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Accounting for Socioeconomic Differences in Delaying the Transition to College

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In an age where college-going is increasingly common and the question of postsecondary enrollment for many students and families is often not whether, but where and when, those latter, more nuanced choices are perhaps all the more important. Whether to delay college entry, for example, has received a great deal of attention in the popular press (Clark, 2008; Haigler & Nelson, 2005; MacDonald, 2008; Pope, 2005; Smith, 2008). The internet is also rife with examples (e.g., gapyear.com, realgap.com, and collegebound.net/gapyear). Taking a "gap year" between high school and college is relatively common. Among students who enrolled in postsecondary education for the first time in 1995–1996, nearly one-third waited a year or more after graduating from high school before attending college (Horn, Cataldi, & Sikora, 2005). Anecdotal evidence suggests that in some cases the time may be used to travel through Europe and other distant locales or engage in volunteer work, while for others it is an opportunity to work and save for school (Kristof, 2006; Mohn, 2006; Pope 2005). For example, President Barack Obama's 2009 stimulus package included financial aid changes that—according to at least

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one source—might act as an incentive for low-income students to delay college and await a better deal.

While the debate over whether to take a gap continues, the substantial inequality in take-up rates of a gap year deserves closer attention. In particular, there is a social class gap in the gap year. "Gappers" are nearly six times more likely to come from families in the bottom 20% of the socioeconomic distribution, as compared to those in the top 20% (our calculations, using data from the National Educational Longitudinal Survey, NELS). Thirty-one percent of students in the bottom 20% of the SES distribution delayed enrollment in college for eight months or more after high school graduation, compared to 5% of those in the top 20%. Furthermore, the *length* of the gap also varies, with low-SES students taking, on average, an extra 13 months to enter college, and high-SES students delaying for a far shorter period of only 4.5 months. But even though Robert Bozick and Stefanie DeLuca (2005) have noted those differences and shown that they contribute to observable socioeconomic disparities in degree completion, to the best of our knowledge, no prior studies have explicitly analyzed their significance.

At the same time, a substantial body of research relying on the detailed information contained in students' high school and college transcripts demonstrates that, in addition to ascriptive characteristics such as race and gender, and K-12 academic performance, the *timing* of the transition from high school to college is an important contributor to whether a student completes a degree (Adelman 1999, 2006; Bozick & DeLuca, 2005). For example, data from the National Education Longitudinal Study indicate that 9% of college-goers who delay their initial enrollment complete a bachelor's degree within eight years of high school graduation in contrast to 55% of those who do not delay (our calculations; see Table 1). Using the same data, Bozick and DeLuca (2005) find that "all other factors being equal, students who postpone enrolling in college a year after finishing high school are about 64% less likely to complete a bachelor's degree than those who enroll immediately after high school" (p. 543). In addition, they continue, a series of discrete-time event history models revealed that each additional month between high school and college entry decreases the odds of bachelor's degree completion by 6.5%. Furthermore, their study indicates that delaying college entry does not merely increase the time-to-degree; rather, it appears to independently reduce the likelihood of eventual completion.

In this article, we seek to contribute to a better understanding of why students from different social class backgrounds engage in delay at such different rates. In particular, we examine two potential explanations related to socioeconomic differences in high school academic course-taking and early family formation. We posit that the first could affect students' abilities to gain college admission and perhaps obtain needed financial support, while the latter might affect students' available time, resources, and competing demands.

Studies have shown that socioeconomically advantaged students are more apt to engage in rigorous math and science coursework in high school (Cavanagh, Schiller, & Riegle-Crumb, 2006). Advanced course-taking in those fields is linked to higher rates of college completion (Adelman 1999, 2006). It is thus plausible that part of that relationship is mediated by effects of course-taking on the likelihood of college delay. While high school students have little choice but to take English and history throughout their curriculum, higher-level courses in math and science are often treated as optional, even though they are a virtual prerequisite for admission to most four-year colleges and universities. Thus, engaging in advanced course-taking may independently operate to decrease the likelihood of college delay or be reflective of other student characteristics (such as determination, intent, or even academic competence) which could affect delay. For these reasons, we hypothesize that differential rates of participation in advanced math and science coursework contribute to the observed socioeconomic differences in college delay.

For some students, the transition to college may collide with other facets of the transitions to adulthood, such as marriage and/or childbearing. The Bozick and DeLuca (2005) study found that delaying college is far more common among students who marry or have children prior to college entry. Other studies suggest that patterns of life transitions—in particular, the sequencing of education relative to other life events—vary by social class (Pallas 1993; Rindfuss, Swicegood, & Rosenfeld, 1987; Shanahan 2000). In particular, women from lower socioeconomic strata have children at younger ages (McLanahan, 2004), in many cases without first marrying (Edin & Kefalas, 2005). We therefore hypothesize that the relatively higher incidence of early family formation among students from lower socioeconomic backgrounds also contributes to the likelihood of delaying college, yet the higher tendency of those who marry and/or have children prior to college to delay their entry time does *not* explain the negative effect of delayed enrollment on college completion (Bozick & DeLuca, 2005).

To assess socioeconomic disparities in students' tendencies to take a gap year between high school and college, and the role of academic course-taking and family formation in shaping those disparities, we utilize high school and college transcript data from a nationally representative dataset, the National Educational Longitudinal Survey of 1988 (NELS). The NELS tracked the educational and social trajectories of students from eighth grade until ages 26 or 27, thereby tracing the secondary and postsecondary educational routes of more than 8,000 individuals. Our analyses focus on those students who attended college prior to the survey's completion, and we distinguish between those college-goers who took off at least eight months between high school and college and those who moved on to college more quickly.

THE CLASS GAP IN THE "GAP YEAR"

Social-class differences in the likelihood of delaying college following high school graduation appear to have emerged over time as efforts to broaden college access introduced a more diverse group of students into higher education. Generally, before the GI Bill, students from low-SES families were rarely in college, and any student facing academic or familial difficulties in high school was unlikely to be on the college track. Therefore, it is not surprising that in one of the earliest studies of college delay, which included a sample of approximately 350 men from Michigan (Featherman & Carter, 1976), a comparison of the 20% of men who delayed college for six months or more and those who did not found no evidence that delay was more common among men of lower socioeconomic status.

But as the composition of college-goers changed, more variation in entrance patterns seems to have grown. James Hearn's (1992) study of 1982 high school graduates was the earliest to document the greater propensity of students from socioeconomically disadvantaged families to delay the transition to college. Socioeconomic differences in delay were partially, but not entirely, mediated by differences in high school track, tested ability, and grades. Similarly, a descriptive analysis (Horn, Cataldi, & Sikora, 2005) of 1992 high school graduates, 1996 first-time undergraduates, and 1999 undergraduates, found that greater percentages of delayed entrants are low-income, first-generation, and minority students; they also found that such students take fewer math courses during high school. In that study, one-fourth of students who delayed college had never taken courses beyond remedial math in high school, and only 15% went further than Algebra II. However, the researchers did not conduct multivariate analyses to determine whether socioeconomic differences in delay persisted after accounting for math courses.

In a comprehensive study of the contributors to a delayed transition and related effects on completion among 1992 high school graduates, Bozick and DeLuca (2005) found that, net of other characteristics, delayers were disproportionately from lower socioeconomic backgrounds, had lower standardized test scores, and more often had dropped out of high school and earned a GED instead of a high school diploma. They were also more likely to enter a two-year college and to be married and/or have children. Another analysis of the same 1992 high school graduates (Rowan-Kenyon, 2007) also identified socioeconomic differences in delay behavior and concluded that differences in academic preparation and achievement accounted for approximately 10% of that gap. However, that study measured only math course-taking, not science.

Thus, past studies of college delay indicate a change in the relationship between family SES and rates of delay in the transition to college, and some contribute important information about the reasons for the delay. How-

ever, we are not aware of a study that explicitly focuses on determining the factors contributing to the socioeconomic gap. Furthermore, while prior studies include some discussion of the role of academic and family factors in affecting delay, they do not explicitly and systematically examine the contribution of academic course-taking or family formation to the gap in delay. Finally, only one study measured socioeconomic status as a continuous variable—by definition implying that the relationship between SES and delay is linear—with differences between groups of similar magnitude at all points on the continuum. The exception (Bozick & DeLuca, 2005) employed SES quartiles and found similar relationships between SES and college delay for each quartile.

But a substantial body of literature in education indicates that the biggest differences in student attributes and educational outcomes lie between students from the most advantaged and most disadvantaged families (Bowles, Gintis, & Osborne, 2005; Lee & Burkam, 2002). Moreover, as with income inequality in the United States, the distance between the very top and the very bottom in higher educational outcomes is increasing (Ellwood & Kane, 2000; Haveman & Smeeding, 2006). Thus, we found it important to empirically test for nonlinearities in the relationship between SES and college delay and also to explain the gap between the top quintile and the bottom of the socioeconomic distribution. These two tasks are central in this article.

Academic Course-taking and College Delay

Before attempting to identify an association between the courses students take in high school and their likelihood of delaying college, we first grappled with this question: Why would taking advanced math and science courses in high school affect the timing of a student's transition to college? We hypothesized that there are at least three potential mechanisms at work.

1. First, students who take more math and science may be more likely to be on the college track in high school and therefore to gain admission to college. "At the time students in this study entered college, only two states had high school graduation requirements in math aligned with college admissions requirements" (Kirst & Venezia, 2004). Thus, in most states students who do not exceed what their state requires for graduation (which is often less than Algebra II) are less likely to enroll in college; and if they do enroll, to attend two-year institutions with lower admissions requirements. Acknowledging this potential mechanism, we restrict our sample to college-goers.[1]

[1]In early analyses (available on request), we also controlled for whether a student was admitted to his or her first choice college, the number of math and science credits required by the state of residence for high school graduation, and the percentage of public high school students in the student's state of residence who took Algebra II prior to graduation. The

2. Students who have taken more math and science in high school may be more likely to qualify for merit scholarships to attend college. Affordability is a significant concern in higher education as tuition continues to rise, and there has been a national movement toward merit rather than need-based aid (Heller, 2002). Students who can afford college are more likely to attend. One study found that students who were willing to borrow to finance their education were less likely to delay the transition to college (Ekstrom, 1991). We do not examine this hypothesis because the national survey we used lacked detailed financial aid data.

3. We hypothesized that taking more math and science in high school reflects a greater degree of self-confidence, will, and college knowledge and also contributes to the development of those characteristics (e.g., Ma, 2006). As others have noted, while some courses such as English are required throughout high school, math and science become increasingly optional over time (Stevenson, Schiller, & Schneider, 1994). Participation in optional coursework may reflect student characteristics and abilities that correlate with eventual achievement. Such intangibles are often unmeasured in studies using survey data, even though failing to control for these characteristics may contribute to inflated estimates of the effect of delay on college completion. By accounting for the role of high school course-taking, estimates of the effects of delay on completion might be improved. In this study, we take into account the educational expectation of both the students and their parents at the time the students were in eighth grade, since higher expectations for a bachelor's degree are likely associated with both college-preparatory course-taking and eventual college attendance.

For all of these reasons, then, we hypothesize that students who have taken higher levels of math and science in high school will make a quicker transition to college. Furthermore, given that socioeconomically advantaged students have greater access to higher quality math and science courses (Kirst & Venezia, 2004), we expect math and science course-taking to mediate some of the effect of social class on the timing of the transition to college.

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latter two measures were obtained from data collected by the Council of Chief State School Officers (Blank & Dalkilic, 1992; CCSSO, 1993). We found that students who delayed and those that did not both attended high schools in states with similar requirements. Moreover, while it is reasonable to hypothesize that the majority of the differences in delay behavior by course-taking are attributable to differences in acceptance rates to college (since in this sample, all students did eventually attend college and therefore, by definition, did apply), the difference in the percentage of students accepted to their first-choice college is fairly small (three percentage points). Thus, there are no statistically significant differences by socioeconomic status in those measures among students who do attend college, they did not contribute to our understanding of the gap, and they did not improve our model fit. Thus, we do not include them in the models presented.

Transitions: College and Adulthood

For many individuals, the transition to college occurs at the same time that they emerge into adulthood. While the majority of young adults are increasingly postponing marriage and childbirth until after they finish their postsecondary education, in some cases those life events precede initial college enrollment. Moreover, as Arnett (2004) notes, middle-class students often have more opportunities than working-class students to explore their emergent adulthood prior to creating their own families.

Most studies on postsecondary education, marriage, and childbearing emphasize the positive influence of higher education on the later timing of family formation but do not examine the extent to which earlier family formation affects the timing of the transition to college. What is clear from existing research is that taking on new family roles has long been linked to interruptions in schooling and that better-educated adults are more likely to postpone marriage and childbirth (Marini, 1987; Martin, 2000). Pre-college childbearing in particular may exert an indirect effect on college completion by delaying college entry, simultaneously reducing a woman's likelihood of attending college *and* reducing the chances that she will attend immediately following high school. As McLanahan notes (2004), while the median age for motherhood is increasing among the most advantaged women, it is steady or flat among less-advantaged mothers. Should this difference result in similar gaps in college completion, it also may perpetuate today's observed socioeconomic gaps in college attendance, delay, and completion among the next generation.

Data and Methods

This study uses data from the National Educational Longitudinal Survey of 1988 (NELS) to examine the probability of delayed enrollment among 1992 high school seniors who went on to attend college prior to age 27. We employed several filters to create the analytical sample. First, among those students who participated in the final wave of the survey which took place in 2000 (n = 12,144) we selected only students who participated in the second, third, and fourth waves of NELS (n = 11,914) to ensure that we had complete data on high school course-taking and college enrollment. We dropped American Indian students due to small sample sizes (n = 156), deleted 631 cases in which a student had not earned a high school diploma or GED, and also excluded the 1,854 students who did not attend college. Finally, we deleted all cases with missing data on the dependent variable, delay. The final sample size is 8,523. That sample includes 850 students from the bottom 20% of the SES distribution (based on a distribution when the students graduated from high school), and 2,165 students from the top 20%.

The differential representation of those two groups in this sample reflects socioeconomic stratification in college-going.

Dependent Variable

The appendix to this article includes the description and coding of all of the variables we used in our analyses. Our measure of college delay is a dichotomous variable indicating whether a student delayed college entry for eight months or more following high school graduation.

Bozick and DeLuca's (2005) study distinguishes among three groups rather than two: no delay, short delay (enrollment within seven months of high school graduation), and long delay (enrollment seven months or more after finishing high school). In preliminary analyses (available upon request), we also examined the data for differences among those students who delayed for a short (8–20 months) versus long (more than 20 months) time. We found that, while the length of delay is somewhat associated with the odds of college completion, the salient contributors to delay and the social class gap in delay behavior do not vary significantly by length of delay.

According to multinomial logistic regression analyses, the only significant factor predicting short versus long delay is family formation, particularly whether a student is married before enrolling in college. We interpret this correlation to mean that, while other factors shape the decision to enroll in college immediately after high school, once the decision to delay is made, only family formation influences the actual length of the delay. According to this definition, 16% of students in the full sample delayed college, and the average length of delay was eight months.

Independent Variables

In preliminary analyses (available on request), we examined several measures of math and science course-taking in high school. We began with the total number of high school credits in math, a continuous measure. But given that both the level of courses taken, as well as the sheer number of courses, was hypothesized to affect delay, we next included measures of (a) the highest level of math completed, and (b) whether the student took courses at or above the level of Algebra II. Our results indicated greater variation in whether students reached Algebra II or beyond and that, in this sample of students who eventually attended college, whether a student took Algebra II was the most important factor for delay.

With regard to science, we first examined the total number of high school credits in science, a continuous measure. Second, we measured the total number of Carnegie units in a core lab science (biology, chemistry, and physics). Third, we included a dummy variable indicating whether a student took at least one core lab science course, which, we determined, was the most powerful indicator of delay.

Thus, to achieve a parsimonious model, we included one measure each of math and science courses in high school: the first indicating whether a student took at least Algebra II, and the second indicating whether a student took at least one lab science course in biology, chemistry, or physics. In our full sample, 72% of students went at least as far as Algebra II in math, and 69% took at least one core lab science course.

Students' experiences in K-12 education are not well measured by coursework alone; therefore we included an indicator of whether a student attended a public or private high school, as well as three measures of performance, including grade point average and 12th-grade test scores. Since advanced course-taking is partly predicted by earlier academic performance, we also controlled for students' eighth-grade mathematics test scores.

Family background characteristics shape educational transitions in many ways, and therefore we included controls for gender, race, and socioeconomic status. Understanding that the expectations of both parents and students for college help to shape the programs that students follow in high school, we control for whether the students and the parents expected (when the student was in eighth grade) that the student would eventually earn a bachelor's degree.

Finally, we measured family formation by comparing the date of initial college entry with the date of first marriage and/or first childbirth, included in the dataset. Three percent of the full sample was married, and 4% had children prior to college entry.

For individual cases for which data on the independent variables were missing, we used the sequential regression imputation method to impute missing values (Raghunathan, Solenberger, & Hoewyk, 2002). In this model, we used a normal linear regression to impute the missing values for continuous variables, a logistic or generalized logistic model for categorical variables, and a Poisson regression model for count variables. A comparison of imputed versus non-imputed results did not reveal any bias as the result of that process.

Methods

The socioeconomic gap in college delay might be attributable to differences in student characteristics or to the way in which outcomes among students from different backgrounds are affected those characteristics. For example, lower rates of college delay among high-SES students compared to low-SES students could be due to differences in *rates* of taking Algebra II or to differences in the *effect* of Algebra II on college delay. In other words, upper-class students may be more likely to attend college directly after high school either because they took more advanced courses or because advanced

course-taking is a stronger determinant of delay for upper-class students than for lower-class students.

Thus, we began our analysis by examining the predictors of college delay by estimating a full logistic regression model for all students, which includes an indicator of socioeconomic status. We estimated blocked models—entering one set of measures at a time—so that we might observe which characteristics mediate the relationship between SES and delay. Recognizing the possibility that comparisons of the unstandardized SES coefficient across nested models might be inadvisable due to changes in the variance structure, we also calculated y-standardized coefficients (Mare 2006). The results did not change in any meaningful way; thus we present exponentiated unstandardized coefficients for ease of interpretation. We also examined the relative importance of the factors included in our models in predicting delay in our full sample.

Next, we tested for socioeconomic differences in the determinants of college delay by estimating a logistic model separately for high- and low-SES students and comparing the magnitude of determinants of delay. NELS used a complex sampling design with the sampling frame consisting of eighth-grade classrooms rather than students, and students had unequal probabilities of being tracked during the transition from high school to college and of participating in the postsecondary transcript study. To account for this sampling design, we appropriately weighted all analyses and adjusted standard errors using STATA's svy commands (Broene & Rust, 2000).

Next, to examine the contributions of academic course-taking and family formation to the social class gap in delay, we estimated the total contribution of differences in the complete set of variables included in the full model to the observed social class gap in delay, as well as the contribution of group differences in specific variables. We do so by utilizing an extension of the Blinder-Oaxaca decomposition developed by Fairlie (2006).[2] Such decompositions are most often used in studies of the gender gap in wages but have also been used in analyses of educational attainment (e.g., Jacob, 2002).

RESULTS

1. What students are most likely to delay college entry? We begin with an examination of the characteristics distinguishing students who delayed college prior to enrollment with those who enrolled without delay. (See Table 1.) As noted earlier, in this sample 16% of students delayed their entry to college following high school. The likelihood of college delay varies inversely

[2]We could not perform a traditional Blinder-Oaxaca decomposition since college delay is a dichotomous outcome; Fairlie's extension adapts that technique to non-linear outcomes.

TABLE 1

MEANS FOR VARIABLES USED IN ANALYSES, BY SAMPLE AND DELAY

Variable	Full Sample *Total*	Full Sample *Delayed PSE*	Full Sample *No Delay PSE*	SES Quintile *Bottom 20%*	SES Quintile *Top 20%*
Dependent Variable					
delayed college (0= no)	0.16	1	0	0.31	0.05
length of delay (in months)	8	32	3	13	4.50
Ascriptive Characteristics					
male	0.46	0.49	0.46	0.41	0.49
race/ethnicity:					
White (reference)	0.71	0.67	0.72	0.41	0.79
Black	0.08	0.11	0.08	0.15	0.04
Hispanic	0.12	0.17	0.11	0.34	0.05
Asian	0.09	0.05	0.09	0.10	0.12
socioeconomic status:					
1st-20th percentile (low)	0.12	0.22	0.10	--	--
21st-40th percentile	0.16	0.25	0.15	--	--
41st-60th percentile	0.20	0.23	0.19	--	--
61st-80th percentile	0.23	0.21	0.23	--	--
81st-100th percentile (high; ref)	0.29	0.09	0.33	--	--
Educational Expectations					
parents expected BA	0.73	0.48	0.75	0.41	0.94
student expected BA	0.79	0.58	0.81	0.54	0.93
Family Formation					
married	0.03	0.10	0.01	0.06	0.01
has child(ren)	0.04	0.14	0.02	0.10	0.01
K-12 Education					
8th grade math score	51.79	43.35	53.01	42.95	57.41
public high school	0.84	0.94	0.82	0.97	0.68

Table 1, cont.

Variable	Full Sample *Total*	*Delayed PSE*	*No Delay PSE*	SES Quintile *Bottom 20%*	*Top 20%*
high school GPA	2.86	2.43	2.94	2.56	3.12
12th grade test score	160.52	144.96	162.27	139.97	172.88
Academic Coursetaking				.	
advanced math	0.72	0.42	0.77	0.48	0.89
core lab science	0.69	0.37	0.75	0.44	0.87
degree completion (BA or more)	0.47	0.09	0.55	0.19	0.75
Sample size	8523	1406	7117	850	2165

with socioeconomic background, such that students in the upper brackets of the distribution are far less likely to delay college compared to students in the bottom brackets of the distribution. In this sample, 31% of low-SES students delayed college, compared to only 5% of high-SES students. As noted earlier, the length of delay varies by SES as well, ranging from 4.5 months for students in the top fifth of the SES distribution to 13 months for students in the bottom fifth.

Students who delay college enrollment are more likely to be male, Hispanic, and come from low-SES family backgrounds. As eighth graders, they are far less likely to expect to eventually earn a bachelor's degree, and their parents are also less likely to expect them to earn that degree. These lower expectations may be reflected in their academic performance in high school. Students who delay college entry have lower average test scores in both eighth and 12th grades, and lower average grade point averages. They are more likely to have attended a public high school.

Students who delay college are also distinguished by their high school math and science courses. Only 42% of students in this sample who delayed college took Algebra II in high school, compared to 77% of those who did not delay. The gap is even larger with regard to core lab science: 37% of delayers took a core lab science, compared to 75% of non-delayers.

A non-timely transition to college is also more common among those students who are married and/or have children prior to college entry. In this sample, 10% of those students who delayed college were married before they initially enrolled in college, and 14% had children; in comparison only 1% of non-delayers were married and only 2% were parents.

Table 1 also distinguishes between the characteristics of students in the bottom and top 20% of the socioeconomic distribution. Here, several notable differences emerge which may contribute to the socioeconomic gap in college delay. Expectations for earning a bachelor's degree are much more common among both high-SES parents and students, compared to low-SES students. High-SES students are also more likely to attend a private high school and to have higher test scores and higher GPAs. Furthermore, students from the top quintile have much higher rates of enrollment in advanced math (89% versus 48% of low-SES students) and core lab science in high school (87% versus 44%). In contrast, low-SES students are far more likely to marry and/or have children prior to college entry.

In summary, the descriptive statistics indicate that students who delay college differ from students who do not delay in key respects. Low-SES students are far less likely to take advanced courses in high school and are far more likely to start a family prior to college. Thus, these statistics indicate that differences in course-taking and family formation may contribute to the observed 26 percentage point gap in college delay among students in the top 20% of the SES distribution compared to students in the bottom 20%.

TABLE 2

RESULTS OF LOGISTIC REGRESSION: PREDICTORS OF COLLEGE DELAY

	1	*2*	*3*	*4*	*5*	*6*
Socioeconomic status:						
1st-20th percentile (low)	5.914*	6.675*	3.733*	3.284*	2.324*	2.243*
	(0.287)	(0.270)	(0.326)	(0.338)	(0.362)	(0.335)
21st-40th percentile	4.032*	4.108*	2.606*	2.469*	1.875*	1.834*
	(0.259)	(0.252)	(0.286)	(0.290)	(0.312)	(0.288)
41st-60th percentile	3.196*	3.230*	2.309*	2.166*	1.711	1.743*
	(0.286)	(0.281)	(0.298)	(0.304)	(0.329)	(0.305)
61st-80th percentile	2.696*	2.673*	2.107*	1.960*	1.629	1.560
	(0.285)	(0.280)	(0.289)	(0.296)	(0.297)	(0.280)
Race and gender	No	Yes	Yes	Yes	Yes	Yes
Educational expectations	No	No	Yes	Yes	Yes	Yes
Family formation	No	No	No	Yes	Yes	Yes
K-12 Education	No	No	No	No	Yes	Yes
Academic coursetaking	No	No	No	No	No	Yes
Decomposition						
Probability of delay: Top SES quintile	0.054					
Probability of delay: Bottom SES quintile	0.315					
Difference	0.261					
Total explained		5.13%	15.44%	16.99%	19.38%	19.80%

NOTE—The column values are odds ratios. Standard errors are in parentheses.
*p<.05 (two-tailed tests)

2. How do academic course-taking and family formation affect the likelihood of delay? Table 2 presents the results of a blocked regression designed to assess changes in the relationship between socioeconomic status and college delay, as other factors are controlled for. Column 1 shows the unconditional gap, which indicates that low-SES students are nearly six times as likely as high-SES students (the model's referent group) to delay college. In Columns 2–6 we add in potential explanatory variables. Notably, once race and gender are taken into account, the gaps between high-SES students and those in the bottom three quintiles of the distribution actually increase. This means that the "class gap" in the "gap year" is greater within groups than between groups.

In other words, the SES differences in rates of delay are greater *among* women, *among* men, and *within* racial groups. However, when taking educational expectations into account (Column 3) the SES gap declines considerably; and when measures of family formation are accounted for (Column 4), the gap declines even further. Indeed, controlling for pre-college rates of marriage and childbirth alone reduces the odds of delay for students in the bottom quintile compared to the top quintile by 12.5%. The odds are further reduced in Columns 5 and 6 when K-12 education and academic course-taking are controlled for. This finding suggests that, among students from the same racial and gender groups, with similar educational expectations, rates of family formation, K-12 education and course-taking, the differences in delay between low- and high-SES students are on the order of two times—rather than six times—greater.

The results in Table 2 also indicate some nonlinearities in the importance of these factors in explaining the socioeconomic gaps in delay; that is, the changes in odds ratios from one column to the next vary depending on the comparison SES quintile examined. For example, controlling for family formation reduces the odds of delay less for students in the 21st–60th percentiles, compared to students in the 1st–20th percentiles. Furthermore, there is no appreciable difference between students from the 61st to 80th percentile, compared to students from the 81st–100th percentile of the SES distribution, once the factors in these models are controlled for.

3. Do the effects of course-taking and family formation on delay vary by social class? To distinguish the role of course-taking and family formation in predicting college delay from other influences on delay and to test for SES differences in those predictors, Table 3 presents the results from a logistic regression estimated for the full sample, and then separately for low-SES and high-SES students. Three findings from these models merit special attention.

First, the odds ratios from the full model clearly indicate that students who marry before college or have a child before college substantially increase their likelihood of delay. While others have noted these relationships in the past

TALBE 3

RESULTS OF LOGISTIC REGRESSION: PREDICTORS OF COLLEGE DELAY BY SES QUINTILE

Variable	*Full Sample*	*Bottom Quintile*	*Top Quintile*
Socioeconomic Status			
1st-20th percentile (low)	2.243 *	—	—
	(0.335)	—	—
21st-40th percentile	1.834 *	—	—
	(0.288)	—	—
41st-60th percentile	1.743 *	—	—
	(0.305)	—	—
61st-80th percentile	1.560	—	—
	(0.280)	—	—
Ascriptive Characteristics			
male	1.332 *	1.168	1.791
	(0.139)	(0.265)	(0.382
race/ethnicity:			
Black	1.035	1.802	1.332
	(0.266)	(0.379)	(0.695)
Hispanic	0.530 **	0.516	0.370
	(0.204)	(0.331)	(1.098)
Asian	0.610	0.399	1.099
	(0.272)	(0.502)	(0.474)
Educational Expectations			
parents expected BA	0.728	1.336 *	0.436 *
	(0.176)	(0.256)	(0.621)
student expected BA	0.753	1.171	0.522
	(0.234)	(0.303)	(0.502)
Family Formation			
married	4.666 ***	2.803	15.394
	(0.330)	(0.455)	(1.693)
has child(ren)	2.578 **	2.100 *	20.294 *
	(0.363)	(0.500)	(1.040)
K-12 Education			
8th grade math score	1.005	0.998	0.995
	(0.006)	(0.011)	(0.012)
public high school	1.603	2.726	0.921
	(0.330)	(0.786)	(0.484)
high school GPA	0.646 ***	0.979	0.638
	(0.130)	(0.244)	(0.277)
12th grade test score	0.993	1.007	1.006
	(0.004)	(0.007)	(0.010)
Academic Coursetaking			
advanced math	0.795	0.569	0.339
	(0.195)	(0.372)	(0.398)
core lab science	0.416 ***	0.426*	0.186*
	(0.174)	(0.364)	(0.313)
constant	1.567	0.103 *	1.971 *
	0.723	(1.242)	(1.364)

Variable	*Full Sample*	*Bottom Quintile*	*Top Quintile*
Number of observations	852	3850	2165
Population size	2025254	213929	590427
Pseudo R-squared	0.1921	0.1137	0.1891
F-statistics	23.89		
F-test of equivalence of regressions		F=2.44 (p<0.000)	

NOTE—The column values are odds ratios. Standard errors are in parentheses.
In full sample * p<.05 **p<.01 ***p<.001
In unpooled samples *indicates the coefficients are different at p<.10

(e.g., Bozick & DeLuca, 2005), our results are especially informative because they indicate independent associations of both marriage and childbirth with delay. Furthermore, the separate regressions for students in the bottom and top SES quintiles indicate that, while marrying before enrolling in college is associated with a greater likelihood of delaying college, that finding is true regardless of a student's socioeconomic status. On the other hand, having a child before college affects the timing of enrollment differently for low-SES and high-SES students. Surprisingly, having a child prior to college increased the odds of delay 20 times for high-SES students but only two times for low-SES students. This seemingly odd finding may be attributable to the fact that all of the students in this study are college-goers. Low-SES students who have a child before enrolling in college may be more likely to forgo college entirely—and among those who do decide to attend other factors may figure more heavily in exactly when they attend. High-SES students are, overall, less likely to have a child before college (only 1% of the students in this sample) and are more likely to attend college. Thus, childbirth (a more uncommon event in their social mileau) may figure more prominently in determining when (rather than whether) they enroll in college.

Apart from family formation, we also observe a substantial reduction (60%) in the likelihood of delay among students who took rigorous science coursework in high school. That relationship also varies by socioeconomic background, such that high-SES students who take science are 80% less likely to delay college-going, while low-SES students are 57% less likely to delay if they engage in the same behavior. These associations are net of math course-taking; among students who took a core lab science, differences in math course-taking do not appear to affect delay. In other analyses (available on request), we tested for interactions between SES and course-taking, SES

and family formation, and course-taking and family formation. None of the interaction terms were significant, nor did they improve the model fit.

Finally, the separate regressions by SES quintile indicate a curious difference in the role of parental expectations in shaping college delay. Net of other characteristics, higher parental expectations do not predict a greater likelihood of delay on average for the population of students in the lowest and highest SES quintiles; however, there are statistically significant differentials in the magnitudes of those point estimates. Specifically, a low-SES student whose parent expects him or her to earn a bachelor's degree is 33% more likely to delay college, compared with other low-SES students whose parents do not have that expectation. In contrast, we see the opposite for high-SES students. A student whose parent expects him or her to earn a bachelor's degree is 56% less likely to delay college. This finding is robust; the same relationships exist regardless of when parental and student expectations are measured during high school.

4. Which student characteristics appear to contribute to the "class gap" in delay? At the foot of Table 2, we include the results of a decomposition designed to assess the extent to which the factors included in our model help to explain the gap in college delay between the top and bottom SES quintiles. These factors explain nearly one-fifth of the 26 percentage point gap in delay between low- and high-SES students. The empirical evidence presented consists of (a) changes in the SES coefficients across the columns in Table 2; (b) nonequivalence of the separate regressions by SES quintile and the difference in observed coefficients in Table 3; and (c) results of the decomposition. We find that a substantial portion of the socioeconomic gap in college delay is explained by socioeconomic differences in family background, educational expectations, family formation, and academic experiences and course-taking. Furthermore, there is also some evidence that, while differences in characteristics contribute to the gap, responses to those characteristics (e.g., differences in the magnitudes of coefficients) also play a role. For example, the decomposition results indicate that accounting for differences in rates of family formation explains about 1.5% of the gap; and the regression results indicate that students in the two SES groups are affected very differently by having a child before college. Therefore, while other studies (e.g., Bozick & DeLuca, 2005) indicate that delaying college exerts an independent effect on college completion net of family formation, it is also clear from these results that family formation is independently associated with the likelihood of delay and contributes to the class gap in delay.

Discussion and Conclusions

Socioeconomic differences in college access and success are of substantial concern to contemporary policymakers and practitioners, as a college edu-

cation is increasingly viewed as a prerequisite for admission to the middle class (Haveman & Smeeding, 2006). But while much attention has been paid to whether a student attends college, and whether she or he finishes, less attention has been paid to the timing of entry. Recent studies (e.g., Bozick & DeLuca, 2005), therefore provide important information about whether delay really matters for eventual college success.

As noted earlier, the popular press frequently writes about students who take a gap year and the many programs arising to serve them. It is troubling that so many of those articles neglect the significant socioeconomic differences in who experiences the gap year and in what ways. It is quite possible that socioeconomically advantaged students are accruing additional advantages during their time off, while socioeconomically challenged students are experiencing a delay for less positive reasons.

Our study is among the first to more closely examine the roots of the class gap, in this case focusing on two areas in which low- and high-SES students differ: in what courses they take in high school, and in whether they marry and/or bear children before entering college. The first set of factors is clearly the more policy-amenable. Many states are currently taking action to increase the math and science course requirements for high school graduation (Kirst & Venezia, 2004), and this study provides some evidence that students who go further in science are less likely to delay college. While differences in rates of science course-taking appear to contribute to the class gap in college delay, it is high-SES students, rather than their low-SES counterparts, who appear to benefit more. Thus, it is unclear whether a move toward requiring higher levels of science courses for graduation would help to close the gap in delay.

Having a child and marrying prior to college entry are behaviors decidedly more common among students from poorer backgrounds, and those same students are less likely to expect to earn a bachelor's degree. These early transitions to adulthood clearly increase the chances of college delay and explain a substantial portion of the class gap in delay. Reasons for the earlier onset of motherhood among low-income women, often unaccompanied by marriage, are explored in great detail elsewhere (e.g., Edin & Kefalas, 2005), but rarely do such discussions interact with considerations about college-going. Further explanations about how educational decisions, career decisions, and experiences of family formation interact, perhaps based on qualitative research, would be an invaluable contribution to the literature.

Additional research is also needed to understand how students from different backgrounds experience a period of delay between high school and college and what activities they participate in during this period of delay. Descriptive accounts in newspapers and novels are suggestive, but they do not sufficiently illuminate this complex issue. Should we work to reduce the time between high school and college for all students, no matter what? Or

might efforts be more effectively targeted at specific groups who are more at risk of delaying college and spending that period of time in a way that is likely to inhibit eventual college completion? Our lack of answers at this time is indicative of a need for much more research.

APPENDIX

VARIABLES, DEFINITIONS, AND CODING OF VARIABLES

Variable	*Definition and Coding*
Dependent Variable	
Delay of college	Indicator of delay between time of high school graduation and college entry: 0=no delay (entered within 7 months) 1=delay (delayed more than 8 months)
Ascriptive Characteristics	
Male	Dichotomous indicator of gender, coded "1" if student is male
Race	Indicator of race/ethnicity, three categories (Black, Hispanic, Asian) entered as dummy variables with 0=White
Socioeconomic status	Composite measure of socioeconomic status, derived from parental education, income, occupation as of 1992; coded in quintiles based on distribution in 1992; top quintile is referent category.
Educational Expectations	
Parents expected BA	Dichotomous indicator of parental expectation of bachelor's degree attainment, as of 1988 (student in 8th grade)
Student expected BA	Dichotomous indicator of student expectation of bachelor's degree attainment, as of 1988 (student in 8th grade)
Family Formation	
Married	Dichotomous indicator of whether a student got married prior to college entry, coded "1" if yes
Has child(ren)	Dichotomous indicator of whether a student had a child prior to college entry, coded "1" if yes
K-12 Education	
8th grade math score	Continuous measure of NELS math test score, taken in 8th grade
Public high school	Dichotomous indicator of control of high school student attended, coded "1" if public
High school GPA	Continuous measure of unstandarized cumulative high school grade point average
12th grade test score	Continuous measure of score on NELS test in math, reading, and science, taken in 12th grade
Academic Coursetaking	
Advanced math	Dichotomous indicator of math coursetaking, coded "1" if student took Algebra II, trig, pre-calc, or calculus
Core lab science	Dichotomous indicator of science coursetaking, coded "1" if student took biology, chemistry, or physics

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