

Forthcoming in Social Class and Changing Families in an Unequal America
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Chapter 3 – Birth Control Use and Early, Unintended Births: Evidence for a Class Gradient

Paula England, Elizabeth McClintock and Emily Fitzgibbons Shafer (Stanford University)*

Abstract

We document class differences in pathways that lead to early, unintended childbearing. We review past research and present original analysis from the National Survey of Adolescent Health, the Current Population Survey (Fertility Supplement), and the National Longitudinal Survey of Youth. We show that youth from lower class backgrounds (measured by how much education their mothers completed, and their own GPA or college attendance) start having sex at a slightly earlier age. This would not necessarily lead to unintended early pregnancies if they used contraception consistently, but in young adulthood they contracept less than youth from higher class backgrounds. Those from lower class backgrounds do not want any more children than those from higher class backgrounds (all class groups want 2 at the median), but they are more likely to have unintended pregnancies. If they get pregnant, women with lower social class origins are less likely to have an abortion. The class difference in unintended pregnancies appears to have existed for many decades; among women born early in this century, those with low levels of education were more likely to have a premarital conception and, given the historical stigma of premarital pregnancy, we can assume most of these pregnancies were unintended. We discuss three possible explanations of these class differences in sexuality, contraception, abortion, and unintended pregnancy and suggest future research to adjudicate between them. In the economic view, women with lower opportunity costs are less careful about contraception because they (or their partners) have less to lose in future earnings if they get pregnant. Another view posits class differences in beliefs in one's efficacy and in ability to self-regulate one's behavior; these differences may affect consistent contraception. A third view sees social roles such as school enrollment or employment to create identities and social support consistent with birth control use.

*Address correspondence to Paula England, pengland@stanford.edu.

INTRODUCTION

Family patterns have always differed by social class in America. Generations ago, lower or working class individuals married earlier than the middle class, and all classes typically started childbearing shortly after marriage. In the past, less privileged young adults typically had a first birth at about 18-20 years of age; they do the same today except they are often not married (Ellwood and Jencks 2004; Rindfuss et al. 1996). The shotgun marriage—a marriage in response to a premarital pregnancy—has gone out of fashion (Akerlof et al. 1996), yet an unintended pregnancy often galvanizes couples to solidify a several-month-old romantic relationship and even move in together (Reed 2006). About 80% of nonmarital births are to romantically involved couples (England and Edin 2007, Chapter 1), but they typically break up within a few years. Each partner may go on to have another unintended birth with another partner, leading to multiple-partner fertility and complex households. As McLanahan illustrates in this volume, from a child's point of view, this produces many transitions and instability in household composition. The pattern is most pronounced among poor blacks, but non-college-educated whites and Latinos are increasingly following these patterns as well.

Middle class childbearing remains largely in marriage, and is increasingly delayed until well after marriage. As a result, class differences in age at first birth have grown appreciably (Ellwood and Jencks 2004; Rindfuss et al. 1996). Class differences in the instability of children's circumstances have long been present because of class differences in divorce rates, but today such differences are magnified by the less durable unions into which the children of disadvantaged parents are born.

Recent academic discussions of class differences in family patterns focus on the “retreat from marriage,” and many policy discussions suggest the need to encourage marriage in order to reduce instability for less privileged children. Cultural changes have created increasingly high economic and relational standards for marriage (Cherlin 2004). At the same time, the earnings of men without a college degree have fallen in recent decades, creating a situation where the poor are unlikely to ever meet their own economic standards for marriage (England and Edin 2007). The retreat from marriage has undoubtedly increased family instability and complexity, and the increased class gradient in such instability. However, we believe that the retreat from marriage has been overemphasized.

In this paper, we focus on a more causally “upstream” set of causes for class differences in family patterns. As we will show, more advantaged youths start intercourse slightly later, and, as young adults, they use birth control (contraception and abortion) more consistently. As a result, they are much less likely to have early births, or to have unintended births at any age. While early births need not be unintended, and not all unintended pregnancies are early, the two phenomena are empirically linked: a national survey asking women about their births between 1997 and 2002 found that 78% of births to women under 20 resulted from unintended pregnancies, compared to 45% among women 20-24, and 24% among women 25-44 (Kissin et al. 2008). This is probably because few see the teen years as appropriate for child bearing, and because anyone who has a high propensity to unplanned pregnancies because of inconsistent contraceptive use will probably have an unplanned pregnancy shortly after the initiation of sexual activity. As Bongaarts (1978) has pointed out, sex and birth control are the proximate

determinants of fertility. It follows that class differences affecting early fertility must operate through these proximate determinants. Once premarital sex is ubiquitous, class differences in unintended fertility is particularly likely to flow from lack of consistent use of birth control.

Our focus here is on class differences, not race differences. Racial differences in family patterns are well documented in past research. To keep our focus on class, in our analysis we will combine all racial groups, statistically adjusting out of any class differences the amount that reflects the different racial composition of those in various class locations.

Our concept of class is gradational. We are interested in how the plethora of correlated measures of hierarchical position that go into what we typically mean by class or socioeconomic status— income, occupation, education, and so forth—affect behaviors that lead to early, unplanned births. Given this broad view, we will below use the terms “class” and “socioeconomic status” (hereafter “SES”) interchangeably. We recognize that for some outcomes, predictive power is increased if discrete classes are posited (Weeden and Grusky 2005). Here, however, we utilize theories that suggest gradational processes. As we consider behavior that spans late childhood and early adulthood, both the class of one’s family of origin and one’s own emergent social class are relevant, although our analyses will emphasize the former. Most of our own empirical analysis here will use an individual’s mother’s education as the most readily available measure tapping class background, but we will review research using other measures as well.

Our goal is to document and suggest explanations for class differences in early and unplanned births. We will combine review of past research with presentation of our own data analysis. The evidence from past analyses and our own analysis will show that, although their fertility goals early in life are the same as their more privileged counterparts, individuals from lower class backgrounds start having intercourse at a slightly earlier age, use birth control substantially less in their teens and early adulthood, have more teen births, abort less if they have a pregnancy, and are more likely to have unintended pregnancies. After presenting the evidence, we review three theoretical perspectives regarding what it is about class that leads to the behaviors proximate to early, unplanned pregnancies. The perspectives focus on 1) opportunity costs, 2) social roles, and 3) efficacy and self-regulation. We note that current evidence gives us little ability to adjudicate between these perspectives, and recommend that future research focus on such adjudication.

DATA AND METHODS

In addition to reviewing others’ evidence, we provide some illustrative analyses of class differences in the behaviors leading up to early and unintended births. Drawing on three data sets, analyses are presented in a common format. We present class differences in various dependent variables by showing predicted scores for individuals whose mothers have one of three education levels—less than high school, high school, and a 4 year college degree. (In one case, when reporting premarital conceptions from the CPS, we use the respondent’s own education because the data do not provide parental education.) In each case, the predicted scores

for each education level come from a regression entering education along with controls for race (and sometimes other variables), with controls set at their mean value.¹

Interactions by race are common in the literature. While we do not report the results below, we have assessed for each of the predicted values we present that if we take blacks and whites separately (often the number of other groups would not sustain separate analysis), our basic conclusions about an educational gradient holds for both groups (although the magnitude of the association may differ somewhat). Thus, the reader can be confident that, at least in direction, any class difference we talk about can be found in both the black and the white population. Often, though, there are race differences in levels within class, even when there are no differences in direction in the effects of class by race. These race differences in levels are beyond our topical scope here.

Add Health Data²

We use data from the first, second, and third waves of the National Survey of Adolescent Health (Add Health), a nationally representative longitudinal survey of adolescents in grades seven to twelve at the time of the initial interview (Bearman, Jones, and Udry 2004; Chantala 2006). The sample is school-based; 134 public, private, and parochial schools were selected and a sample of 27,000 adolescents was selected from these schools for extensive in-home interviews. Approximately 21,000 of these students completed the in-home interviews. Their parents were also interviewed at home. To collect sensitive information more accurately, students used an audio-computer assisted self interview device (audio-CASI) for several sections of the interview. The initial (Wave I) interviews were collected during the 1994-1995 academic year and the second interviews (Wave II, the first follow-up) were collected about a year later. The third wave of interviews (Wave III, the second follow-up) was conducted in 2001-2002.

In this analysis, all explanatory variables except the respondent's age and college status are measured at the initial interview (Wave I, average age about 14.5). Age at first sexual intercourse is measured in whichever interview the respondent first reports having had sexual intercourse (if ever – about 12% of respondents are virgins in Wave III). Sexual activity and contraception use is measured in both the Wave II and Wave III interviews (at average ages of approximately 16 at Wave II and 21.5 at Wave III) and all other outcomes are measured at Wave III, when the respondents provide a full history of their lifetime sexual and romantic relationships, pregnancies, and births. While analyses of age of first sex are performed for both males and females (using sex-specific models), we restrict analyses of contraception, pregnancy, and abortion to women because men may not always know when their partners are using contraception (particularly hormonal contraception) and may not know about pregnancies with casual partners and/or pregnancies that ended in abortion.

We describe measures below:³

¹ Setting race dummies to their means is a way of getting the predicted score that would be expected on average for a population with the race composition of the sample.

² This research 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 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).

³ With the exception of two variables, mother's education and mother's age at the time the respondent was born, none of the independent variables in this analysis have much missing data. We classify mothers with missing data

Mother's education: This is our key independent variable. We have collapsed the more detailed categories of the original variable to classify mothers of respondents as having less than high school, high school or some college, or being college graduates. Their education is taken from the parent (usually mother) home interview at Wave I, and if not available there, it is taken from the respondent's report at Wave I.

Enrolled or Graduated from College: An alternative independent variable indicating prospective class is whether, at Wave III, when respondents averaged about 21.5 years of age, they were either still enrolled in college or graduated, as opposed to having never gone or quit. This was measured based on questions in Wave III about current enrollment and educational attainment. These results are presented in Appendix Table A-2.

High school grade point average: Another alternative independent variable indicating prospective class is the youth's self-reported grade point average at Wave I (age about 14.5). These results are presented in Appendix Table A-1.

We have five key dependent variables regarding sex, contraception, and early childbearing:

Age at first intercourse: Because individuals are likely to be most accurate in recalling the timing of recent events, we measure age at first intercourse at whichever interview the respondent first reports having had sexual intercourse. By Wave III, at age averaging about 21.5, about 88% of respondents have had sexual intercourse.

Sexual Activity and Contraceptive Consistency: In Wave II and Wave III, we classify respondents as sexually inactive for the past 12 months (sexually inactive includes virgins), as sexually active and "always" using contraception, or as sexually active and using contraception less consistently (or never). We use this three-category classification as a dependent variable in our regression models. We use regression-predicted means for these categories to calculate the proportion sexually active, and the proportion of the sexually active not always contracepting. We restrict this analysis to women.

Abortion: For ever-pregnant women, this indicates whether in the respondent has ever had an abortion (vs. ending in birth or miscarriage). In analysis not shown, we also estimate the probability that a pregnancy ended in abortion (vs. ending in birth or miscarriage). We conduct this analysis for all pregnancies and, in results not shown, for unintended pregnancies. Both measures include any pregnancies before Wave III. We restrict this analysis to women.

Teen Birth: This indicates whether the respondent gave birth to at least one child before age twenty. It is taken from reports at all waves. We restrict this analysis to women.

on education as having "high school or some college" (the modal category) and include a variable indicating that information on mother's education is missing. We classify mothers with missing data on age at birth as being 25 years old when the respondent was born (approximately the median value) and include a variable indicating that information on mother's age at birth is missing. Otherwise, we drop observations when data are missing. After dropping observations missing data, the sample size for the analysis of age at first intercourse is 6,441 women and 5,573 men. In Wave II, sexual activity (whether a virgin and whether sexually active in the past 12 months) and contraceptive consistency is known for 6,465 women and in Wave III 7,290 women provide complete information on sexual activity and contraceptive use. Almost 30% of women have been pregnant at least once, and (after dropping missing data) they provide information on the outcomes (whether ended in abortion) of 4,670 pregnancies. Of these pregnancies, 2,756 were unintended; this is the sample size for the analysis of whether an unintended pregnancy ended in abortion. The sample size for the analysis of whether the women have had a teen birth (coded "no" if they have never been pregnant or their first birth occurred at age 20 or older) is 7,337 women.

Additional variables entered as controls:

Race: All models control for race. Racial groups are non-Hispanic White, non-Hispanic Black, Hispanic, and Other. Race is reported by the respondent and is also evaluated independently by the interviewer (relying on physical indications). We use primarily the respondent's self-report of her or his race, but when it is missing, we use the interviewer's report.

Age: Age is measured in years and is the respondent's age on the day of the Wave III interview.

Mother's age at respondent's birth: We control for the mother's age when she gave birth to the respondent. Mother's age at her first birth (i.e., if the respondent has older siblings) is not known.

Intact Family: This measure indicates whether the respondent was living with both biologic parents, or with original adoptive parents, at the first interview (at average age about 14.5). Parents are considered original adoptive parents if the respondent was adopted by a two-parent family by age 1.

Individual-level models are estimated using weighted data and adjusting for the stratification and clustered sampling design; not making these adjustments could bias the standard errors (Chantala 2006). Whether a pregnancy ended in abortion, which is measured at the pregnancy-level, is clustered by respondent (correcting for the non-independence of observations). Models estimated with unweighted data and without clustering are also consistent with the models that use weighted data and clusters.

To improve our ability to assess causal effects, all time-varying independent variables (except age) are lagged to the previous wave to ensure that predictive variables are measured temporally prior to outcome variables. However, when the outcome variable is a measure of lifetime occurrence, this temporal ordering is not ensured. That is, for cumulative occurrence variables, we use Wave I for controls, but in some cases, the event had already happened prior to Wave I. This is a possibility for the independent variables measuring age at first intercourse, whether pregnancy ended in abortion, and whether the respondent ever had a teenage birth. About 40% of respondents (male and female combined) have had sexual intercourse by Wave I, but only about 20% of those who had had sex at least once had been pregnant by Wave I.

Age at first sexual intercourse is a metric variable so we use a linear regression model when analyzing this outcome. We use multinomial logistic regression for the measure of sexual activity and contraceptive consistency at average ages 16 and 21.5. All other outcomes are analyzed using (binary) logistic regression models. All models include our independent variable of interest, mother's education, as well as controls for the respondent's race and age, the mother's age when the respondent was born, and whether the respondent was living in an intact two-parent family at the first interview. In the model predicting whether a pregnancy ended in abortion, we also include the respondent's age-squared. The values in Table 1 are predicted values from these regressions, where we show predictions for each category of mother's education, setting all controls at their means. The values in Appendix Table A-1 and Appendix Table A-2 are also predicted values from regression models: Table A-1 shows predicted values by respondent's grade point average, setting all controls (including mother's education) at their means, and Table A-2 shows predicted values by respondent's college graduation/enrollment status, setting all controls (including mother's education and respondent's adolescent grade point average) at their means.

Current Population Survey--Fertility Supplements

To explore educational differences in pre-marital conceptions for past cohorts, we use data from pooled 1980, 1985, 1990 and 1995 June fertility and marriage histories in the Current Population Survey (CPS), a large national probability sample. We limit our analysis to white (N=137,850) and black (N=18,079) female respondents.

Female respondents were asked to give marital histories including the dates (month and year) of any marriage and, when applicable, the dates each marriage dissolved (whether through divorce, separation, or widowhood). They were later asked to give the date (month and year) of birth of every biological child up to five children. We subtracted nine months from the date of birth for each child to arrive at the assumed date of conception, and compare it to the date of first marriage to assess if the woman had a conception before her first marriage. Important to note is that we have no information on pregnancies that ended in miscarriage or abortion; premarital conceptions, therefore, are those taken to term only. We note, however, that for most of the earlier cohorts in the analysis, abortion was neither legal nor widely available.

We measure cohort by year of the woman's birth. In our analysis cohort is represented by a series of dummy variables (born before 1925, born in 1925 -1929, born in 1930 – 1934 and so on through those born in 1960-64).

The CPS does not ask respondents about their mother's education attainment. Thus, we use the woman's own education and treat it as the measure of social class available as a predictor of whether she has a premarital conception. A limitation of our analysis is that education is assessed at the time of the survey, while the first birth or marriage that is reported on may have been decades prior to the survey. Thus, education may not be exogenous to conceptions; a pregnancy or birth may have led women to drop out of school.⁴ We present the analysis despite acknowledging this serious limitation because it is the only source we know of that allows analysis of class disparities in premarital conceptions for pre-baby boom cohorts. Education is measured in years, which we convert into three categories -- less than high school (<12), high school graduate (12-15) or college graduate (16 or higher).

To assess effects of education and cohort on having a premarital conception, we estimated continuous-time hazard models predicting the competing risks of having a first conception versus a first marriage. The risk set was women who had not been married and not had a conception that was taken to term. We model age-specific effects using a flexible piece-wise linear spline (Wu, 1996) with knots at age 18, 21 and 25. The models contain dummy variables for race, cohort, and

⁴ A large literature has examined the effects of teen births on whether women drop out of school. The recent sibling fixed-effect literature on effects of early births on women's education suggests that much of the correlation between having an early birth and women's education results from the fact that women on a trajectory to more education are less likely to have such births, rather than that the births cause dropout. These studies show that the educational outcomes of sisters, one of whom had a teen birth and one of whom did not, are much less different than naïve estimates of the effects of early childbearing from OLS regressions that ignore selection (Geronimus and Korenman 1991, 1993; Hoffman et al. 1993). Hoffman and Foster (1997) show that the socioeconomic correlates of early childbearing and nonmarital childbearing are very similar, at least for recent cohorts of women. If these findings for teen births generalize to nonmarital births in both current and past cohorts, it would be doubtful that the effect of a birth in curtailing education would explain most of the education gradient we observe on premarital conceptions. However, to the extent that nonmaritally conceived births do curtail education, our estimates of these educational gradients are upwardly biased.

education. Regressions were unweighted. Setting the race dummy at its mean, we then calculated and report predicted values by combination of cohort and education.

National Longitudinal Survey of Youth 1979 (NSLY79)

To examine education differences in unintended fertility we use the non-Hispanic female sample from the NLSY79, a U.S. national probability sample of individuals age 14-21 in 1979, using waves through 2002.

NLSY79 includes information about the intention status of each pregnancy leading to a birth. After a birth, women were first asked whether they were contracepting at the time they became pregnant and, if not, whether it was because they wanted to become pregnant. They are then asked: “Just before you became pregnant the (first, second, third, etc.) time, did you want to become pregnant when you did?” Births are intended if a woman reported not using contraception because she wanted to get pregnant or said, irrespective of contraceptive use, that she wanted to get pregnant or felt indifferent about getting pregnant at that time. Births are unintended if a woman said she did not want a(nother) baby at the time she got pregnant, but did want a(nother) baby at some time in the future, or if she said she never wanted a(nother) baby. We include all births women reported by the 2002 wave, when sample members were 37-44 years of age and thus had probably completed most of their fertility.

Our analysis here is descriptive, not based on a regression model. (For a hazard model-based treatment of education differences in unintended and intended fertility, see Musick et al. 2009.) Analyses employ sample weights to account for oversampling of African Americans. We show percents of births that were from intended and unintended pregnancies for women whose mothers had various levels of education. We also compare early fertility aspirations for women whose mother’s had different educational levels.

Our key independent variable, the respondent’s mother’s education, was reported by the respondent in the first wave in 1979. Years of mothers’ education were reported in years, which we categorized into three groups: less than 12, 12-15, and 16 or more. For normative schooling transitions, we have labeled these as less than high school, high school graduate (including some college), and college graduate.

We also use the NLSY to examine class differences (measured by mother’s education) in how much respondents believe in their own self-efficacy. The 1979 interview includes an abbreviated (four-item) version of the Rotter Locus of Control Scale. These results are discussed but not shown.

CLASS DIFFERENCES IN BEHAVIOR LEADING TO EARLY, UNINTENDED BIRTHS

Age at First Intercourse

Absent artificial insemination or divine intervention, a pregnancy requires intercourse. Thus, those who begin sex earlier might have earlier births. If there are class differences in age at first intercourse, this might explain some of the class difference in early pregnancies.

Most studies show that kids from higher SES backgrounds are older when they have intercourse for the first time. Our analysis using Add Health data confirms this, but shows that the differences are quite small. Of the 88% who had ever had sexual intercourse by 2001, when the respondents averaged about 21.5 year of age, young men whose mothers had less than a high school education started at age 15.9, those whose moms had completed high school started at 16.2, and sons of college graduates started at 16.5 (results not shown). The analogous ages for women, shown in Table 1, are 16.4, 16.3, and 16.9, so daughters of mothers with less than or just high school are very close, while those with college-educated mothers start slightly more than a half year later. (These are means that have been regression-adjusted for race, mother's age at respondent's birth, and age of respondent in 2001 at Wave III.) Table 1 also shows that at Wave II, when respondents were about 16, those whose mothers graduated from college were less likely to have been sexually active in the last 12 months—23% of them versus over 30% of lower SES girls.

We also tabulated how regression-adjusted mean ages of intercourse debut differ by the youth's grade point average at Wave I (results for girls are available in Appendix Table A-1 and Table A-2; results for boys are not shown). There was a monotonic relationship, with boys in the bottom thirds starting at 15.9, those in the middle third at 16.1, and those in the top third at 16.7; the analogous ages were 16.1, 16.3, and 16.8 for girls. We also examined differences between those who were and were not either enrolled in or graduated from college by 2001, when they averaged about 21.5 years of age. For both sexes, those not graduated or still enrolled had started sex at about age 16 (16.1 for boys and 16.2 for girls), compared to close to 17 for those who were enrolled or graduated (16.7 for boys and 17.0 for girls).

Past research has also found various measures of class background to affect age of first intercourse. Using earlier data from the 1970s, Jessor et al. (1983) showed that youth with lower expectations for academic achievement had sex earlier. Using Waves I and II of Add Health, Harris et al. (2002) show that both fathers' and mothers' education reduce the chance that youth have had sex. (For other consistent findings on parental education, see also Brewster et al. 1993; Manlove et al. 2009; and Miller and Sneesby 1988.) Looking at younger kids, Laflin et al. (2008) found that middle school kids whose mothers have higher education, and who themselves have higher grades or aspirations to go to college are less likely to have had sex. Longmore et al. (2001) also found that mother's education reduced the chances of middle school sex. By contrast, Wu and Martin (2009) find no effect of mother's education on hazard of sexual initiation after controlling for mother's age at first birth.⁵

Youth doing better in school and aspiring to more education, a harbinger of a higher future class location, generally start intercourse later. Wu and Martin (2009) find that a test of cognitive

⁵ Many studies do not contain this control. We could not add it as Add Health data do not include a measure. However, because of this finding, we controlled for the closest thing available to this in Add Health, mother's age at respondent's birth in our models. Given that most women have only 1-3 children, and they are reasonably tightly spaced, this should serve as an indicator of approximately when the mother began childbearing.

skills predicted later initiation. Halpern et al. (2000) find a curvilinear relationship among high schoolers. Very low scoring youth are less apt to initiate sex, but from below the middle of the distribution upward, higher scores predict starting later. Using another data set, Halpern et al. (2000) found that youth with higher test scores were not only less likely to have intercourse, but also less likely to engage in holding hands or kissing, behaviors which pose little risk. They also find that youth with higher grade point averages and who perceive a higher chance of going to college are less likely to have initiated intercourse. Deptula et al. (2006) found that higher test scores increased the perceived costs of sex among adolescents, and those who perceived more costs were less likely to initiate sex, consistent with the notion of opportunity costs.

While lower SES youth start sex earlier in the life cycle, they do not have sex earlier within a partnership. Using the Add Health data on all relationships between Wave I and III (these relationships were happening between age 14 and 21), we found no effect of mothers' education on whether either males or females had sexual intercourse within one week of meeting their partner. Similarly, there was no effect of mother's education on having sex within 2 weeks or 4 weeks. On the other hand, for both males and females, those in the top third of the high school grade point average distribution at Wave I were less likely to move to sex quickly in a relationship (results not shown).⁶

In summary, whether we use measures of class background, or the youth's own prospective educational attainment, it appears that the more privileged start having intercourse—and other sexual behavior—later in the life cycle. However, the differences in age at first intercourse between the child of a high school dropout and a college graduate are only about half a year, and thus should not be exaggerated.

Birth Control: Contraception and Abortion

Earlier sex would not, in principle, need to lead to many pregnancies if contraception was rigorous. In Table 1 we also examine contraceptive use. Although fewer of those with a mother with a college degree were sexually active at Wave II when they were about 16, among those who were those with college educated moms were slightly more likely to fail to contracept always (58% versus 54-55% of lower SES girls, Table 1). On the other hand, when we look at whether the respondent used contraception the *first* time they ever had intercourse (using data all the way to Wave III for those who started later), we find that daughters of more well educated mothers were more likely to contracept (91% of daughters of college graduates compared to 86-87% in the other two groups; results not shown). (Exactly the same figures are found for contraception at young men's first sex; results not shown.)

At Wave III, when women averaged 21.5 years of age, over three quarters of all three SES groups were sexually active in the last year. At this age, although there was little class difference

⁶ Women who had been in the lowest third of the GPA distribution had intercourse within two weeks of meeting the partner 23% of the time, while those in the highest third did so 19% of the time (net of mother's education, race, and age). For men, the comparable figures are 37% and 31%. The large difference between male and female reports is probably a result of men over-reporting and/or women under-reporting.

in sexual activity, there was a strong class gradient on contraceptive use, as shown in Table 1. Among the sexually active women whose mothers had less than a high school education, 58% did not always contracept, compared to 55% of those moms finished high school, and 46% of those whose mothers were college graduates.

Among the sexually active at Wave II (at about 21.5 years of age), young women who had had a higher high school grade point average also were more likely to contracept always, as were those enrolled in or graduated from college at Wave III (60% of the latter, as opposed to 40% of those not enrolled or graduated). (These results are shown in Appendix Table A-2, and are from predicted values from regressions analogous to those shown in Table 1, except that they include controls for the respondent's grade point average and for mother's education, or for college expectations, grade point average, and mother's education.)

Past evidence generally supports the idea of more contraception, conditional on sexual activity, among more privileged youth. Holmbeck et al. (1994) show that high school students with higher test scores had more knowledge of contraception and were more likely to use it at first sex. Brewster et al. (1993) found that girls who had not been held back a grade were more likely to contracept at first sex. Examining males the year after they finished high school, Bailey et al. (2008) found that those who went to college were more apt to use condoms consistently, but that the protective effect of college attendance can be accounted for by high school grade point average and sexual risk behavior during high school. However, in an analysis of 15-29 year old sexually active males, Manlove et al. (2008) found no effect of their parents' education on condom use.

Given these differences in contraceptive use, it is not surprising that Table 1 shows a steep class gradient in whether respondents had ever been pregnant by Wave III when they were about 21.5 years of age: 40-41% of women whose mothers did not have a college degree, but only 21% of those whose mothers had a college degree.

Once a pregnancy has occurred, a class gradient appears in whether young women get an abortion, as we show in Table 1. Of those who had ever been pregnant, the proportion who had ever had an abortion was 13% among those whose mothers didn't finish high school, 21% among those whose mothers had only a high school education or some college, and 35% among those whose mothers went to college.^{7 8} One caution is that we know by comparing number of abortions providers say they give in a year in the U.S. to those reported in surveys that they are

⁷ Another way to look at this class gradient is to use pregnancies as the unit of analysis. Examining any pregnancies reported by Wave III, when women averaged 21.5 years of age, we find that, after controls, those whose moms' had not finished high school had aborted 10% of any pregnancies they had, those with high school educated moms aborted 17%, and those whose mothers were college graduates aborted 30% of their pregnancies (results not shown). Previous grade point average and current college enrollment or graduation also predict being more likely to abort a pregnancy, conditional on getting pregnant.

⁸ In results not shown, we examined how many women aborted when an *unintended* pregnancy occurs (meaning that the woman says that she didn't want to get pregnant when she did). Among women whose mothers did not finish high school who had an unintended pregnancy, 16% aborted, and this was 25% among women whose mothers finished high school only, and 42% among women whose mothers graduated from college. These are predicted values that have been regression-adjusted for race, mother's age at respondent's birth, and age of respondent in 2001 at Wave III. Units of analysis were all pregnancies.

under-reported (Cooksey 1990). If they were more under-reported by lower SES women then the differences here may exaggerate the reality. However, the limited evidence we have does not show monotonic differences by disadvantage. One study compared the socio-demographic characteristics of those reporting abortions in the 2002 National Survey of Family Growth with characteristics from a nationally representative Guttmacher Institute survey of women having abortions in 2000-01, surveyed through providers (Jones and Kost 2007). The comparison suggested that women below the poverty line (who are much more likely to come from low SES families of origin) reported 44% of their abortions, those from 100-199% of the poverty line reported 39%, and those above twice the poverty line reported 56% of theirs. The relationship with women's own education was also nonmonotonic. Those with less than 12 years reported 57%, those with just high school 43%, those with some college 32%, and those with college degrees 54% of their abortions. Thus, while under-reporting is very serious, there does not appear to be a clear monotonic tendency for either the more or less privileged to under-report more.

Past research also has shown a higher propensity to abort if a conception occurs for higher SES women. Brazzell and Acock (1988) show that more career-oriented sexually active adolescent women are more likely to say that if they got pregnant they would have an abortion. Cooksey (1990) shows that, in the 1980s, among young women who got pregnant outside marriage, those whose parents had more education were more likely to abort.

Having an Early (Teen) Birth

Our analysis in Table 1 shows that the education level of a young woman's mother impacts whether she has a teen birth (that is, a birth before age 20). After adjustment for control variables, 16% of women whose mothers lacked a high school degree had a teen birth, 14% of those whose mothers completed high school, and only 6% of those with college graduate moms. This gradient probably results from the combined effects of when sex is started, how consistently contraception is used, and propensity to abort if a pregnancy occurs, each of which we have detailed above. Though not shown in the Table, differences by women's own college status are also dramatic; 16.4% of those not enrolled or graduated at Wave III (average age 21.5) had had a teen birth, but only 3.8% of those enrolled or graduated by Wave III. Here the early births may be either cause or consequence of college attendance and completion.⁹ (See also Morgan, in this volume, on SES differences in age at first birth.)

FERTILITY ASPIRATIONS AND COMPLETED FERTILITY

To this point we've presented evidence that higher SES kids start sex later, contracept more at first sex and in early adulthood, and abort more if pregnant. If all you knew was this, one might imagine that those from lower SES backgrounds simply want more children. Perhaps women destined to undesirable jobs reorient their aspirations to motherhood and simply want more children—even though they are likely to be partnered with poorer men and thus can “afford” children less. If that were the case, then the story might be one of class differences in aspirations

⁹ We control for race, age, mother's education, whether the respondent lived in a two-parent family at Wave I, and respondent's grade point average at Wave I. Of course, here we cannot be sure if having a birth (or not) affected college enrollment and completion, or if being in college made women less likely to have a birth.

for early fertility, not class differences in unintended fertility. Interestingly, the data do not support this. In the NLSY79, in the first, 1979 wave, when women were 14-21 years of age, they were asked how many children they wanted to have in their lives. When we classify women by their mother's education, every education group had a median of 2 children desired. Indeed, this was true among whites, blacks, and Latinas as well. (Results not graphed; from our calculations from the NLSY79; see also Morgan, this volume on this theme.)

As of the mid-1990s, age-specific fertility rates were such that a woman with a high school degree or less would be expected to have 2.1 children in her life, while college graduates would have 1.6 (Yang and Morgan 2003). Thus, despite desiring the same number of children, women who get more education have lower fertility, by about a half a child. In fact, as Morgan (this volume) shows, less educated women are at high risk of having more children than they wanted, while college graduates are at serious risk of having fewer than they said they wanted. Whether the two groups change their aspirations over time, or simply face situations that, in opposite ways, make finding their aspirations difficult to meet is not well understood. What is clear, as we discuss below, is that having more than they set out to among women in lower class locations results from more unintended pregnancies, not more intended pregnancies.

UNINTENDED PREGNANCIES

Our calculations from the NLSY (not shown) indicate that women of different class backgrounds (as measured by their mother's education) do not differ in their total number of intended births—they average 1.2 whether their mothers were high school dropouts, high school graduates, or college graduates. It is unintended births that are the entire source of the fertility difference by education; those whose mothers did not complete high school had .8 unintended births on average, while college graduates averaged only .3 such unintended births. Based on this, Figure 1 shows the proportion of women's births that were unintended by their mother's education. Those with less than a high school degree had 39% of their pregnancies unintended, compared to 29% percent of those with a high school degree, and only 21% of those with a college degree. Using this same data set, and a competing hazard with multiple controls, Musick et al. (2009) use predicted education (based on her parents' education and income as reported in 1979, as well as her 1980 cognitive test score (the Armed Forces Qualifying Test, her educational aspirations, and her education to date) as a determinant of the competing hazards of unintended and intended births. For whites, they find that (predicted) education lowers the risk of unintended but increases the risk of intended births. For blacks, education lowers both risks, but does so much more strongly for unintended births. Although they find (predicted) education to lower unintended births, they do not find wages to lower unintended (or intended) fertility. Thus, overall, the evidence suggests the women's class background as well as their own education reduces unintended childbearing. Most studies of unintended pregnancy focus on women. However, Edin et al., in this volume, provide rich qualitative data from interviews of low income fathers, showing that few of these low SES men report explicitly planned pregnancies.

There is reason to believe that class differences in unintended pregnancies are long standing. Decades-old qualitative research by Rainwater (1960) found many working class and poor couples with more children than they wanted. Operating in an era before the birth control pill, and before sterilization became common, the main means of birth control were condoms and the

diaphragm. Most people in all classes knew about available methods, and money to buy them was not mentioned as the limitation. Nor did opportunity costs seem a factor as few women thought of employment as an option unless income was desperately needed. Despite knowledge of methods, money to buy them, and the seeming irrelevance of opportunity costs, education was nonetheless related to consistency in the use of contraceptives among these married working class couples.

Rainwater's research pertained to marital conceptions, but there is also evidence of a longstanding class gradient on premarital conceptions. Given the strong norms against premarital sex in decades past, and the fact that premarital pregnancies were seen as a crisis necessitating so-called "shotgun marriages," we can safely presume that most premarital pregnancies in decades past were unintended. It is this assumption that makes premarital pregnancies interesting for our purposes here; we can examine the class gradient on premarital conceptions as indirect evidence of a gradient on premarital unintended pregnancies. In Figure 2 we array women by the cohort in which they were born, going back to those born before 1925. The figure shows the proportion in each cohort who had a premarital pregnancy taken to term, separately by the women's educational levels. The premarital pregnancies we record here include those that led to nonmarital births, as well as those leading to "shotgun." (Furstenberg, in this volume, discusses historical changes in whether premarital pregnancies led to marriage.) Here, unlike in analyses above, we use the woman's own education rather than that of her mother to classify respondents; this is because the CPS Fertility Supplement dataset used does not have information on the family of origin of the respondent. In fact, women's education is being reported at the time of the survey, while the premarital pregnancies may have occurred years before the survey. Thus, a causal interpretation that the woman's education affected her sexual or contraceptive behavior must be made with caution; it is possible that the link between education and premarital conception results from having an early birth interrupting women's education, rather than from women on a trajectory to attain less education being more likely to have a premarital conception. As Figure 2 shows, in every cohort, less educated women were more likely to have premarital conceptions.¹⁰ This is at least suggestive evidence that the SES of one's family background—usually a precursor to one's own education—has affected the tendency to have early, unintended births for many decades.

The consistent effect of education on premarital conceptions across cohorts is interesting, perhaps even surprising, given the diversity of situations faced by these different cohorts as regards norms about premarital sexual activity, availability of birth control and abortion, the relative wages of men and women, and expectations regarding of women's employment after childbearing. This consistency of the relationship over time makes us doubt that opportunity costs related to women's wage are the main mechanism. The foregone opportunities of women's

¹⁰ Although we doubt it is the case, it is possible that the education difference in reported premarital conceptions observed in these data simply reflect the greater resources of the more highly educated to conceal or "get rid" of unwanted pregnancies through giving children up for adoption or abortion. As reviewed above, evidence suggests that, among those who get pregnant, young women with more education are more likely to abort (Cooksey 1990). If this is true, our analysis here will underestimate premarital conceptions more for the highly educated than for the less educated. However, the cohorts born before about 1950 had little access to legal abortion. It is possible that higher SES women in early cohorts who got pregnant were more likely than pregnant lower SES women to give their babies up for adoption, and not to report the birth in a survey.

wages is only relevant in contexts where a woman will remain employed if she doesn't have the child, but will drop out or at least reduce her hours and thereby forego earnings if she has a child. In such situations, the higher her earnings, the more she has to lose by a pregnancy. This thesis seems irrelevant to the higher rate of nonmarital conceptions at lower than higher educational levels among early cohorts, because, at least among whites, few women of any educational level planned employment after marriage, so having a child had little opportunity cost in terms of her earnings. Class differences in self-regulation might better explain both whether couples had the self-discipline to abstain from sex in cohorts when strong norms advocated doing so, and whether they have the planfulness to contracept consistently in cohorts after the sexual revolution.

If opportunity cost *is* to explain educational differences in avoiding pregnancy in the early cohorts, we need a broadened notion of the relevant opportunity costs. In the early cohorts, particularly among whites, premarital births often led to a “shotgun” marriage, often interrupting the man's education as well as the woman's. Thus, where the man was on a trajectory toward higher education, interrupting this with an early “shotgun” marriage had high opportunity costs for the family's ultimate standard of living. Where the man was unlikely to get more education, an earlier-than-anticipated pregnancy and marriage had little opportunity cost in economic terms. Given marital homogamy, it was higher SES-background women and their generally higher SES-background partners who faced these higher opportunity costs in the potential reduction of men's lifetime earning power if an early pregnancy caused him to stop his education to start supporting the family. This may have contributed to the scarcity of premarital conceptions among the highly educated in earlier cohorts, as those with more to lose avoided pregnancies by either abstaining from sex or using birth control.

WHAT'S BEHIND THE CLASS DIFFERENCES: THREE THEORETICAL VIEWS TO GUIDE FUTURE RESEARCH

Why would the class background or prospective class location of a youth or young adult affect the outcomes that lead to early, unintended births? We consider three theoretical views that could explain the differences we have reviewed. It is important to bear in mind that they are not mutually exclusive. Moreover, unfortunately, we see only limited evidence from research to date that would allow us to adjudicate between them.

Opportunity Costs

In economists' rational-choice view, decisions are made according to costs and benefits. One has a child only when the expected (lifetime) benefits of having a child now with this partner minus the costs of birth control exceed the costs of childbearing (Hotz et al. 1997). In addition to out-of-pocket costs of clothing, sheltering, and educating the child, the costs of childbearing include opportunity costs—earnings foregone while an adult, generally the mother, takes care of the child. These are the focus of recent economic theorizing on fertility. Consider a situation where the woman would stay home (or cut back to fewer hours of employment) for some period if she were to have a child. In that situation, the more her potential hourly earnings, the more money she (and her family) will forego if she has a child. In this view, less educated women have more children because they have less to lose (in foregone earnings) by taking time away from paid

work for child bearing. At first glance, *unintended* pregnancy seems contrary to the rational-actor assumptions of the theory. But advocates of the opportunity cost theory do not see an inconsistency.¹¹ They point out that there are economic and noneconomic (e.g. “hassles”) costs of birth control. Thus, we can imagine a situation in which, if contraception was costless, one would not to get pregnant, but the opportunity costs of having a child are small enough relative to the costs of contraception that a “rational actor” decides not to contracept, despite having a mild preference for not getting pregnant.¹²

Social Roles

Sociologists often claim that the role makes the person. Research supporting this theory, sometimes called the “social structure and personality” view, has shown, for example, that the occupations requiring complex cognitive manipulations make their incumbents smarter over time (Kohn and Schooler 1983). Applying this general perspective to early childbearing, the hypothesis is that engagement in social roles that discourage early childbearing—such as school enrollment, or having a job—encourages prevention of pregnancy. This view, like the opportunity cost view, predicts that women in school or in a higher paying job will use birth control more consistently, but for a different reason. In the opportunity cost view, those in school avoid a birth more assiduously simply because their education has increased opportunity costs. The “social roles” view sees roles to change behavior through processes other than economic incentives. The way in which “the role makes the person” is that one develops an identity consistent with being in the role (e.g. “I am a student,” “I’m a biologist,” or “I have a job”), confronts expectations associated with the role (e.g. “I’m supposed to focus on school and get a degree in four years” or “I’m supposed to go to school, party, and have fun now—not have kids”), and forms network connections to others in the role who expect and encourage one to follow its expected trajectory. More generally, the view posits that being in certain roles encourages individuals to avoid pregnancies and births if becoming a parent is in a tension with the expectations of the role. Role expectations thus are one way that normative life course sequences are encouraged.

Consistent with this view, women who are enrolled in high school or college are much less likely to get pregnant (Glick et al. 2006; Martin-Garcia & Baizan 2006; Skirbekk et al. 2004; Upchurch et al. 2002; Blossfeld & Huinink 1991). Similarly, being employed reduces the odds of having a birth (Budig 2003). While the social expectations associated with “student” and “career” have the up side of discouraging unintended pregnancies, they also lead many upper middle class women to end up having fewer children than they initially wanted. This is one illustration of what gender and work/family scholars have long pointed out—that many jobs have expectations that implicitly assume a worker with no responsibilities for child bearing. Of course, being in the “role” of student and employed worker also shift opportunity costs; thus, we need clever research designs that will show us whether it is the social expectations and meanings of the role, or the economic incentives, or both that lead these roles to affect behaviors regarding birth control.

¹¹ This is consistent with economists’ tendency to ignore what people say about their motivations and treat behavior as “revealed preferences.” Doing so presumes good self-regulation; this is one critique of orthodox economics by the newer behavioral economics.

¹² This same “cost of time” perspective also predicts that, given that one has a child, women with higher opportunity costs are more likely to stay employed full-time and purchase child care, and data support that mothers with more education are more likely to be employed (England et al. 2009). In this perspective, fertility and employment are jointly chosen.

Efficacy and Self-Regulation

Individuals differ in the extent to which they exhibit the follow-through needed for consistent contraception. For example, to use the birth control pill as prescribed, one must visit a doctor or clinic for a prescription, buy the pills, remember to take them on all appropriate days, and make an appointment for the next medical visit early enough that one doesn't run out of pills. This sort of follow-through necessitates a belief that one can control events through one's own action, as well as the self-regulation to make oneself do so even when it is onerous.

General measures of a sense of personal control have been found to predict abstaining from sex or using condoms if they have sex, especially among girls (Pearson 2006). Measures about one's beliefs in their own efficacy specific to abstinence or contraception also predict abstaining or contraceptive use (Pearson 2006; Longmore et al. 2003).

Class differences in efficacy may cause differences in unintended pregnancy rates, even if the less advantaged, like their more advantaged counterparts, do not want to get pregnant at an early age. While there is no direct evidence we know of on how much of the class links to having sex without contraception is mediated by self-efficacy,¹³ there is evidence that low SES individuals have relatively low "self-efficacy," the belief that one has power to affect things in one's life (Gecas 1989; Mirowsky and Ross 2007; Boardman and Robert 2000).¹⁴ A lifetime of adverse events that one has limited power to change is likely to lead to a lower sense of control in the world. This lowered sense of efficacy may be present even in those situations where one could, in fact, change the outcome. In this case, the sense of low efficacy itself has a causal effect.

To contracept consistently one also needs self-regulation—the self-discipline to engage in behavior which is onerous in the present but pays off later. This will affect contraception since it requires consistent actions that are not gratifying at the time (e.g. making appointments, visiting doctors and pharmacies, taking pills or putting on condoms). Individual roots and consequences of self-regulation have been explored by psychologists (Baumeister and Vohs 2004), and consequences of a similar concept called "planful competence" is explored by sociologist John Clausen (1991). What we lack is a sociological account of the social roots of self-regulation. We hypothesize that the social class of one's family of origin, as well as one's own prospective social class, may affect one's ability to self-regulate. One mechanism may be class differences in whether the parenting style is "concerted cultivation" (Lareau 2003, and this volume). Concerted

¹³ Pearson's (2006) ADD HEALTH analysis finds effects of parental income and education on abstaining from sex even under controls for overall and sex-specific measures of self-efficacy; thus the latter measures do not entirely mediate the class effects on abstinence. She does not find income and education effects when predicting condom use, after controlling these two measures of efficacy, but it is unclear if this means that these measures entirely mediate the class link to condom use, or that there was no class effect.

¹⁴ In results not shown, we explored differences by NLSY respondents' mothers' education in the Rotter index of internal locus of control. Combining men and women, we found differences in the expected direction on dichotomized versions of several items in the scale. For example, 63% of those whose mothers did not graduate from high school, compared to 79% of those whose mothers were college graduates agree more that what happens to them is their own doing (versus they feel they don't have enough control over the direction their life is taking). The analogous percents for feeling certain that one can make plans work were 40% (mom had less than high school) and 65% (mom was a college graduate). Using the scale as a whole, mean levels were monotonically higher for respondents whose mothers had more education.

cultivation may include modeling self-regulation, explaining the importance of it, and serving as an external regulator until self-regulation it is sufficiently developed. While Lareau does not discuss effects on contraception, it is a plausible extension of her perspective.

CONCLUSION

Combining our own analyses and our review of past literature, we have shown that social class background, as measured by one's mother's education, has a powerful effect on a multitude of behaviors that lead up to early and unintended births. Other measures that are harbingers in youth of individuals' own prospective class location, such as grade point average or enrollment in college, have similar effects.

Women and men whose mothers have more education initiate sexual intercourse slightly later. When they do have sex in high school, evidence is mixed on whether they contracept more. But by early adulthood, when most individuals of all class backgrounds are sexually active, women whose mothers had more education are much more likely to contracept regularly. If a pregnancy occurs, women with more educated mothers are more likely to have an abortion. They are much less likely to have a teen birth. If we follow women through to middle age when most all of their childbearing is finished, we find that women with more educated mothers, and women who themselves have more education, have slightly lower fertility, and a much lower proportion of their births from unintended pregnancies. These differences do not come from wanting fewer children, as women of all backgrounds (defined by their mother's education) want a median of 2 children. Thus, those from lower SES backgrounds are more at risk of having pregnancies in situations and at times they themselves did not find appropriate.

The evidence of a class gradient on behavioral patterns affecting early and unintended childbearing is clear. What remains unclear is the mechanisms through which class background or location affects these behaviors. Little of the evidence allows us to adjudicate between the three theoretical perspectives we reviewed; this is an important task for future research. Below we review how our findings could be explained by each of the perspectives.

Those from higher SES backgrounds have a probable trajectory toward education and good jobs. As such they have more to lose than those for whom these outcomes seem unlikely with or without early childbearing. Thus much of the evidence we have reviewed is consistent with the idea that class affects birth control behavior through incentives—opportunity costs. However, it is clear that the relevant opportunity costs are not only women's earnings, as often emphasized in recent literature. As we have shown, premarital conceptions were more common among less educated women as far back as cohorts born in 1925, when few white women planned employment. In those early cohorts, if the opportunity cost of an unplanned nonmarital conception was greater, it would have been because more educated women partner with men with good chances for higher education, and these men's prospects would have been compromised by a shotgun marriage interrupting his schooling and catapulting him into the role of breadwinner. Studying cohorts (from the NLSY) born from 1958 to 1965, Musick et al. (2009) find that, while women's predicted education strongly reduces unintended pregnancies, almost none of that is mediated through wage rates, casting some doubt on the role of opportunity costs.

Individuals are unlikely to avoid early, unintended births without belief in their own efficacy and substantial self-regulation. For some it takes self-regulation to follow what parents usually recommend and abstain from early sex. It takes considerable organization to contracept consistently—often involving appointments, visits, filling prescriptions, and remembering to take pills. The fact that less privileged women often report that they did not want to get pregnant when they did, and yet were not contracepting, suggests that self-regulation or beliefs in the self-efficacy needed to motivate such effort has a class gradient. We reviewed literature showing a class gradient in self-efficacy beliefs, and that such beliefs affect young adults' contraception. Analogous evidence for a class gradient in self-regulation and its possible role in mediating class differences in consistent contraception is needed in future research. We can see the hypothesis that class differences in self-regulation explain class differences in contraception as an alternative to the view emphasizing opportunity costs. Or, it can be incorporated into a broader rational choice view which recognizes that those who have more developed self-regulation skills will find it less costly (in a noneconomic sense) to engage in the discipline of abstinence or contraception.

Being in social roles with expectations against teen sex, pregnancy, or birth may also discourage early sex and encourage birth control among the sexually active. Consistent with this, those women who are in school or hold jobs are less likely to get pregnant. While these findings are also consistent with the opportunity cost view, it is also likely that some of the class gradient results from the networks, norms, and identities associated with these roles, all of which discourage behavior pulling young people into early, unintended childbearing. For example, full-time college students are likely to see having a child as simply “not what college students do”—inconsistent with either the studying or partying dimension of the expected role.

Table 1. Predicted Averages or Percents For Selected Behaviors Related to Early or Unintended Childbearing, By Mother’s Education¹

	Respondent’s Mother’s Education		
	Less than high school	High school graduate or some college	College graduate or higher
At average age ~16 (Wave II)			
% Sexually active in past 12 months	31.5	30.5	23.3
% Sexually active and not always contracepting	16.9	16.2	13.6
% Not always contracepting among those sexually active	54.5	53.5	58.3
At average age ~21.5 (Wave III)			
% Sexually active in the past 12 months	79.7	83.0	78.0
% Sexually active and not always contracepting	45.7	45.0	35.7
% Not always contracepting among those sexually active	57.7	54.6	46.2
Measures of Cumulative Experience by Average age ~21.5 (Wave III)			
Average age at first intercourse (for the experienced)	16.4	16.3	16.9
% Ever pregnant	41.1	39.8	21.3
% Who had an abortion of those ever pregnant	12.9	21.0	34.5
% Who had a teen birth	15.9	14.5	6.1

Source: National Longitudinal Study of Adolescent Health, Waves I, II, and III, 1996-2002.

¹Predicted values from regression that also includes race, respondent’s age, mother’s age at respondent’s birth, and whether respondent lived with both biological or original adoptive parents at age 14.5

Appendix Table A-1. Predicted Averages or Percents For Selected Behaviors Related to Early or Unintended Childbearing, By Respondent's High School Grade Point Average¹

	Respondent's Grade Point Average		
	Lowest 33%	Middle 33%	Highest 33%
At average age ~16 (Wave II)			
% Sexually active in past 12 months	35.9	33.0	23.1
% Sexually active and not always contracepting	22.6	18.9	10.5
% Not always contracepting among those sexually active	62.7	57.0	45.6
At average age ~21.5 (Wave III)			
% Sexually active in the past 12 months	84.7	83.9	78.4
% Sexually active and not always contracepting	51.0	48.7	36.3
% Not always contracepting among those sexually active	60.7	58.4	46.7
Measures of Cumulative Experience by Average age ~21.5 (Wave III)			
Average age at first intercourse (for the experienced)	16.1	16.3	16.8
% Ever pregnant	45.5	38.8	27.6
% Who had an abortion of those ever pregnant	16.7	21.1	24.1
% Who had a teen birth	17.4	12.7	8.6

Source: National Longitudinal Study of Adolescent Health, Waves I, II, and III, 1996-2002.

¹Predicted values from regression that also includes race, respondent's age, mother's age at respondent's birth, whether respondent lived with both biological or original adoptive parents at age 14.5, and mother's education.

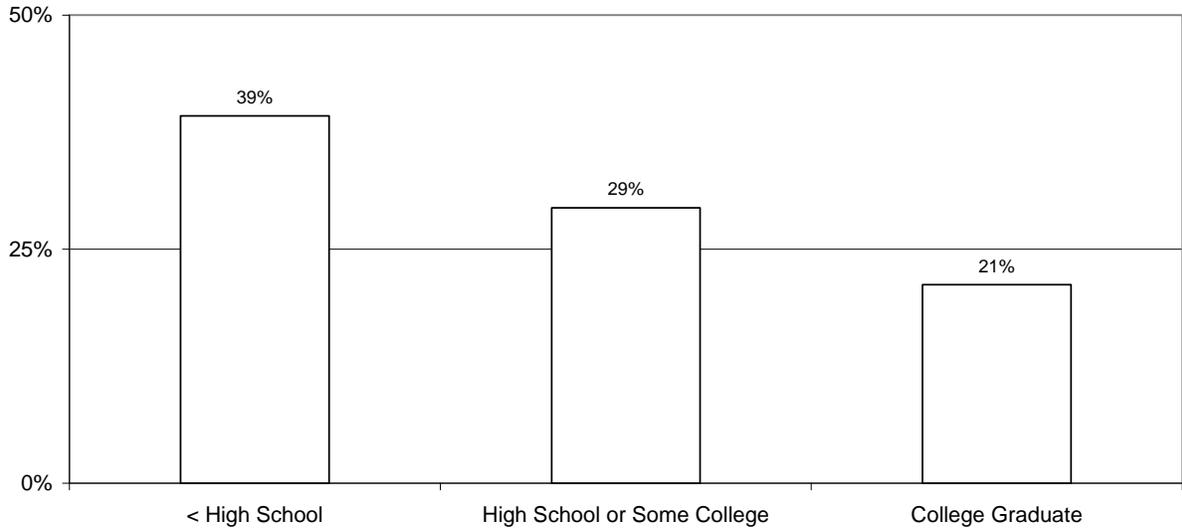
Appendix Table A-2. Predicted Averages or Percents For Selected Behaviors Related to Early or Unintended Childbearing, By Respondent's College Status¹

	College Status	
	Not Enrolled and Not Graduated	Enrolled or Graduated
At average age ~21.5 (Wave III)		
% Sexually active in the past 12 months	83.7	77.3
% Sexually active and not always contracepting	49.9	30.2
% Not always contracepting among those sexually active	60.2	39.6

Source: National Longitudinal Study of Adolescent Health, Waves I, II, and III, 1996-2002.

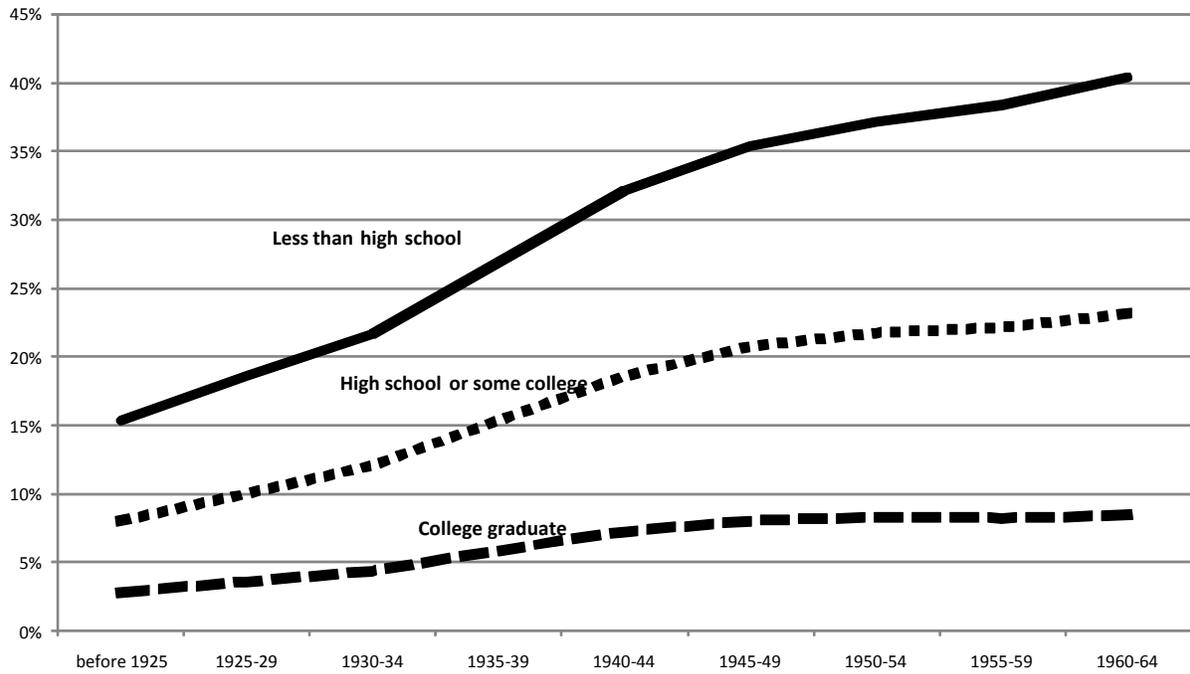
¹Predicted values from regression that also includes race, respondent's age, mother's age at respondent's birth, whether respondent lived with both biological or original adoptive parents at age 14.5, mother's education, and respondent's high school grade point average. We do not show other outcomes that are in Table 1 in this table because the timing of many of those outcomes is such that they are already determined by the time women are in or graduated from college.

Figure 1. Percent of Women's Births Resulting from Unintended Pregnancy, by Mother's Education



Source: National Longitudinal Survey of Youth 1979, 1979-2002 waves. Includes all births by 2002 when respondents were 37-44 years old.

Figure 2. Percent of Women Who Had a Premarital Conception Before Age 25 (and took it to term), by Education and Cohort



Source: CPS June Fertility Supplement, 1980, 1985, 1990, 1995. Predicted values from a complete logit model that includes race and cohort.

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