Family Structure and the Reproduction of Inequality: A Decomposition Approach

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Abstract

Over the past fifty years, family patterns have become more diverse by socioeconomic status (SES), raising concerns about the role of family structure in the reproduction of inequality. Using data from a recent cohort of young adults from the NLSY97 (N = 4,887) and decomposition models, the present study examines the extent to which differences in children's educational attainment by parents' socioeconomic status are attributable to SES differences in family structure, as well as how much of this "family structure effect" is due to SES differences in family structure *composition* versus SES differences in the *association* between family structure and children's attainment. The results suggest that family structure plays a surprisingly small role in explaining differences in children's educational attainment by the socioeconomic status of their family of origin. This study sheds new light on how the organization of family life contributes to the perpetuation of economic inequality across generations.

Family life in the United States has changed dramatically over the past fifty years, with serious implications for children. High rates of nonmarital childbearing, divorce, cohabitation, and remarriage have made children's lives much more diverse and unstable (Cherlin, 2010). Recent estimates indicate that over half of children will spend a portion of their childhood living apart from one of their biological parents—usually their father (Bumpass & Lu, 2000; Ellwood & Jencks, 2004). These changes have not affected all segments of the population equally, but instead have occurred at much higher rates among parents with lower levels of education and other indicators of social disadvantage (Carlson & England, 2011; McLanahan, 2004). These trends are worrisome, given that growing-up in a non-intact family has been shown to be associated with a range of negative outcomes for children, both early in life and in adulthood (McLanahan & Sandefur, 1994; Sigle-Rushton & McLanahan, 2004). As a result, both academics and the public at large have voiced concerns about the extent to which family diversity is responsible for the perpetuation of socioeconomic, or class, inequality across generations (Massey, 2007; McLanahan, 2004; McLanahan & Percheski, 2008; Western, 2006; but for an alternative argument see Musick & Mare, 2004).

The present study directly addresses this question by examining whether family structure differences by socioeconomic status, measured by parents' level of education, account for socioeconomic differences in children's attainment at the population level. To conduct this analysis, I use decomposition models to assess how much the attainment of children at the lower end of the socioeconomic distribution would be expected to change if they had the same family structure as their more advantaged peers. I also examine how much of this "family structure effect" is due to class differences in family structure *composition* versus class differences in the *association* between family structure and children's attainment. I focus specifically on the

outcome of children's educational attainment in early adulthood, which has been shown to be a strong predictor of their economic attainment (Ashenfelter, Harmon, & Oosterbeek, 1999; Haveman & Smeeding, 2006), and physical and mental health (Link & Phelan, 1995; Phelan, Link, & Tehranifar, 2010), later in life. The results of this study speak to the validity of prevailing claims that differences in the organization of family life by social class are leading to "diverging destinies" for our nation's children (McLanahan, 2004) and fueling the reproduction of socioeconomic inequality (McLanahan & Percheski, 2008).

Background

Class Disparities in Youth's Educational Attainment

A key motivation for this paper is the existence of large differences in children's educational attainment by the socioeconomic status (SES) of their family of origin (Haveman & Smeeding, 2006; Price, 2004; Rouse & Barrow, 2006). Although secular gains in educational attainment over the past several decades have increased the likelihood that children from all class backgrounds will achieve higher levels of education than their parents (Ryan & Siebens, 2012), children's educational attainment remains highly constrained by their parents' socioeconomic status. Recent estimates from the Panel Study of Income Dynamics (PSID) suggest that children from the highest SES quartile are about 50% more likely to graduate from high school than those from the lowest SES quartile (Haveman & Wilson, 2007). This disparity is even more pronounced at the college level; estimates from the same study suggest that children from high-SES families are over 3 times as likely to attend college and over 7 times as likely to graduate from college as their low-SES peers (Haveman & Wilson, 2007). In today's economy, where college graduates can expect to earn nearly one million dollars more over their lifetime than individuals with only a high school education (Julian & Kominski, 2011), these disparities in

educational attainment portend disturbingly large levels of long-term inequality by one's socioeconomic background.

For family structure to play a role in the production of these disparities, family structure must have an effect on children's educational attainment. Prior research suggests this is indeed the case (Sigle-Rushton & McLanahan, 2004). Numerous studies have found that children who are raised by married, biological parents achieve higher test scores (Thomson, Hanson, & McLanahan, 1994), are less likely to drop out of high school (Astone & McLanahan, 1991; Lang & Zagorsky, 2001; McLanahan & Sandefur, 1994), are more likely to graduate from college (Deleire & Kalil, 2002; McLanahan & Sandefur, 1994), and achieve more overall years of education (Ginther & Pollak, 2004; Lopoo & Deleire, 2013), than children who grow-up in a single-parent or step-parent family. These effects are thought to stem from higher levels of parental investments in children—in terms of both money and time—in families headed by married biological parents relative to other types of families (Carlson & Berger, 2013; McLanahan, 1985; Thomson & McLanahan, 2012). In addition, the stress and instability associated with marital dissolution, single parenthood, and remarriage are thought to reduce children's school performance and overall educational attainment (Hill, Yeung, & Duncan, 2001; McLanahan, 1985).

Despite these plausible theoretical links between family structure and children's wellbeing, there exists an ongoing debate in the scholarly literature about whether this association is causal, or if it is driven entirely by pre-existing differences in parents across different types of family structures (i.e., by social selection) (McLanahan, Tach, & Schneider, 2013). Studies that have utilized rigorous methods, such as fixed-effects models or natural experiments, to account for unobserved differences across families have generally found that

while these techniques reduce the association between family structure and children's attainment (relative to techniques that only control for observed factors) they do not eliminate it altogether (Amato & Keith, 1991; Biblarz & Gottainer, 2000; Ermisch & Francesconi, 2001). The general consensus in the literature is that growing-up in a non-intact family has a modest, but meaningful, negative effect on children's educational attainment.

The Role of Family Structure in Understanding Class Disparities in Educational Attainment

Nevertheless, just because family structure has an effect on children's educational attainment does not necessarily mean it is contributing to class disparities in children's attainment at the population level. For these disparities to emerge, family structure must also differ by social class in one or both of the following ways. First, the prevalence of certain family structures could vary by parental SES (*differences in composition*). If children born to low-SES parents are more likely to be raised in a non-intact family than those born to high-SES parents, then the higher prevalence of these types of families at the low end of the socioeconomic distribution will produce disparities in children's educational attainment by parental SES.

Second, the effect of family structure on educational attainment could differ by parental SES (*differences in association*). If growing-up in a non-intact family has a stronger, negative effect on the educational attainment of children born to low-SES parents than those born to high-SES parents, this difference could also produce disparities in children's educational attainment. For instance, low–SES parents may have fewer economic and/or psycho-social resources to buffer the negative effects of raising a child alone, whereas high-SES parents may be able to provide their child with similarly beneficial opportunities regardless of their family structure status (Sigle-Rushton & McLanahan, 2004; Thomson et al., 1994). On the other hand, because wealthier and more educated parents have the potential to pass along greater levels of human

capital to their children, the reduction in material resources and parent-child engagement that often accompanies family dissolution may be particularly detrimental in this context (Coleman, 1988). In other words, growing-up in a non-intact family may be especially harmful for children of high-SES parents because they have more to lose, whereas children born to poor or less-educated parents may be unlikely to attain high levels of education regardless of their family structure. If this theory is correct, then differences in the association between family structure and children's educational attainment by parental SES will serve to mitigate class disparities in children's educational attainment at the population level.

Most empirical research on differences in family structure by social class has focused on differences in composition. Recent demographic work has found that women with lower levels of education (a key indicator of SES) are less likely to marry and more likely to divorce than highly educated women (Goldstein & Kenney, 2001; S. P. Martin, 2006). They are also much more likely to have children outside of marriage (Ellwood & Jencks, 2004). As a result, children born to low-SES mothers are much more likely to experience father absence and family instability than children born to high-SES mothers (McLanahan, 2004). Although these patterns suggest that differences in family structure composition by social class are contributing to class disparities in children's educational attainment, this hypothesis has yet to be tested empirically.

Compared to differences in composition, much less theoretical or empirical work has focused on differences in the association between family structure and children's educational attainment by social class. The few studies that have looked at this have uncovered mixed results, depending on children's ages and the outcomes of interest. Two recent studies of children's school performance in early and middle childhood (ages 3-10) found that the effect of family structure was stronger for children whose mothers had lower levels of education

(Augustine, 2012; Mandemakers & Kalmijn, 2014), which suggests that differences in association may serve to exacerbate existing SES disparities in educational attainment. However, two studies of children's completed educational attainment found that this association was stronger among children from high-SES families (Biblarz & Raftery, 1999; M. A. Martin, 2012), which suggests that differences in association may actually mitigate existing SES disparities in educational attainment. These mixed findings point to the need for additional research on how parental SES moderates the association between family structure and various indicators of children's educational attainment and the implications of this moderation for the production of SES disparities in children's attainment at the population level.

The Present Study

The purpose of the present study is to examine the extent to which differences in family structure are contributing to inequality in young adults' educational attainment by the socioeconomic status of their family of origin. To conduct this analysis, I use decomposition models to quantify how much SES differences in youth's educational attainment would be reduced if youth from low-SES families had the same family structure composition and/or associations as youth from high-SES families.

This study contributes to prior literature on the role of family structure in the reproduction of inequality in three important ways. First, it helps to place the findings from previous studies in context. Most studies on family structure and children's attainment have used individual-level regression models to examine the association between growing-up in a particular family structure and an individual child's outcomes. While the results of these models are informative, they do not tell us anything about how these individual effects combine to produce class disparities in children's attainment at the population level. Second, this analysis considers

the role of SES differences in family structure composition *and* of family structure differences in the association between family structure and children's attainment in the production of these disparities. While a number of scholars have argued that the former is likely contributing to inequality in children's outcomes, much less attention has been paid to the latter.

A third contribution of this analysis is that it aims to provide an answer to a question that is at the heart of many social policies: How much would children benefit if parents at the low end of the socioeconomic distribution experienced the family patterns of parents at the high end of this distribution? Although the estimates produced by decomposition models should not be interpreted as causal (a point I will return to later), these models act as a useful counterfactual tool for assessing how population-level changes in family structure would be expected to influence the next generation's educational attainment. When combined with findings from other analyses that are more robust to causal influence, the results of the decomposition models used in the present paper can help to inform policies designed to promote equality in child and young-adult outcomes.

Method

Data and Sample

The data for this project come from the National Longitudinal Survey of Youth 1997 cohort (NLSY97). The NLSY97 contains a nationally representative sample of 8,984 men and women who were born between 1980 and 1984 and were 12-17 years old when first interviewed in 1997. Follow-up interviews have been conducted annually, with the most recent round of available data coming from 2011 when respondents were 26-31 years old. Retention rates for the follow-up surveys have been quite high; for instance, over 82% of the original sample completed the 2011 round of data collection. During the initial round of data collection, one parent of each

respondent (usually the mother) was asked to complete a supplemental parent interview: 88% of respondents had a parent complete this supplement. This portion of the survey contains important information on biological parents' educational attainment, their marital history, and other key demographic characteristics.

From the full NLSY97 sample, I dropped 825 cases (9.2%) who did not complete an interview when they were 25 years or older, because this was the youngest age at which it seemed reasonable to measure youth's completed educational attainment. I also excluded 1,792 cases (19.9%) whose mother did not complete the parent interview and 1,171 cases (13.0%) who were missing information on their childhood family structure or who did not live with their mother continuously throughout their childhood. I also dropped 56 cases (0.6%) who were missing information on their own educational attainment and 131 cases (1.5%) who were missing information on their parents' educational attainment. Finally, I dropped 122 cases (1.4%) who were missing information on any of the control variables in the multivariate analyses. As I continue to work on this paper, I will use multiple imputation with chained equations to retain cases with missing covariates in my analyses (White, Royston, & Wood, 2011). My final analytic sample consisted on 4,887 youth (54% of the full sample) who were between ages 25 and 31 in 2005-2011.

Measures

Youths' Educational Attainment. I examined three different indicators of youths' educational attainment. The first was a continuous measure of their completed *years of schooling*. The second was a dichotomous measure of whether they completed twelfth grade (*graduated from high school*). Finally, the third was a dichotomous measure of whether they completed their bachelor's degree (*graduated from college*). Although related, these indicators

draw attention to distinct components of the schooling process, all of which have different implications for young adults' wellbeing. In today's economy, failure to graduate from high school is likely to have a dramatic, negative impact on young adults' earnings capacity, whereas failure to graduate from college probably has a smaller—but still substantial—effect. Years of education provides an appealing summary measure of overall educational attainment, but has fewer practical implications than the other two measures. All of these measures were derived from respondents' self-reports when they were 25-31 years old.

Family Structure. I examined two different measures of youths' family structure, both of which reflected their full history of family structure experiences from birth to age 18. These measures were created from a combination of mother and youth reports. Prior to the 1997 survey, youths' family structure can be ascertained from mothers' reports of the start and end dates of all their marital relationships. Beginning in 1997, youths' family structure can be ascertained from their own reports of their household roster. At each survey wave, youth indicated whether they were living with their mother and biological father, their mother and a stepfather, or their mother only. (As mentioned previously, due to the small number of cases, youth who did not live with their mother continuously throughout their childhood were excluded from the sample). From this information, I created a three-category measure of youths' living arrangements for each year of their life from birth through age 17 (for a total of 18 years). Categories included 'both biological parents,' 'mother and stepfather,' and 'mother only.' All family structure transitions were assumed to occur at the start of the year; for example, if mothers got married in the same year their child was born, I coded them as married when their child was born. Also, because mothers were not asked the identity of their child's biological father, I assumed that their spouse in the year of the child's birth was their child's father and that

any subsequent spouse was a stepfather. The only exception was if youth indicated that they were living with their biological father in a subsequent year; in these instances, I coded mothers' partner as youths' biological father rather than a stepfather.

From this information on youths' family structure at each age, I created a detailed, categorical measure capturing the full history of youths' family structure experiences from birth to age 18. This measure included the following 6 categories:

1) *Intact* (lived continuously with both biological parents from 0-17 years old).

2) *Stable single mother* (lived continuously with mother only from 0-17 years old).

3) *Two parent to single mother* (born to both biological parents, experienced dissolution of parents' relationship, and subsequently lived with single mother through age 17).

4) *Two parent to single mother to stepfather* (born to both biological parents, experienced dissolution of parents' relationship, and subsequently lived with a stepfather through age 17).

5) *Single mother to stepfather* (born to a single mother and subsequently lived with a stepfather through age 17).

6) *Other* (experienced more transitions or a different sequence of transitions than the remaining categories).

In addition to this detailed measure, I also created a simple, dichotomous measure of whether youth were raised in an *intact* versus a *non-intact* family.

Parental SES. My primary measure of parents' socioeconomic status reflected the educational attainment of respondents' biological mother and father (based on mothers' reports). This was preferable to a measure of SES based on parents' income or employment because most individuals complete their education prior to having children (or when children are very young);

thus, educational attainment is more likely to be exogenous to youths' family structure than these other indicators of parental SES. Youth from *low-SES* families were defined as those in which both parents had a high school education or less whereas youth from *high-SES* families were defined as those in which at least one parent had some college education or more. This cut-off reflected the median education level of parents in the sample. In order to examine the sensitivity of my results to other ways of measuring parental SES, I also re-ran my analyses distinguishing families in which neither parent graduated from high school from families in which at least one parent had a bachelor's degree or higher. These categories reflected the bottom and top quartiles of parents' educational attainment in the sample. I discuss the results from these supplemental analyses in the Results section.

Controls. Finally, I also included a handful of control variables in my models, in order to account for factors that may confound my estimates of the association between family structure and SES differences in youths' educational attainment. These factors included youths' race/ethnicity ('White,' 'Black,' 'Hispanic,' or 'Other'), their total number of full and half siblings, whether both of their biological parents were born in the U.S., and mothers' age at youths' birth.

Analytic Strategy

My analyses proceeded as follows. First, I estimated descriptive statistics for my measures of youths' educational attainment, family structure, and the control variables, separately by parental SES. This descriptive analysis was important for motivating the decomposition models by illustrating the magnitude of SES differences in educational attainment and family structure composition. If educational attainment or family structure did not vary by

parental SES, then there would have been little point in examining the contribution of SES differences in family structure composition to SES differences in educational attainment.

Next I ran regression models for each measure of youths' educational attainment, separately by parental SES. I used ordinary least squares (OLS) regression to model the outcome of 'years of education' and logistic regression to model the outcomes of 'graduated from high school' and 'graduated from college.' This analysis was necessary to determine whether family structure was associated with educational attainment within SES groups net of the control variables, and if these associations varied by parental SES. If family structure did not predict youths' educational attainment within SES groups, then there would have been little point in examining the contribution of SES differences in association to SES differences in educational attainment.

Finally, after examining whether youths' educational attainment and family structure varied by parental SES, and whether family structure was related to educational attainment within SES groups, I turned to the decomposition models. The Blinder-Oaxaca decomposition method was developed to decompose mean differences in a continuous outcome variable using OLS regression (Blinder, 1973; Oaxaca, 1973). This makes the method ideal for decomposing mean SES differences in youths' total years of schooling, given that it is a continuous variable. I discuss how I decomposed differences in the remaining two outcome variables later in this section. The basic logic of the Blinder-Oaxaca method is as follows:

Mean years of education in each SES group can be expressed with a regression model predicting years of education for youth raised in high-SES families (subscript *h*) and youth raised in low-SES families (subscript *l*) separately (notation follows Jones and Kelley, 1984). That is,

$$\overline{Y}_j = \alpha_j + \overline{X}_j \beta_j \qquad j \in [h, l] \tag{1}$$

where α is a regression constant, X is a vector containing the means on the independent variables (family structure and the control variables), and β is a vector of the associations to be estimated. The difference in mean years of schooling can then be expressed as the difference in these linear predictions. That is,

$$D = \overline{Y}_h - \overline{Y}_l = \left(\alpha_h + \overline{X}_h\beta_h\right) - \left(\alpha_l + \overline{X}_l\beta_l\right) \quad (2).$$

In order to identify the contribution of SES differences in composition and associations to the overall outcome difference, (2) can be rearranged as,

$$D = (\alpha_h - \alpha_l) + (\overline{X}_h - \overline{X}_l)\beta_l + \overline{X}_l(\beta_h - \beta_l) + (\overline{X}_h - \overline{X}_l)(\beta_h - \beta_l) \quad (3)$$

(Winsborough & Dickinson, 1971). This decomposition is expressed from the perspective of the low-SES group. That is, it measures the expected change in the low-SES group's mean years of schooling if this group had the composition/associations of the high-SES group. The first component of equation (3),

$$(\alpha_h - \alpha_l)$$

tells us the "unexplained" part of the difference due to group membership. In other words, it is the portion of the SES difference in mean years of schooling that remains after accounting for the variables in the model. The second component,

$$(\overline{X}_h - \overline{X}_l)\beta_l$$

tells us the expected change in the low-SES group's mean years of schooling if this group had the same composition as the high-SES group with respect to family structure and the control variables, but its association between family structure and years of schooling remained the same. The third component,

$$\overline{X}_l(\beta_h - \beta_l)$$

tells us the expected change in the low-SES group's mean years of schooling if this group had the same associations, or returns to family structure and the control variables, as the high-SES group, but its family structure composition remained the same. Finally, the fourth component,

$$(\overline{X}_h - \overline{X}_l)(\beta_h - \beta_l)$$

is an interaction term representing the contribution of simultaneous differences in the composition and associations between the two groups. This interaction term is difficult to interpret, and is often dropped from the model (using an alternative weighting procedure) or arbitrarily re-allocated to the first and second components. However, I decided to retain the term in the model because doing so produces more conservative estimates of the first and second components (Jann, 2008; Karraker, DeLamater, & Schwartz, 2011).

Recently, a more general version of the Blinder-Oaxaca model was developed to decompose differences in discrete outcome variables (Yun, 2004), such as whether youth graduated from high school and whether they graduated from college. The basic logic of the method is the same as the above, but instead of using an OLS model to decompose differences in the group-specific means of a continuous outcome variable, a logistic regression model is used to decompose differences in the group-specific log odds of a discrete outcome variable. In other words, on the left-hand side of equation 1, $\overline{Y}_j$ is replaced with logit$[\overline{P(Y=1)}]_j$. I used this method to decompose SES differences in youths' log odds of graduating from high school and their log odds of graduating from college. I implemented all of the decomposition models in Stata 13 using the 'Oaxaca' command (Jann, 2008).

Results

Descriptive Results

Descriptive information on the educational attainment, family structure, and other demographic characteristics of the sample are displayed in Table 1. Overall, young adults in the sample completed nearly 14 years of schooling, or about 2 years of schooling after high school. Over 83% of the sample graduated from high school and 33% graduated from college, consistent with national estimates of educational attainment for this cohort (U.S. Department of Education, 2014). However, these average levels of educational attainment belied significant differences by parental SES. Whereas youth from low-SES families completed around 12.6 years of schooling, youth from high-SES families completed nearly 15 years of schooling. Less than 75% of low-SES youth graduated from high school whereas over 90% of high-SES youth did so. Finally, only 16% of young adults from low-SES families graduated from college, whereas nearly 50% of young adults from high-SES families did so.

Turning to the family structure experiences of the sample, around 50% of the sample grew-up in an intact family; i.e., they lived with both of their biological parents from birth to age 18. Just over 16% grew-up in a stable, single-mother family. Around 18% of the sample experienced their biological parents' divorce, with around 11% living with a single mother for the duration of their childhood and 7% eventually living with a stepfather. Around 4% of the sample was born to a single mother but eventually lived with a stepfather. Finally, just over 12% of the sample experienced more transitions or a different sequence of transitions than those described above. As with educational attainment, family structure also differed by parents' SES. Young adults from high-SES families were much more likely to grow-up in an intact family than young adults from low-SES families. They were also much less likely to be born to a single mother or to experience high amounts of family instability while growing-up (as captured by the 'other' category). Finally, youth from high-SES families were slightly more likely to experience

their parents' divorce and live with a single mother for the duration of their childhood than youth from low-SES families.

With regards to the demographic characteristics of the sample, slightly more than half of young adults identified as White, around one-quarter identified as Black, and just over 20% identified as Hispanic. The average number of full and half siblings was 2.5. Over 82% of young adults indicated that both of their parents were born in the U.S. Finally, mothers were, on average, just under 26 years old when their child was born. Again, these characteristics differed significantly by SES. Youth from high-SES families were more likely to identify as White and less likely to identify as Black or Hispanic, than youth from low-SES families. They also reported fewer siblings, and were more likely to have U.S.-born parents. Finally, high-SES youth tended to have mothers who were slightly older than low-SES youth.

Regression Results

Table 2 displays the regression results for the measures of youths' educational attainment, separately by parental SES. These models were used to investigate whether family structure was associated with educational attainment and if these associations differed by parental SES. For each measure of educational attainment, I ran two separate models. In the first model, I regressed the outcome variable on the basic, dichotomous measure of family structure in order to assess whether growing-up in any type of non-intact family was associated with a reduction in youths' educational attainment. In the second model, I replaced this basic measure with the more detailed, six-category measure of family structure, in order to assess whether growing-up in certain types of non-intact families were particularly detrimental for educational attainment. These models also included all of the covariates, although to conserve space they are not presented in the table and will not be discussed further here. I used OLS regression to model

young adults' years of schooling and logistic regression to model young adults' log odds of graduating from high school and college.

Looking first at the models for years of schooling, the results from Model 1 indicate that in both low-SES and high-SES families, youth from non-intact families had significantly fewer years of schooling than youth from intact families. This association was stronger for youth from high-SES families: growing-up in a non-intact family was associated with more than a 1-year reduction in schooling in a high-SES context versus a 0.65-year reduction in schooling in a low-SES context. The results from Model 2 suggest that young adults raised in all types of non-intact families attained fewer years of schooling than young adults raised in intact families, although the reduction in schooling was especially large for youth raised by a stable single mother. Again, growing-up in a non-intact family—particularly in a stable, single-mother family or in an especially unstable family (the 'other' category)—appeared to be especially detrimental to youth from high-SES families.

The results for the models of young adults' log odds of graduating from high school largely mirrored those for years of schooling. In Model 1, youth from non-intact families were less likely to graduate from high school than youth from intact families. Youth with high-SES parents experienced a larger reduction in their log odds of graduating from high school (log odds = -1.21; odds ratio = 0.30) if they grew-up in a non-intact family than youth with low-SES parents (log odds = -0.62: odds ratio = 0.54). Turning to Model 2, for youth from both low-SES and high-SES families, growing-up in any type of non-intact family was associated with a reduction in the log odds of graduating from high school relative to growing-up in a non-intact family, with this penalty being slightly larger for youth raised in a stable, single-mother family.

Again, the reduction in schooling associated with growing-up in a non-intact family was larger for youth raised in a high-SES context than youth raised in a low-SES context.

Finally, turning the results from the logistic regression models for graduation from college, the results from Model 1 suggest that growing-up in a non-intact family was associated with a significant decrease in young adults' log odds of graduating from college, and that this association was stronger for young adults from high-SES families. Among youth from high-SES families, growing-up in a non-intact family was associated with a 0.80 reduction in the log odds of graduating from college (odds ratio = 0.45), while among youth from low-SES families, growing-up in a non-intact family was associated with a 0.42 reduction in the log odds of graduating from college (odds ratio = 0.66). In Model 2, growing-up in any type of non-intact family was associated with a decrease in the log odds of graduating from college for high-SES youth, but not for low-SES youth. Low-SES youth who were born to a single mother but subsequently lived with a stepfather, or who experienced another family structure trajectory than those described here, did not experience lower odds of graduating from college, whereas in the high-SES context, these types of non-intact families were negatively associated with college graduation. Growing-up in the other three types of non-intact families was associated with a reduction in the log odds of graduating from college for both low-SES and high-SES youth.

Decomposition Results

Table 3 shows the results of the Blinder-Oaxaca decomposition of SES differences in young adults' years of schooling as a function of three components: 1) differences in the composition of family structure by SES, 2) differences in the association between family structure and years of schooling by SES, and 3) interactions between 1 and 2. The SES differences in years of schooling presented in the table are covariate-adjusted, meaning they

represent the portion of the difference that remained when SES differences in the covariates were accounted for. Model 1 used the basic, dichotomous measure of family structure, whereas Model 2 replaced this with the detailed, six-category measure of family structure, in order to assess whether SES differences in years of schooling were driven by SES differences (in terms of composition or association) in particular types of non-intact families. Results are presented both as absolute numbers and as a proportion of the total difference. Positive values indicate that differences in family structure composition or association contributed to fewer years of schooling for low-SES youth, whereas negative values indicate that differences in family structure composition or association served to offset the observed reduction in schooling for low-SES youth.

Looking at the results for Model 1, youth from high-SES families averaged 1.12 more years of schooling than youth from low-SES families. The results of the decomposition indicate that if low-SES families had the same family structure composition as high-SES families (but retained their association between family structure and years of schooling), this difference would have been reduced by 0.13 years, or 12%. If low-SES families had the same association between growing-up in a non-intact family and years of schooling as high-SES families (but retained their same family structure composition), this difference would have increased by 0.25 years, or 22%. Finally, the interaction effect accounts for an additional reduction of 0.08 years (or 7%) in the difference in years of schooling for high-SES versus low-SES youth. Taken together, these results suggest that if youth from low-SES families had the same proportion of non-intact families, and the same association between growing-up in a non-intact family and years of schooling, as youth from high-SES families, the difference in years of schooling for these two groups would have been 0.04 years greater than was actually observed.

The results for Model 2 shed light on which types of non-intact families contributed most to SES differences in years of schooling. Using this more detailed measure of family structure, the estimated difference in years of schooling between high-SES and low-SES youth increased slightly, to 1.27 years. Looking first at differences in composition, stable single-mother families were the largest contributor to differences in years of schooling: If the proportion of low-SES youth growing-up in a stable single-mother family was the same as for high-SES youth, the difference in years of schooling for these two groups would have been reduced by 0.15 years (12%). Although differences in the composition of other types of non-intact families also contributed to differences in years of schooling, the magnitude of these effects was much smaller. Turning to differences in association, the larger associations between growing-up in a stable single-mother family or 'other' type of non-intact family for high-SES youth implies that if low-SES youth had experienced these associations, the difference in years of schooling would have increased by 0.24 years (0.12 + 0.12), or 18% (9% + 9%). Overall, like Model 1, if youth from low-SES families had experienced the same family structure composition and associations as youth from high-SES families, the difference in years of schooling would have been slightly greater (0.04 years) than was actually observed.

The results for the decompositions of the remaining two outcome variables—graduation from high school and graduation from college—are displayed in tables 4 and 5. These results tell a similar story to the decompositions of years of schooling. Holding constant the association between family structure and educational attainment, if youth from low-SES families experienced the same family structure composition as youth from high-SES families, the difference in the log odds of graduating from high school and the log odds of graduating from college would have been reduced. In Model 1 for the outcome for high school graduation (Table

4), the reduction in the log odds would have been 0.12, or 34% of the total difference. In Model 1 for the outcome of college graduation (Table 5), the reduction in the log odds would have been 0.08, or 9% of the total difference. The larger proportionate reduction for the outcome of high school graduation relative to college graduation stems from the fact that family structure was more strongly associated with the former than the latter for low-SES youth (Table 2).

Holding constant family structure composition, if low-SES youth experienced the same association between growing-up in a non-intact family and these educational outcomes as high-SES youth, the difference in the log odds of graduating from high school and the log odds of graduating from college would have been exacerbated. In Model 1 for the outcome of high school graduation, the increase in the log odds would have been 0.36, or 103% of the total difference. In Model 1 for the outcome of college graduation, the increase in the log odds would have been 0.23, or 24% of the total difference.

Turning to Model 2 for these two outcomes, again, differences in the composition of stable single-mother families was the largest contributor to SES differences in educational attainment. Holding differences in association constant, if the proportion of low-SES youth growing-up in a stable single-mother family were the same as for high-SES youth, the difference in the log odds of graduating from high school and college would have been reduced. However, the larger, negative associations between growing-up in most types of non-intact families and these educational outcomes for high-SES youth implies that if low-SES youth had experienced these associations, the difference in these educational outcomes would have increased. Overall, the decompositions for graduating from high school and graduating from college show that if low-SES youth had experienced the same family structure composition and associations as high-

SES youth, SES differences in both of these outcomes would have been greater than were actually observed.

Supplemental Analyses

In order to examine the sensitivity of these decomposition results to my decision to measure parental SES using parents' median educational level, I re-ran the models using an alternative measure of parental SES. In these new analyses (N = 2,041), low-SES parents were defined as those in which neither parent had graduated from high school (the bottom education quartile) and high-SES parents were defined as those in which at least one parent had a bachelor's degree or higher (the top education quartile). Results from these analyses are summarized below (and are available from the author upon request).

Not surprisingly, SES differences in youths' educational attainment were much larger when this alternative measure of SES was used. For instance, after adjusting for covariates, youth from low-SES families averaged 2.70 fewer years of schooling than youth from high-SES families (11.77 years versus 14.47 years), as compared to 1.12 fewer years in the main analyses. However, unlike the results based on parents' median level of education, when children from the bottom and top education quartiles were compared, SES differences in family structure composition no longer contributed to SES differences in educational attainment. This implies that if youth from low-SES families were to experience the same family structure composition as youth from high-SES families, this would not reduce the disparity in their educational attainment. This was true for all three outcome variables. Further examination revealed that this result stemmed from the fact that for youth whose parents were in the bottom education quartile, family structure was not associated with their educational attainment. Youth from these families were unlikely to achieve higher levels of education regardless of the type of family in which they

were raised. As was the case in the main decomposition models, differences in association contributed to greater educational disparities between low-SES youth and high-SES youth. Overall, the results of these supplemental analyses revealed that if youth whose parents were in the bottom education quartile were to adopt the family structure composition and associations of youth whose parents were in the top education quartile, SES disparities in educational attainment would have been much larger than were actually observed.

Discussion

Rising rates of nonmarital childbearing and marital dissolution, particularly among poor and disadvantaged mothers, have fueled concerns that changes in family life may be contributing to disparities in children's wellbeing by the social class of their family of origin. Evidence of stark inequalities in a wide range of child outcomes, including physical health, behavior problems, and school grades, by family structure (Amato, 2000; Sigle-Rushton & McLanahan, 2004) and socioeconomic status (Conti & Heckman, 2012; Kalil, 2013), appear to support the validity of these concerns.

The main objective of the present paper was to provide a direct test of the argument that socioeconomic differences in family structure are responsible for socioeconomic differences in children's wellbeing, focusing specifically on the outcome of children's educational attainment. Decomposition models offered a straightforward, counterfactual tool for quantifying how much the educational attainment of youth from low-SES families would be expected to change if they experienced the same family structure as their high-SES peers. Overall, the results from these analyses suggest that differences in family structure by parental SES play a negligible role in explaining SES disparities in youths' educational attainment. When I accounted for SES differences in both family structure composition and in the association between family structure

and educational attainment, I found that disparities in youths' educational attainment were not reduced; if anything, they were magnified.

The bulk of the theoretical literature on the consequences of family structure for the reproduction of class inequality has focused on the implications of differences in family structure *composition* by social class (Carlson & England, 2011; McLanahan, 2004; McLanahan & Percheski, 2008). Consistent with this literature, when I measured parental SES based on parents' median level of education, I found that the higher proportion of non-intact families at the lower end of the socioeconomic distribution accounted for a portion of these children's lower educational attainment. This was true for all three measures of educational attainment (years of schooling, graduating from high school, and graduating from college). I also found that not all types of non-intact families mattered equally for understanding SES differences in educational attainment. The greater prevalence of stable single-mother families and highly unstable families (as reflected by the 'other' family structure category) at the low-end of the SES distribution accounted for most of the compositional effect of family structure on SES differences in educational attainment. In contrast, SES differences in the prevalence of children experiencing their parents' divorce or living in a stable stepfather family explained a much smaller portion of these education differences. These latter types of non-intact families were less common for low-SES youth relative to other types of non-intact families, and also appeared to be less detrimental for their educational attainment.

Nevertheless, even though the greater prevalence of non-intact families among low-SES youth accounted for a portion of their lower educational attainment, these compositional differences were more than offset by the stronger negative association between growing-up in a non-intact family and educational attainment among high-SES youth. For all three outcome

variables, high-SES youth experienced a greater penalty for growing-up in a non-intact family than low-SES youth. These patterns likely reflect the very high levels of educational attainment achieved by high-SES youth raised in intact families. Because wealthier and more educated parents have the potential to pass along high levels of human capital to their children, the loss in parental resources stemming from divorce or single parenthood constitutes a greater deficit for children born to high-SES parents than children born to low-SES parents (Coleman, 1988; M. A. Martin, 2012). As a result, even though the prevalence of non-intact families was lower among high-SES parents, the stronger negative association between growing-up in a non-intact family and children's educational attainment among these parents served to mitigate SES differences in educational attainment at the population level.

Moreover, when I used an alternative measure of parental SES and compared the educational attainment of children whose parents were in the bottom education quartile to those whose parents were in the top education quartile, I found that even differences in composition no longer accounted for any of the SES differences in children's educational attainment. This was not because differences in the prevalence of non-intact families in the bottom and top education quartiles were not large (in fact, they were very large). It was because, for youth born to parents in the bottom quartile of the education distribution, family structure had no bearing on their educational attainment. These young adults were equally unlikely to graduate from high school, graduate from college, or attain more years of education, regardless of the type of family in which they were raised. This finding raises important questions about the potentially heterogeneous effect of family structure on children's social mobility. Most social mobility studies have not considered how the implications of family structure may vary depending on parents' socioeconomic position. The few studies that have examined this have also found that

family structure plays a much smaller role in the educational and economic attainment of youth from low-SES families compared to youth from high-SES families (Biblarz & Raftery, 1999; M. A. Martin, 2012). These findings warrant further empirical attention in order to understand how and under what circumstances family structure matters for children's attainment in adulthood.

The results of the present study are useful for thinking about the possible implications of policies aimed at encouraging marriage or discouraging unwed pregnancy among disadvantaged men and women (Dion, 2005; Myrick, Ooms, & Patterson, 2009). While reducing the number of non-intact families in the lower half of the SES distribution might serve to reduce inequality in children's educational attainment, it probably would not have a large effect, because growing-up in a non-intact family appears to have more substantial, negative implications for the educational attainment of children born to parents at the top of the SES distribution. Children born to disadvantaged parents—particularly those born to parents with exceedingly low levels of education—are not especially likely to increase their educational attainment regardless of their family structure. Thus, it would likely be more worthwhile to focus on improving factors other than family structure that are limiting the educational attainment of children from disadvantaged families, such as physical health problems and learning disabilities (Case, Fertig, & Paxson, 2005; Loe & Feldman, 2007), neighborhood and school safety (Leventhal & Brooks-Gunn, 2004; Milam, Furr-Holden, & Leaf, 2010), and school quality (Card & Krueger, 1990). Until we address these issues and provide children from disadvantaged backgrounds with opportunities to succeed, changes in family structure are unlikely to have much, if any, impact on children's educational attainment.

Although these counterfactual calculations are useful for thinking about the possible magnitude of the impact of changes in family structure on SES differences in youths' attainment,

the results should not be interpreted as causal. This is because they rely on the unrealistic assumption that we could change the family structure composition of low-SES families while the association between family structure and children's educational attainment remained the same, or conversely, that we could change the association between family structure and educational attainment while family structure composition remained the same. In addition, while the models presented here controlled for a handful of factors that were likely to be related to SES differences in educational attainment and family structure, a number of other factors could have been driving this association. For example, a more complete, causal model would need to control for mothers' mental health status or receipt of public assistance benefits, both of which have been shown to be related to family structure and children's attainment (Meadows, McLanahan, & Brooks-Gunn, 2007; Moffit, 1998; Waldfogel, Han, & Brooks-Gunn, 2002).

Two other limitations are important to bear in mind when interpreting these results. First, this study only considered one indicator of children's wellbeing—their educational attainment in young adulthood. Studies of children's outcomes earlier in childhood, such as their behavior problems or test scores around age 5, have uncovered a larger association between family structure and these outcomes in low-SES families relative to high-SES families (Augustine, 2012; Mandemakers & Kalmijn, 2014). Thus, it is possible that the conclusions from the present study would not generalize to these other indicators of wellbeing. Second, the present study measured parental SES using parents' education level. However, 'socioeconomic status' is typically thought of as a multi-dimensional construct reflecting an individual's position in the societal hierarchy, and does not map on perfectly to education. Although it would have been ideal to incorporate other indicators of parents' social position—such as their wealth, income, or occupation—in my measure of SES, because the NLSY does not contain retrospective

information on these characteristics, and these characteristics are likely to change as a function of family structure, this was not possible.

In sum, existing concerns about how differences in family structure by social class are contributing to diverging destinies for children appear to be somewhat overstated. Although the higher prevalence of non-intact families—particularly single-mother families and highly unstable families—at the lower end of the socioeconomic distribution may be reducing the educational attainment of these children relative to their high-SES peers, the negative implications of growing-up in a non-intact family appear to be much larger for youth at the higher end of the socioeconomic distribution. Children raised by the least educated parents in our society are unlikely to achieve high levels of education, regardless of their family structure. These findings suggest that it would be worthwhile to look beyond policies that encourage marriage for our nation's most disadvantaged parents to policies that more directly address the obstacles inhibiting their children's academic success.

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Table 1: Descriptive Statistics, Overall and by Parental SES

	Overall		Low SES		High SES		SES Dif.
	M or %	(SD)	*M* or %	(SD)	*M* or %	(SD)	
Youths' Educational Attainment							
Years of Schooling	13.77	(2.82)	12.63	(2.54)	14.80	(2.65)	**
Graduated from High School	83.2		73.5		91.9		**
Graduated from College	33.0		15.6		48.8		**
Family Structure							
Intact	49.4		39.1		58.8		**
Stable Single Mother	16.1		24.1		8.9		**
Two Parent to Single Mother	11.3		9.6		12.8		**
Two Parent to Single Mother to Stepfather	6.8		6.3		7.2		
Single Mother to Stepfather	4.3		6.0		2.8		**
Other	12.1		14.9		9.5		**
Race							
White	54.3		38.3		68.8		**
Black	24.8		31.9		18.5		**
Hispanic	20.2		29.4		11.9		**
Other	0.7		0.5		0.9		
Number of Siblings	2.49	(1.92)	2.90	(2.11)	2.11	(1.64)	**
Parents Born in U.S.	82.1		77.6		86.2		**
Mother's Age at Youth's Birth	25.79	(5.27)	24.60	(5.42)	26.87	(4.89)	**
N	4,887		2,317		2,570		

Note: Parental SES (socioeconomic status) measured by median level of parents' education ('Low SES' reflects a high school education or less and 'High SES' reflects some college education or more).

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$: significance levels for two-tailed tests of coefficient differences by parental SES.

Table 2: Regression Results for Youths' Educational Attainment, Separately by Parental SES

	Years of Schooling (OLS Regression Models)					Graduated from High School (Logit Regression Models)							Graduated from College (Logit Regression Models)							
	Low SES		High SES		SES Dif.	Low SES			High SES			SES Dif.	Low SES			High SES			SES Dif.	
	β	*t*	β	*t*		β	exp(β)	z	β	exp(β)	*z*		β	exp(β)	z	β	exp(β)	*z*		
Model 1: Basic Family Structure																				
Family Structure																				
Intact	--	--	--	--		--	--	--	--	--	--		--	--	--	--	--	--		
Nonintact	-0.65 **	-5.67	-1.06 **	-9.76	**	-0.62 **	0.54	-5.60	-1.21 **	0.30	-7.12	**	-0.42 **	0.66	-3.34	-0.80 **	0.45	-8.91	*	
Constant	12.82		13.98			1.68	5.37		2.16	8.64			-1.86	0.16		-0.84	0.43			
Model 2: Detailed Family Structure																				
Family Structure																				
Intact	--	--	--	--		--	--	--	--	--	--		--	--	--	--	--	--		
Stable Single Mother	-1.01 **	-6.94	-1.49 **	-7.91	**	-0.89 **	0.41	-6.64	-1.64 **	0.19	-7.12	**	-0.69 **	0.50	-3.83	-1.05 **	0.35	-6.33		
Two Parent to Single Mother	-0.49 **	-2.62	-0.81 **	-5.25		-0.49 **	0.61	-2.76	-1.11 **	0.33	-5.02	*	-0.34 †	0.71	-1.63	-0.60 **	0.55	-4.72		
Two Parent to Single Mother to Stepfather	-0.54 *	-2.43	-1.01 **	-5.09		-0.41 †	0.67	-1.92	-1.02 **	0.36	-3.77	†	-0.78 **	0.46	-2.62	-0.88 **	0.41	-5.18		
Single Mother to Stepfather	-0.58 **	-2.47	-1.09 **	-3.52		-0.67 **	0.51	-3.23	-1.15 **	0.32	-3.11		0.01	1.01	0.05	-0.73 **	0.48	-2.69	*	
Other	-0.34 *	-2.06	-1.12 **	-6.20	*	-0.39 **	0.67	-2.54	-1.14 **	0.32	-4.70	**	-0.16	0.86	-0.85	-0.86 **	0.42	-5.55	**	
Constant	12.67		13.98			1.56	4.74		2.05	7.77			-1.97	0.14		-0.83	0.44			
N	2,317		2,570			2,317			2,570				2,317			2,570				

Note: Parental SES (socioeconomic status) measured by median level of parents' education ('Low SES' reflects a high school education or less and 'High SES' reflects some college education or more). All models include controls for race/ethnicity, number of siblings, parents born in U.S., and mother's age at youth's birth.

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$: significance levels for two-tailed tests of coefficients.

Table 3: Decomposition of SES Differences in Years of Schooling
(N = 4,887)

	Years of Schooling		Proportion of Difference
Model 1: Basic Family Structure			
Differential			
Low SES	12.43		
High SES	13.55		
Difference (High - Low)	1.12	*	
Compositions			
Non-intact	0.13	**	0.12
Associations			
Non-intact	-0.25	**	-0.22
Interactions			
Non-intact	0.08	**	0.07
Total			
Explained Difference	-0.04		-0.04
Unexplained Difference	1.16		1.04
Model 2: Detailed Family Structure			
Differential			
Low SES	12.26		
High SES	13.53		
Difference (High - Low)	1.27	**	
Compositions			
Stable Single Mother	0.15	**	0.12
Two Parent to Single Mother	-0.02	*	-0.02
Two Parent to Single Mother to Stepdad	0.00		0.00
Single Mother to Stepdad	0.02	*	0.02
Other	0.02	*	0.02
Total	0.17		0.13
Associations			
Stable Single Mother	-0.12	*	-0.09
Two Parent to Single Mother	-0.03		-0.02
Two Parent to Single Mother to Stepdad	-0.03		-0.02
Single Mother to Stepdad	-0.03		-0.02
Other	-0.12	**	-0.09
Total	-0.33		-0.26
Interactions			
Stable Single Mother	0.07		0.06
Two Parent to Single Mother	-0.01		-0.01
Two Parent to Single Mother to Stepdad	-0.00		0.00
Single Mother to Stepdad	0.02		0.02
Other	0.04	*	0.03
Total	0.12		0.09
Total			
Explained Difference	-0.04		-0.03
Unexplained Difference	1.31		1.03

Note: Parental SES (socioeconomic status) measured by median level of parents' education ('Low SES' reflects a high school education or less and 'High SES' reflects some college education or more). Models adjusted for all covariates. Reported numbers may not add to totals due to rounding.

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$.

Table 4: Decomposition of SES Differences in Log Odds of Graduating from High School (N = 4,887)

	Log Odds of Graduating from High School		Proportion of Difference
Model 1: Basic Family Structure			
Differential			
Low SES	1.30		
High SES	1.66		
Difference (High - Low)	0.35		
Compositions			
Non-intact	0.12	**	0.34
Associations			
Non-intact	-0.36	**	-1.03
Interactions			
Non-intact	0.12	**	0.34
Total			
Explained Difference	-0.12		-0.34
Unexplained Difference	0.47		1.34
Model 2: Detailed Family Structure			
Differential			
Low SES	1.17		
High SES	1.55		
Difference (High - Low)	0.38		
Compositions			
Stable Single Mother	0.14	**	0.37
Two Parent to Single Mother	-0.02	*	-0.05
Two Parent to Single Mother to Stepdad	-0.00		0.00
Single Mother to Stepdad	0.02	**	0.05
Other	0.02	*	0.05
Total	0.16		0.42
Associations			
Stable Single Mother	-0.18	**	-0.47
Two Parent to Single Mother	-0.06	*	-0.16
Two Parent to Single Mother to Stepdad	-0.04	†	-0.11
Single Mother to Stepdad	-0.03		-0.08
Other	-0.11	**	-0.29
Total	-0.42		-1.11
Interactions			
Stable Single Mother	0.11	**	0.29
Two Parent to Single Mother	-0.02	†	-0.05
Two Parent to Single Mother to Stepdad	-0.01		-0.03
Single Mother to Stepdad	0.02		0.05
Other	0.04	*	0.11
Total	0.14		0.37
Total			
Explained Difference	-0.12		-0.32
Unexplained Difference	0.50		1.32

Note: Parental SES (socioeconomic status) measured by median level of parents' education ('Low SES' reflects a high school education or less and 'High SES' reflects some college education or more). Models adjusted for all covariates. Reported numbers may not add to totals due to rounding.

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$.

Table 5: Decomposition of SES Differences in Log Odds of Graduating from College (*N* = 4,887*)*

	Log Odds of Graduating from College	Proportion of Difference
Model 1: Basic Family Structure		
Differential		
Low SES	-2.11	
High SES	-1.17	
Difference (High - Low)	0.94 *	
Compositions		
Non-intact	0.08 **	0.09
Associations		
Non-intact	-0.23 *	-0.24
Interactions		
Non-intact	0.08	0.09
Total		
Explained Difference	-0.07	-0.07
Unexplained Difference	1.01	1.07
Model 2: Detailed Family Structure		
Differential		
Low SES	-2.24	
High SES	-1.17	
Difference (High - Low)	1.07 *	
Compositions		
Stable Single Mother	0.11 **	0.10
Two Parent to Single Mother	-0.01	-0.01
Two Parent to Single Mother to Stepdad	-0.01	-0.01
Single Mother to Stepdad	-0.00	0.00
Other	0.01	0.01
Total	0.10	0.09
Associations		
Stable Single Mother	-0.09	-0.08
Two Parent to Single Mother	-0.02	-0.02
Two Parent to Single Mother to Stepdad	-0.01	-0.01
Single Mother to Stepdad	-0.04 *	-0.04
Other	-0.11 **	-0.10
Total	-0.27	-0.25
Interactions		
Stable Single Mother	0.06	0.06
Two Parent to Single Mother	-0.01	-0.01
Two Parent to Single Mother to Stepdad	-0.00	0.00
Single Mother to Stepdad	0.02 †	0.02
Other	0.04 **	0.04
Total	0.11	
Total		
Explained Difference	-0.06	-0.06
Unexplained Difference	1.13	1.06

Note: Parental SES (socioeconomic status) measured by median level of parents' education ('Low SES' reflects a high school education or less and 'High SES' reflects some college education or more). Models adjusted for all covariates. Reported numbers may not add to totals due to rounding.

† $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$.