hispanic Mom		-0.029	0.010	0.037	0.029	-0.080	
		(0.039)	(0.038)	(0.037)	(0.036)	(0.044)	
Other Mom		0.022	0.025	0.041	0.030	-0.079	
		(0.066)	(0.069)	(0.067)	(0.064)	(0.069)	
R^2	0.272	0.273	0.29	0.304	0.316	0.374	0.373
Mother Char.	no	no	yes	yes	yes	yes	yes
PV Test & GPA	no	no	no	yes	yes	yes	yes
Educational Attainment	no	no	no	no	yes	yes	yes
School FE	no	no	no	no	no	yes	yes

[a]Skin color is reported by the interviewer at Wave III, indicators for the interviewer's race are included. Hourly wages for respondents with positive earnings in the prior calendar year and positive hours at current job. Coefficients not shown here include: male, age, wave four indicator. Mother's characteristics include age, education, income, on welfare, and single, and an indicator for non-biological mother. Both school and mother characteristics measured at wave one. Sample size is 5992 and differs from descriptive statistics, because of those with missing skin color are dropped.

Table 11: Robustness Check: AHPVT and Parenting[a]

	Specification						
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Black	-12.258	-3.287	-2.259	-2.193	-1.973	-2.003	-2.585
	(1.047)	(1.993)	(1.635)	(1.582)	(1.557)	(1.547)	(1.159)
Black mom		-9.601	-8.397	-8.05	-7.488	-7.422	-4.796
		(2.006)	(1.624)	(1.549)	(1.503)	(1.497)	(1.256)
Hispanic	-11.899	-4.509	-2.63	-2.605	-2.781	-2.661	-1.082
	(0.929)	(1.101)	(1.070)	(1.076)	(1.051)	(1.041)	(0.975)
Hispanic Mom		-9.21	-6.591	-6.232	-6.213	-6.3	-5.511
		(1.298)	(1.135)	(1.122)	(1.122)	(1.111)	(1.000)
R^2	0.131	0.144	0.245	0.257	0.267	0.275	0.369
Mother Char.	no	no	yes	yes	yes	yes	yes
Time use/Work	no	no	no	yes	yes	yes	yes
Birth Mechanisms	no	no	no	no	yes	yes	yes
Parenting Discussions	no	no	no	no	no	yes	yes
School FE	no	no	no	no	no	no	yes

[a]Sample size for AHPVT is 14314, sample size for Math GPA is 31056. Standard controls used are mother's characteristics, school fixed effects. Additional mother's behaviors are time use: mother works for pay, hours mother works for pay, mother home before school (6 categories), mother home after school (6 categories), mother home at bed time (5 categories); birth mechanisms: birth weight and breastfeeding (3 categories); and parenting interactions: in prior month residential mother and/or father had discussions with child regarding: behavior problems, grades, or school projects/homework.

Table 12: NLSY79 Differences in Means by Maternal Race[a]

	White	Black	Hispanic	HS Grads White	College Grads Black
N	5695	3187	2209	2708	398
Mother Background					
Mom Education	13.25	12.95*	12.11*	12.00	16.70*
AFQT Z-score	0.073	-0.987*	-0.852*	-0.262	-0.300
Log Permanent Income	11.16	10.79*	10.92*	11.07	11.12*
Grandpa Education	11.56	10.41*	7.36*	10.80	11.33*
Grandma Education	11.69	9.80*	7.48*	10.94	11.80*
Childhood Background					
Age 5 HOME Score	0.157	-0.818*	-0.456*	-0.005	-0.198*
Age 5 Cognitive Sub-score	0.131	-0.631*	-0.557*	-0.007	0.037
Age 5 Emotional Sub-score	0.120	-0.760*	-0.166*	-0.012	-0.427*
Unmarried - Child Age 5	0.093	0.543*	0.219*	0.103	0.317*
Unmarried - Child Age 10	0.187	0.598*	0.333*	0.203	0.428*
Mother's Age at Birth	25.78	24.13*	25.44*	24.46	27.19*
Maternity Leave $<$ 1 year	0.169	0.182*	0.149*	0.198	0.161*
No work year before birth	0.281	0.373*	0.347*	0.328	0.194*
Birth Weight	119.9	112.5*	118.1*	118.75	114.71*
Teaching Beliefs					
Parents always teach	0.400	0.640*	0.501*	0.505	0.554
Parents usually teach	0.509	0.304*	0.417*	0.435	0.365*
Usually learn on own	0.085	0.044*	0.066*	0.058	0.067
Always learn on own	0.004	0.012*	0.011*	0.002	0.014*
Books in home age 0-2					
10 books or more	0.752	0.396*	0.475*	0.680	0.620*
Books in home age 3-5					
10 books or more	0.937	0.644*	0.696*	0.921	0.882*
Reading Age 0-2					
Several times a month or more	0.924	0.824*	0.801*	0.886	0.916
Once a week or more	0.863	0.707*	0.695*	0.820	0.790
About 3 times a year or more	0.752	0.488*	0.499*	0.671	0.622
Every day or more	0.460	0.188*	0.233*	0.360	0.325
Reading Age 3-5					
Several times a month or more	0.968	0.898*	0.876*	0.960	0.952
Once a week or more	0.886	0.709*	0.734*	0.844	0.789*
About 3 times a year or more	0.763	0.498*	0.593*	0.689	0.639
Every day or more	0.414	0.152*	0.213*	0.316	0.319

[a] * Denotes significantly different from white mean at the 5% level. College grads have 16 or more years of schooling, HS Grads have exactly 12 years. Each panel compares means of non-missing responses. N varies across each question, the highest N for each group is given in the table. Maternity leave calculated among those returning to work.

Table 13: Mean differences in child test scores by maternal race[a]

	White	Black	Hispanic	White HS grad only	Black college grad
N	5695	3187	2209	2708	398
PPVT					
age 4-5	-0.122	-1.580*	-1.327*	-0.335	-0.928*
age 10-11	0.215	-1.099*	-0.757*	-0.058	-0.348*
PIAT-MATH					
age 5-6	0.310	-0.276*	-0.235*	0.132	0.102*
age 9-10	0.511	-0.271*	-0.235*	0.279	0.234
PIAT-READ					
age 5-6	0.569	0.318*	0.158*	0.378	0.805*
age 9-10	0.585	-0.044*	0.166*	0.385	0.489

[a]* denotes significantly different from white mean outcome at 5% level. N represents maximum number of observations since not all children have taken all tests at all ages. High school graduate means the mother reported exactly 12 years of education; college graduate means the mother reported 16 or more years of education.

Table 14: CNLSY79 Test Scores: PIAT Math and PPVT[a]

	PPVT at Age:					
	5	11	5	11	5	11
Black mom	-1.452	-1.189	-0.945	-0.711	-0.569	-0.359
	(0.055)	(0.053)	(0.065)	(0.063)	(0.069)	(0.068)
Hispanic mom	-1.169	-0.848	-0.561	-0.262	-0.332	-0.073
	(0.071)	(0.068)	(0.076)	(0.074)	(0.075)	(0.074)
Other mom	-1.098	-0.883	-0.546	-0.420	-0.528	-0.456
	(0.230)	(0.256)	(0.228)	(0.248)	(0.254)	(0.278)
Mom's AFQT z-score			0.236	0.276	0.201	0.226
			(0.033)	(0.032)	(0.032)	(0.032)
Mom's education (yrs)			0.044	0.042	0.022	0.021
			(0.013)	(0.013)	(0.013)	(0.013)
ln(perm income)			0.204	0.125	0.053	0.016
			(0.077)	(0.084)	(0.076)	(0.081)
Unmarried			-0.115	-0.118	-0.056	-0.048
			(0.043)	(0.055)	(0.040)	(0.052)
R^2	0.198	0.159	0.306	0.272	0.376	0.331

	Math at Age:					
	6	10	6	10	6	10
Black mom	-0.551	-0.653	-0.221	-0.267	-0.092	-0.117
	(0.034)	(0.036)	(0.043)	(0.043)	(0.045)	(0.046)
Hispanic mom	-0.485	-0.501	-0.149	-0.099	-0.089	-0.030
	(0.039)	(0.044)	(0.047)	(0.050)	(0.048)	(0.052)
Other mom	-0.358	-0.415	-0.157	-0.181	-0.153	-0.173
	(0.167)	(0.196)	(0.159)	(0.179)	(0.166)	(0.194)
Mom's AFQT z-score			0.149	0.216	0.138	0.184
			(0.023)	(0.023)	(0.023)	(0.023)
Mom's education (yrs)			0.027	0.026	0.017	0.017
			(0.009)	(0.009)	(0.009)	(0.009)
ln(perm income)			0.283	0.231	0.200	0.149
			(0.051)	(0.050)	(0.051)	(0.050)
Unmarried			-0.059	-0.039	-0.017	0.007
			(0.035)	(0.039)	(0.035)	(0.038)
R^2	0.087	0.142	0.187	0.252	0.220	0.283
Baseline Controls	yes	yes	yes	yes	yes	yes
Mother's Endowment	no	no	yes	yes	yes	yes
Early Life Controls	no	no	no	no	yes	yes

[a]Sample size for PPVT is 3207, for Math 4146. Baseline controls are female, age in months, survey year dummies Mother's endowment is mother's AFQT, education, log-permanent income, maternal grandparent's education, age at birth, maternity leave in years, an indicator for no work prior to pregnancy, unmarried at age of test; Early Life Controls are HOME, and cognitive and emotional sub-scores at age 5, Mothers view of child learning, alcohol, smoking, birth weight, breast fed, books in home age 0-2, books in home age 3-5, reading frequency age 0-2, reading frequency age 3-5. Regressions include only observations with valid home, emotional and cognitive scores; all other missing variables are controlled with missing indicators.

Table 15: CNLSY79 Later Test Scores with Imputation [a]

	Age 11		Age 10		Age 10	
	PPVT	PPVT	Math	Math	Read	Read
Black mom	-0.359	-0.456	-0.117	-0.131	0.013	0.001
	(0.068)	(0.051)	(0.046)	(0.042)	(0.050)	(0.046)
Hispanic mom	-0.073	-0.123	-0.030	-0.016	0.112	0.097
	(0.074)	(0.051)	(0.052)	(0.045)	(0.054)	(0.048)
Other	-0.456	-0.208	-0.173	-0.155	0.176	0.127
	(0.278)	(0.157)	(0.194)	(0.169)	(0.202)	(0.183)
Mom's AFQT z-score	0.226	0.262	0.184	0.195	0.209	0.220
	(0.032)	(0.023)	(0.023)	(0.021)	(0.025)	(0.022)
Mom's education (yrs)	0.021	0.021	0.017	0.016	0.017	0.021
	(0.013)	(0.009)	(0.009)	(0.008)	(0.009)	(0.008)
ln(perm income)	0.016	0.045	0.149	0.136	0.192	0.192
	(0.081)	(0.057)	(0.050)	(0.045)	(0.050)	(0.045)
Unmarried	-0.048	-0.056	0.007	-0.001	-0.064	-0.064
	(0.052)	(0.037)	(0.038)	(0.033)	(0.041)	(0.036)
N	3207	7562	4146	5254	4071	5166
R^2	0.331	0.344	0.283	0.297	0.235	0.241
Imputed Missing	no	yes	no	yes	no	yes
Baseline Controls	yes	yes	yes	yes	yes	yes
Mother's Endowment	yes	yes	yes	yes	yes	yes
Early Life Controls	yes	yes	yes	yes	yes	yes

[a]Missing home scores are imputed by maternal race-specific means, an indicator for any ELCs missing is interacted with maternal race. Baseline controls are female, age in months, survey year dummies; Mother's endowment is mother's AFQT, education, log-permanent income, maternal grandparent's education, age at birth, maternity leave in years, an indicator for no work prior to pregnancy, unmarried at age of test; Early Life Controls are HOME, and cognitive and emotional sub-scores at age 5, Mothers view of child learning, alcohol, smoking, birth weight, breast fed, books in home age 0-2, books in home age 3-5, reading frequency age 0-2, reading frequency age 3-5. Regressions include only observations with valid home, emotional and cognitive scores; all other missing variables are controlled with missing indicators.

Table 16: CNLSY79 Test Scores: Hi-Ed. Blacks, Low-Ed. Whites[a]

	PPVT at Age:					
	5	11	5	11	5	11
Black mom	-0.478	-0.139	-0.845	-0.384	-0.611	-0.204
	(0.129)	(0.114)	(0.153)	(0.133)	(0.152)	(0.131)
Mom's AFQT z-score			0.233	0.309	0.185	0.262
			(0.049)	(0.045)	(0.046)	(0.048)
Mom's Schooling > 16			0.746	0.518	0.568	0.384
			(0.215)	(0.202)	(0.220)	(0.194)
ln(perm income)			0.460	0.157	0.171	0.012
			(0.124)	(0.117)	(0.120)	(0.120)
Unmarried			-0.198	-0.112	-0.122	-0.003
			(0.075)	(0.085)	(0.068)	(0.090)
R^2	0.022	0.020	0.160	0.130	0.298	0.210
	Math at Age:					
	6	10	6	10	6	10
Black mom	-0.013	-0.033	-0.267	-0.237	-0.169	-0.063
	(0.086)	(0.077)	(0.103)	(0.091)	(0.107)	(0.099)
Mom's AFQT z-score			0.145	0.188	0.132	0.163
			(0.036)	(0.036)	(0.037)	(0.037)
Mom's Schooling > 16			0.517	0.333	0.415	0.246
			(0.161)	(0.140)	(0.172)	(0.146)
ln(perm income)			0.506	0.501	0.402	0.359
			(0.084)	(0.088)	(0.089)	(0.092)
Unmarried			0.005	0.005	0.037	0.040
			(0.058)	(0.075)	(0.059)	(0.070)
R^2	0.024	0.058	0.133	0.192	0.176	0.248
Baseline Controls	yes	yes	yes	yes	yes	yes
Mother's Endowment	no	no	yes	yes	yes	yes
Early Life Controls	no	no	no	no	yes	yes

[a]Black mother's have 16 years or more of education, white mother's 12 years exactly. Sample size for Math: 1101, for PPVT: 883. Baseline controls are female, age in months, survey year dummies Mother's endowment is mother's AFQT, log-permanent income, maternal grandparent's education, indicator for more than 16 years of schooling, age at birth, maternity leave in years, an indicator for no work prior to pregnancy, unmarried at age of test; Early Life Controls are HOME, and cognitive and emotional sub-scores at age 5, Mothers view of child learning, alcohol, smoking, birth weight, breast fed, books in home age 0-2, books in home age 3-5, reading frequency age 0-2, reading frequency age 3-5. Regressions include only observations with valid home, emotional and cognitive scores; all other missing variables are controlled with missing indicators.

Table 17: Mother's Characteristics of Hi-Ed. Blacks, Low-Ed. Whites, Add Health

	White mom HS diploma or equiv	Black mom College or more
Inputs		
Income	42.4	44.2
	(1.2)	(2.6)
	[2677]	[746]
On welfare	0.067	0.049
	(0.009)	(0.011)
	[2986]	[892]
Single parent	0.192	0.436
	(0.010)	(0.034)
	[2992]	[841]
Mother's age	40.6	42.3
	(0.2)	(0.5)
	[2930]	[813]
Outcomes		
AHPVT	103.2	98.3
	(0.4)	(1.2)
	[2874]	[802]
Math GPA	2.22	2.06
	(0.03)	(0.10)
	[1959]	[515]
Science GPA	2.29	2.15
	(0.04)	(0.11)
	[1945]	[514]
Overall GPA	2.58	2.48
	(0.03)	(0.09)
	[1963]	[517]

Table 18: Add Health PVT and Math GPA Hi-Ed. Blacks, Low-Ed. Whites[a]

	Specification		
	(i)	(ii)	(iii)
Add Health PVT score			
Black mom	-4.880	-5.725	-4.794
	(1.195)	(1.215)	(0.986)
R^2	0.021	0.050	0.175
Math GPA			
Black mom	-0.2090	-0.2050	-0.0789
	(0.0515)	(0.0631)	(0.0762)
R^2	0.108	0.120	0.194
Controls			
Mom characteristics	no	yes	yes
School FE	no	no	yes

[a]Dependent variable is the normalized Add Health version of the Peabody Picture Vocabulary Test. All regressions include female, and age. Mother characteristics include income, on welfare, single parent, mother's age and a dummy for mother's education greater than 16 years. Missing indicators are used for non-race variables. Sample size is 3676 for the PVT regressions and 8214 for the Math GPA regressions. Math GPA regressions include course by year fixed effects.

Table 19: Descriptive Statistics-Waves I, III and IV[a]

	Male Sample		
	Wave 1	Wave 3	Wave 4
Mean Age	15.83	22.21	28.73
Work Part-time	-	0.180	0.128
Work Full-time	-	0.498	0.836
Enrolled in School	-	0.369	0.160
Wave I Family Background Mean			
White Income ($1000)	50.3	50.8	50.8
Black Income	30.0	29.4	29.5
Mixed Black-White Income	33.0	36.5	35.7
White On Welfare	0.064	0.059	0.061
Black On Welfare	0.194	0.192	0.192
Mixed Black-White On Welfare	0.211	0.137	0.225
Race			
Black	0.150	0.146	0.145
Hispanic	0.118	0.117	0.116
Other	0.042	0.047	0.033
Mother Black	0.144	0.138	0.135
Mother Hispanic	0.102	0.106	0.100
Mother Other	0.042	0.049	0.040
# Black, Mother White	132	86	101
N	14943	11494	11907

[a]Table reports weighted means using the relevant cross-sectional wave weight correcting for non-random oversampling and attrition. Valid maternal race report is required to enter the table, otherwise missing values are assigned at the mean of the observed distribution.

Table 20: Pooled Overall and Science GPA Regressions[a]

	Specification					
Overall GPA	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Black	-0.441	-0.209	-0.151	-0.091	-0.183	
	(0.026)	(0.071)	(0.069)	(0.068)	(0.031)	
Black mom		-0.249	-0.218	-0.106		-0.192
		(0.074)	(0.072)	(0.071)		(0.033)
Hispanic	-0.266	-0.130	-0.100	-0.027	-0.076	
	(0.030)	(0.049)	(0.048)	(0.047)	(0.034)	
Hispanic mom		-0.163	-0.074	-0.070		-0.094
		(0.053)	(0.052)	(0.051)		(0.037)
R^2	0.252	0.253	0.289	0.345	0.345	0.345
Science GPA	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Black	-0.570	-0.316	-0.242	-0.232	-0.300	
	(0.036)	(0.107)	(0.103)	(0.096)	(0.047)	
Black mom		-0.271	-0.199	-0.078		-0.299
		(0.111)	(0.107)	(0.100)		(0.049)
Hispanic	-0.372	-0.168	-0.115	-0.052	-0.147	
	(0.040)	(0.069)	(0.070)	(0.068)	(0.052)	
Hispanic mom		-0.245	-0.124	-0.137		-0.186
		(0.075)	(0.076)	(0.074)		(0.057)
R^2	0.104	0.105	0.153	0.207	0.207	0.206
Mother Characteristics	no	no	yes	yes	yes	yes
School FE	no	no	no	yes	yes	yes

[a]Overall GPA sample size is 35269, Science GPA sample size is 27814. All regressions include other race, mom other race, female, and age. White and white mom are omitted. Overall GPA regressions have dummies for math level, science level, and year of course taking. Science GPA regressions include dummies for each year by course possibility. Mother characteristics include income, on welfare, single parent, mother's age, mother's education, and biological mother. Missing indicators are used for all non-race variables.

Table 21: CNLSY79 Test Scores: PIAT Reading[a]

	Reading at Age:					
	6	10	6	10	6	10
Black mom	-0.200	-0.541	0.176	-0.124	0.309	0.013
	(0.034)	(0.038)	(0.042)	(0.047)	(0.044)	(0.050)
Hispanic mom	-0.344	-0.358	0.022	0.050	0.093	0.112
	(0.040)	(0.044)	(0.046)	(0.052)	(0.048)	(0.054)
Other mom	-0.201	-0.142	0.027	0.144	0.048	0.176
	(0.145)	(0.224)	(0.133)	(0.198)	(0.147)	(0.202)
Mom's AFQT z-score			0.180	0.224	0.166	0.209
			(0.022)	(0.024)	(0.023)	(0.025)
Mom's education (yrs)			0.021	0.026	0.014	0.017
			(0.009)	(0.009)	(0.009)	(0.009)
ln(perm income)			0.259	0.281	0.187	0.192
			(0.047)	(0.051)	(0.047)	(0.050)
Unmarried			-0.058	-0.111	-0.015	-0.064
			(0.035)	(0.042)	(0.034)	(0.041)
R^2	0.099	0.080	0.211	0.202	0.242	0.235

[a]Sample size is 4071. Baseline controls are female, age in months, survey year dummies Mother's endowment is mother's AFQT, education, log-permanent income, maternal grandparent's education, age at birth, maternity leave in years, an indicator for no work prior to pregnancy, unmarried at age of test; Early Life Controls are HOME, and cognitive and emotional sub-scores at age 5, Mothers view of child learning, alcohol, smoking, birth weight, breast fed, books in home age 0-2, books in home age 3-5, reading frequency age 0-2, reading frequency age 3-5. Regressions include only observations with valid home, emotional and cognitive scores; all other missing variables are controlled with missing indicators.

Table 22: Cross Tabulation of Student's Skin Tone and Maternal Race[a]

	Maternal Race					
Skin Tone	White	Black	Hispanic	Other	Missing	Total
White	6,706	10	824	235	1,660	9,435
Light Brown	337	311	625	366	530	2,169
Medium Brown	83	772	200	167	350	1,572
Dark Brown	21	700	46	44	237	1,048
Black	17	683	26	14	214	954
Missing	7	5	5	0	2	19
Total	7,171	2,481	1,726	826	2,993	15,197

[a]Skin tone is interviewer reported at Wave III, race is self-reported from Wave I.