Beyond Access: Explaining Socioeconomic Differences in College Transfer

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Reducing socioeconomic differences in college transfer requires understanding how and why parental education, occupational class, and family income are associated with changing colleges. Building on prior studies of traditional community college transfer, the authors explore relationships between those factors and two types of transfer among four-year college students. The results indicate that reverse transfer—the move from a four-year to a community college—is more common among students from less-educated families partly because of lower levels of academic performance during their freshman year. In contrast, students from advantaged backgrounds in terms of class and income are more likely than are others to engage in a lateral transfer—from a four-year to a four-year college—which may reflect individual preferences for changing colleges, rather than a reaction to poor academic performance. Implications for policy and practice are discussed in light of the fact that only reverse transfer is associated with lower rates of completion of bachelor's degrees.

Students are usually said to make three college decisions: whether to go, where to attend, and whether to finish a degree (Manski and Wise 1983). Inequalities persist in each choice, such that children from socioeconomically disadvantaged families are less likely to enter college, attend elite institutions, and earn bachelor's degrees (e.g., Cabrera, Burkum, and La Nasa 2005; Hearn 1991; Karen 2002; Paulsen and St. John 2002). But after they access college and before they complete degrees, students confront numerous additional choices that affect their chances of finishing school, including how many classes to take, whether to work, and—the focus of this article—whether to transfer colleges. Although popular conception holds that the college experience takes place at one school, nearly half of all contemporary undergraduates attend more than one

college (McCormick 2003). Moreover, while research on college transfer has traditionally focused on students who begin at community colleges and move to baccalaureate-granting institutions, changing colleges is also common among students who start at four-year schools (Goldrick-Rab 2006).

Past research has consistently identified large differences in rates of traditional community college transfer between advantaged and disadvantaged students (e.g., Dougherty 1987; Dougherty and Kienzl 2006; Lee and Frank 1990; Velez and Javalgi 1987). Indeed, the low rates of movement to four-year colleges by low-income and minority community college students have caused many analysts to question the value of a differentiated higher education system that may divert students from more opportunities than it provides them (e.g., Brint and Karabel 1989;

Dougherty 1994). Yet social inequalities in transfer among *four-year* college students have been identified and examined in only one known study, which found that even within that relatively advantaged group of students, those from families of lower socioeconomic status (SES) transfer schools less successfully (Goldrick-Rab 2006). Although that finding confirmed other work on transfer and may therefore be considered unsurprising, it suggests socioeconomic variations in the reasons why students change colleges. Since the transfers are not motivated by the need to attend a school that grants bachelor's degrees, the question is this: Do four-year college students of lower SES move to other colleges because they lack information, financial resources, or academic preparation? On the other hand, is college transfer among more advantaged students based more on personal preference or educational expectations than on financial or academic necessity? Any effort to reduce social inequality in college transfer will rely on answers to these questions. In particular, both policy interventions and sociological theories of stratification in higher education require a better understanding of precisely which aspects of family background are linked to which kinds of mobility and why. Generating knowledge to facilitate that understanding is the task of this article.

REVIEW OF THE LITERATURE

We begin by describing variation in how students attend college in the United States and what is known about the relationship between family background and the college experience.

Contemporary College Trajectories

The manner in which today's students encounter college is complex. Nationally, 27 percent of students take some time off after they enter school, 39 percent attend part time, and 31 percent change their major at least once (Ingels et al. 2002). Delaying enrollment and enrolling part time in college are behaviors that are more common among

less-well-off students (Adelman 1999; Bozick and DeLuca 2005). In addition, students are moving in, out, and among colleges and universities at higher rates than ever before. Between the 1970s and 1990s, the number of schools that the average undergraduate attended increased from one to three, and the proportion of students attending more than one college rose from 51 percent to 57 percent (Adelman 1999; Adelman, Daniel, and Berkovits 2003).[1]

The two primary forms of mobility among students at four-year colleges are lateral transfer and reverse transfer. Lateral transfer is movement to another institution of the same type (in this study, to another four-year institution), and reverse transfer is movement to a community college. The data used for this study indicate that 19.5 percent of students who start at a four-year college engage in at least one lateral transfer during their college careers and as many as 15.5 percent make a reverse transfer (see Table 1). Nevertheless, studies of transfer have overwhelmingly focused on entering community college students (e.g., Dougherty, 1987; Lee and Frank 1990; Velez and Javalgi 1987). The literature on reverse transfer is sparse, and the data in those studies tend to come from a single or small set of institutions (e.g., Bach et al. 2000; Winter and Harris 1999), which makes it nearly impossible to draw conclusions about either the background characteristics of such students or their motivations for changing colleges (Townsend and Dever 1999).

Students' Mobility and Completion of Degrees

What, if any, consequences does changing colleges hold for completing a degree? Following the dominant theoretical models of students' persistence in college that emphasize attendance at a single institution, most empirical research on the completion of degrees has neglected to account for students' mobility. The handful of studies that, at a minimum, controlled for the number of colleges attended or, at best, took the direction of mobility into account (e.g., Adelman 1999, 2006; McCormick and Carroll 1997) pro-

duced mixed findings. Some found no effect of mobility, while others found relatively small negative effects. The variation in findings can be attributed to the quality of the measure of mobility (whether it was based on transcript data or students' self-reports and whether the direction of mobility was accounted for) and restrictions placed on the sample (for example, whether all students or only those at four-year schools were included). Furthermore, the ability to draw conclusions about causal effects from prior research is limited by an overall lack of consideration of selection effects; in other words, students who change colleges may have important but unmeasured characteristics that also affect their chances of completing degrees.

In an analysis described elsewhere, we used econometric methods to estimate the causal effects of students' mobility by comparing the completion of degrees by reverse-transfer and lateral-transfer students who started at four-year colleges as well as students who began at two-year colleges (Goldrick-Rab and Pfeffer 2007). We found that lateral transfer does not appear to reduce students' chances of completing degrees and that while reverse transfer to a community college is disadvantageous relative to staying enrolled at a four-year college or laterally transferring to another four-year college, it results in higher rates of completion of degrees than does the alternative of starting *initially* at a community college. On the basis of those findings, we believe that inequalities in the rates of reverse transfer (rather than in the rates of lateral transfer) are likely to be consequential for stratification in college outcomes.

Social Background and the Decision to Change Colleges

Effects of social background operate to make children from the same type of families appear more alike than children from different families (Jencks 1972). Persistent relationships between social background and higher education outcomes, particularly access and completion, have been extensively documented (e.g., Ellwood and Kane 2000; Haveman and Wilson 2007; Hearn 1984,

1991; Karen 2002). Students engage in the tertiary sector at different rates, enroll in disparate parts of the system, and reach substantially stratified outcomes, depending, in part, on their family of origin. In one nationally representative study, 56 percent of eighth graders whose parents did not attend college went on to pursue a postsecondary education, compared to 95 percent of those who had at least one college-educated parent (Ingels et al. 2002). More recent estimates have identified a 50 percentage-point gap in college going for students from the bottom and top quarters of the income distribution, a gap that is only slightly smaller (about 40 points) when conditioned on high school graduation (Haveman and Wilson 2007).[2] When they do attend college, poor students are less likely to apply to and be accepted at four-year institutions and elite private colleges and universities (Alon 2001; Hearn 1991; McDonough 1997; McPherson and Shapiro 1991). Partly as a result, there is substantial variation in college completion: Conditional on going to college, 25.9 percent of students in the bottom 25 percent of the income distribution earn a degree, compared to 59.1 percent of those in the top 25 percent (Haveman and Wilson 2007). Completion rates differ even among relatively advantaged students who begin at four-year institutions; one national survey found a 28 percentage-point difference in earned bachelor's degrees between students from the bottom and top quintiles of the income distribution and a 41 percentage-point gap between students with and without parents with bachelor's degrees (authors' calculations based on the National Educational Longitudinal Study, NELS).

Sociological theory indicates that parental education, parental occupation, and family income may exert independent and different impacts on how students attend college. Parental education has been consistently identified as an important indicator of college attainment. Students with college-educated parents are more likely to attend and complete school, and that advantage persists even among children from lower-income families (Ishitani 2006; Pascarella and Terenzini 2005). The relationship between parental education and postsecondary

schooling is usually attributed to the greater levels of specific and accurate information that college-educated parents provide their children, information that can be essential to students' ability to plan, prepare for, and successfully navigate their college careers.

Social-class categories signal "a complex of life conditions that are bound together in a package" and that may extend beyond economic or educational forces alone (Grusky and Weeden 2006:90). A classical, though not uncontroversial, approach to denoting class status is the use of occupational positions (see Wright 2005 for an overview of the most important contributions). The occupation of one's parents can be interpreted to denote the social role that the parents play outside the home and to connote information about the parents' technical and social skills as well as current and future economic prospects (Hauser and Warren 1997; Wright 2005). Thus, distinguishing among students on the basis of their parents' occupations allows for an analysis of children who were raised in advantaged and disadvantaged settings and their corresponding life chances.

The persistent and intensifying relationship between family income and college attainment has been well documented (Belley and Lochner 2007; Ellwood and Kane 2000; Guldi, Page, and Stevens 2007; Haveman and Wilson 2007; Lochner and Monge-Naranjo 2008). One theory is that low-income students attend and complete college at lower rates—despite the large, long-term, and increasing financial payoff—because they are unable to borrow the funds that are necessary to cover their costs. Researchers have largely rejected this theory, however (Dynarski and Scott-Clayton 2006). There is clear evidence of a strong and growing relationship between family income and graduation, even in the absence of any direct costs for college attendance. Family income is also closely related to other factors of students' upbringing that have an impact on the likelihood of college graduation. For example, low-income students attend elementary and secondary schools where they are taught by teachers who are less experienced and less effective (Clotfelter, Ladd, and Vigdor 2005). They are also more likely to be raised by parents who

lack a college education and are less able to provide academic and other forms of support for their children while they are in high school or afterward. Some low-income families are led by single parents who, even if they could help, have less time to spend with their children as they juggle the demands of work and family life (Lareau and Weininger 2008). But, fundamentally, the issue is not whether there is a relationship between income and college graduation—there clearly is—but how public policy can best address the problem. In our study, we were unable to examine the relationship between financial aid and college transfer because of the lack of measures of aid in the data set we used.[3] However, we were able to draw on a range of precollege measures that may serve as valid proxies to assess this point empirically (see the next section).

We argue that each of the discussed aspects of social background—parental education, social class, and family income—potentially affects the way in which students attend college. On the basis of the review presented earlier, we expect independent effects of each social background characteristic, but past research has not assessed whether and why these effects occur for different kinds of mobility. By addressing these concerns, we significantly expand on two prior studies that have yielded some first evidence for a complex picture of social inequality in students' college careers. The first study, which used nationally representative data, found that while the overall incidence of college transfer among four-year college students does not vary by a student's SES, there are differences in the manner in which students change colleges (Goldrick-Rab 2006). Specifically, students from the bottom socioeconomic quintile have a higher probability of changing colleges while experiencing an interruption in enrollment, whereas more advantaged students have a greater tendency to move among schools fluidly without taking time off. However, that study used a composite measure of SES, which encompassed education, occupation, and family income, and did not identify precisely which aspects of social background were important to the decision to transfer schools.[4]

The other study combined quantitative

and qualitative analyses of the postsecondary pathways of students in Chicago public schools to examine the distinguishing characteristics of students who changed colleges in comparison to those who did not (Deil-Amen and Goldrick-Rab 2009). The researchers found that poor urban students who change colleges are less likely to have a strong commitment to their educational goals and, what is important, lack an advocate who is invested in their plans to complete a bachelor's degree and who can help with postsecondary "strategizing." However, as we noted, that study emphasized differences *among* poor students and was unable to make comparisons across socioeconomic groups, since the variation in socioeconomic standing of the sample was low.

In addition to documenting the relationship between different components of SES with different types of student mobility, our study also explored a set of factors that are hypothesized to explain these associations. In the literature, explanations for the lower levels of college achievement among disadvantaged students include financial constraints (Bettinger 2004; DesJardins, Ahlburg, and McCall 2006; Paulsen and St. John 2002), poor college preparation and academic tracking from kindergarten to the 12th grade (Adelman 1999, 2006; Bowen, Kurzweil, and Tobin 2005; Cabrera et al. 2005; Venezia and Kirst 2005), inaccurate perceptions of economic returns and other informational deficits (Avery and Kane 2004; Beattie 2002; Grodsky and Jones 2007; McDonough and Calderone 2006; Rouse 2004), lower educational aspirations (Alexander, Bozick, and Entwisle 2008; Reynolds et al., 2006), familial and peer contexts (Kim and Schneider 2005; Steelman and Powell 1989; Turley 2006), unsupportive college practices (Rosenbaum, Deil-Amen, and Person 2006; Tinto 1993), and inadequate governmental policies (Dynarski 2002; Kane 1994). There is little consensus about the relative importance of each of these mechanisms. Therefore, like many other analysts, we rely on more than one mechanism to explain the relationship between social background and transfer.

More specifically, we examine *high school achievement*, to test whether social differences in transfer behavior arise from earlier demonstrated ability and academic preparedness. On other hand, educational experiences after high school—*early college achievement and initial college attributes*—can also be expected to play an independent role in explaining social inequalities in students' careers. One mechanism that is more closely tied to a specific component of social background is *educational expectations*, which have not only been shown to take a central role in mediating the general process of intergenerational transmission of advantage (Sewell, Haller, and Portes 1969), but have been argued to be a central factor in explaining educational differences pertaining to social class (Breen and Goldthorpe 1997). Parental education can be hypothesized to take its effects partly via the level of *strategic planning* that the student may be able to realize on the basis of parental advice and experience within the educational system. Finally, we included proxy measures for *financial constraints*, which may explain possible effects of family income. Note that although we describe each of these factors (strategic planning, educational expectations, and financial constraints) as potentially linked to a single aspect of social background, in our models we test for the ability of each to explain any aspect of the effects of social background. In what follows, we give a detailed picture of social inequalities in students' transfer behavior and then go on to test the explanatory power of these mechanisms.

DATA AND METHODS

The data for this study came from the last three waves of the National Education Longitudinal Study (NELS), conducted by the U.S. Department of Education. The survey used a national probability sample of 25,000 eighth graders who were first surveyed in 1988 and reinterviewed during four additional follow-ups. The fifth and final wave occurred in 2000, when the students were aged 26 or 27; at that time, 12,144 individuals were interviewed, and requests for the postsecondary transcripts of the 9,602 students who had attended college by 2000

were submitted to the relevant institutions. A total of 15,562 transcripts were received for 8,889 students. Thus, these students were followed for eight years after high school graduation, which provides a substantial window within which to observe their postsecondary pathways and completion rates, even for those who transferred colleges. Still, to reduce problems posed by right truncation of the data, our sample included only students who began their studies before 1995.

The sample used in this study was drawn from the 2000 wave of NELS and included only students who participated in the second (1992), third (1994), and fourth (2000) follow-ups; attended at least one postsecondary institution; and had a complete transcript record. Furthermore, only students who began college at a four-year institution were included, yielding a final sample of 4,716 students. There were several substantive reasons for focusing on students who started at four-year colleges. First, starting college at a four-year institution is the result of a series of selective processes (including applying to a four-year school, gaining admission, and enrolling) and thus represents advantage, achievement, and aspirations. Conditioning the sample in this way therefore diminished the amount of unobserved heterogeneity within the group we examined. However, we also know that substantial socioeconomic gaps in completion exist in the four-year population (Goldrick-Rab 2006). We were concerned with drawing finer distinctions among the postsecondary trajectories of students who begin at four-year schools to gain a better understanding of their stratified outcomes.

The assessment of student transfer relies on NELS data from postsecondary transcripts because these data provide more reliable measures of transfer than does the self-reported information found in the NELS basic restricted-use file.[5] In a comparison of transcript and self-reported data from the NELS, Adelman (2004) found that students tend to underreport the number of postsecondary institutions they attend; for example, in the NELS survey, nearly 10 percent of postsecondary attendees failed to report at least one institution. In gathering transcript data for

the NELS, survey officials first requested transcripts for all the institutions a student reported attending. They then requested transcripts for schools that appeared on a student's transcripts but were not reported by the student (i.e., attendance at an additional school was evidenced by transfer credits). In this way, the officials ensured a more complete postsecondary history of students than if they had relied on students' reports.

Measures

The appendix presents the description and coding of all variables (dependent and independent) that were used in the analyses. Two central types of student mobility are distinguished: *lateral transfers*, denoting the move from a four-year college in one year of study to another four-year college in the following year of study (July to June), and *reverse transfers*, denoting the move from a four-year college in one year to a two-year college in the next year. These clear-cut distinctions become somewhat more complicated when one considers cases of simultaneous enrollment.[6] Here, we identify lateral transfer as the movement between "primary" institutions, the latter being identified as the four-year college at which the student completed the majority of credits in the given academic year. To identify genuine reverse transfer correctly in situations of simultaneous enrollment, we imposed the restriction that the student did not maintain any enrollment in the four-year college attended in the preceding academic year. Our measures of both lateral transfer and reverse transfer recorded whether such transfer behavior occurred at any point in the college career.

The independent variables that were of central interest to our analysis were three social background characteristics. *Parental education* was measured as the highest degree attained by either parent in four categories ranging from high school or less to higher than a BA degree. Our measure of *social class* was based on students' reports of their fathers' occupation and was captured in a simplified version of the widely used EGP class scheme (see, e.g., Breen, 2005; Erikson, Goldthorpe, and Portocarero 1979), distin-

guishing among the working class, the self-employed, and the service class. *Family income* was reported by parents in 1988 and 1992. To capture the economic well-being of the family more accurately and reduce measurement error, both reports were averaged. Additional *demographic characteristics* of the student included gender and race, whether the family of origin was headed by a single mother, and the number of siblings.

To disentangle the effects of the listed ascriptive variables from differential *student achievement*, the following high school measures were included: tested ability (using a standardized test administered to NELS seniors), grade point average (GPA), curricular intensity of the courses taken, and whether the student ever changed high schools. Tested ability was included as a measure of aptitude. GPA assessed both a student's achievement and commitment to school. The curricular intensity measure, which captured the degree of difficulty of the courses a student took, was included as a measure of college preparedness. Whether a student changed high schools indicates both the degree of the student's engagement and the negative achievement results associated with a change in schools (see Rumberger and Larson 1998).

Educational expectations of significant others were measured as the expectation not only of the father and mother for the student to attend college, but of the students' friends' expectations. In addition, the preference for having the child stay home to attend college was included as a measure of the parents' willingness to sacrifice college expectations for family norms (Turley 2006). Finally, whether these expectations by significant others translate into the student's own educational aspirations was indicated by whether the student consistently planned to attain a bachelor's degree in both 1990 and 1992. As measures of *strategic planning*, we included information about whether the student participated in any precollege programs, whether the student's parents were involved in the student's college decision, and the number of colleges to which a student applied as a high school senior. *Financial constraints* were captured by the parents' per-

ception of whether they had enough money for their eighth grader to attend college and the parents' report of whether their child had applied for financial aid in the senior year of high school. Manifested financial constraints on the student side were meant to be captured by an indicator of whether the student delayed college entrance for more than seven months after high school graduation and whether the student had a child before 1992.

A series of measures regarding *early college experience* were also taken into account. The student's GPA in the first year of college was included as a measure of performance once enrolled. Whether a student completed at least 30 credits in the first year of college represented the first step to the timely completion of a degree. Both the control and selectivity of the first four-year institution attended were measured, since students at private and highly selective institutions have higher rates of retention and completion of degrees (Zhang 2005). As additional characteristics of the first college attended, we included whether it was located in the same state as the student's high school and whether it was the college of his or her first choice.

We recognize the potential for endogeneity to bias the estimates for these coefficients. For example, it is possible that a student enters college already having decided eventually to transfer and therefore chooses to start college at a less selective school or not to work as hard in the first school. For these reasons, we caution readers against interpreting the results as causal. Our purpose in including these variables in the models is to acknowledge their potential importance in mediating the relationship between aspects of social class and the decision to transfer, not to assess their individual importance in the decision to transfer.

Analytic Strategy

After a detailed descriptive analysis of socioeconomic differentials in transfer, we estimated a series of logistic regressions predicting whether a student ever made a transfer of a certain type, namely, a lateral transfer and a reverse transfer. Sets of covariates were entered one at a time in groups, so as to test our

hypotheses about the role of high school achievement, educational expectations, strategic planning, financial constraints, and first-year college experiences and characteristics in contributing to socioeconomic differences in students' mobility. We present the results of these analyses in terms of the increased likelihood of engaging in a form of mobility (given a specific student characteristic and net of others) by presenting odds ratios.

All analyses were weighted to adjust for oversampling, nonresponse, and survey attrition and adjusted to account for the complex survey design of the data set, namely, stratification and clustering.[7] The Stata survey commands (svy) were used for this purpose. Missing values in the data were multiply imputed using a chained equation algorithm implemented in the Stata *ice* program (Royston 2004). All analyses were computed on five complete data sets, and estimated coefficients and standard errors were averaged following Rubin's rule.

RESULTS

In this sample of traditional-aged students who began their postsecondary education by entering a four-year college or university, 33 percent transferred at least once within eight years of high school graduation. Nearly one in five (19.5 percent) transferred laterally, and 15 percent transferred in reverse, at least once. Among the latter group, 41 percent later returned to a four-year institution (see Table 1).

Rates of bachelor's degree completion were highest among students who never changed colleges (79 percent). Among students who transferred, lateral transfers were much more likely than were reverse transfers to complete a bachelor's degree (69 percent versus 22 percent). This finding is not surprising, since most two-year colleges do not offer bachelor's degrees, so the attainment of a bachelor's degree for a reverse transfer student is conditional on an upward transfer to a four-year college. The bachelor's degree completion rate among students who reverse transferred and subsequently moved to a four-year school was 49 percent.

The window of observation in this study was consequential, since changing colleges in some cases was associated with taking time off from college (Goldrick-Rab 2006). In particular, we found that while overall only 14 percent of students took time off from school, the rate of stop-out was nearly 3.5 times greater among reverse transfer students (48 percent) and, to a lesser extent, higher among lateral transfer students (22 percent). This finding suggests that reverse transfer students have an especially hard time maintaining continuity in their enrollment, although it is also possible that the opposite is true—that students who take time off from a four-year college may be more likely then to leave that school to attend a community college. In either case, the low rates of bachelor's degree completion associated with a reverse transfer indicate that reverse transfer is the form of student mobility most deserving of attention.

The institutional destinations of students who changed colleges varied according to the individuals' socioeconomic backgrounds. Beginning by using the composite measure of SES, we found that the choice of a four-year school as a destination was somewhat less common among students from the bottom two quintiles, while students in the bottom quintile were much more likely than were their more advantaged counterparts to move to a two-year school (see Figure 1). Specifically, a student from the bottom SES quintile was about half as likely as a student from the top quintile to transfer laterally but three times more likely to reverse transfer. The confidence intervals around the mean estimates reveal that these SES differences are significant.

Having detected these broad SES differences in the destinations of four-year transfer students, we next assessed the role of each component of social background to illuminate further the shape of social inequality in student mobility. Figure 1 also illustrates transfer rates by parental education, father's occupational class, and family income. These descriptive statistics indicate that SES differences in lateral transfer are based on occupational class as well as family income, with working-class students and students from the lowest income quintile significantly less likely

Table 1. Descriptive Statistics

Variables	All (N = 4,716)		Reverse Transfer (N = 599)		Lateral Transfer (N = 956)	
	Mean	SE	Mean	SE	Mean	SE
Student Mobility						
Any transfer	0.327	0.011	1.000	0.000	1.000	0.000
Lateral transfer	0.195	0.008	0.173	0.019	1.000	0.000
Reverse transfer	0.150	0.010	1.000	0.000	0.133	0.015
Upward transfer	0.061	0.006	0.406	0.034	0.133	0.015
Stop-out	0.139	0.009	0.480	0.036	0.224	0.018
Attainment						
BA completion	0.691	0.012	0.216	0.027	0.686	0.021
Social Background						
Socioeconomic Index, lowest quintile	0.058	0.008	0.132	0.033	0.035	0.006
Socioeconomic Index, 2nd quintile	0.107	0.009	0.126	0.017	0.082	0.009
Socioeconomic Index, 3rd quintile	0.165	0.009	0.179	0.021	0.174	0.022
Socioeconomic Index, 4th quintile	0.252	0.011	0.283	0.033	0.248	0.020
Socioeconomic Index, highest quintile	0.418	0.015	0.280	0.032	0.461	0.024
Parental education: High school or less	0.147	0.015	0.238	0.034	0.124	0.016
Parental education: Some college	0.356	0.012	0.406	0.035	0.342	0.025
Parental education: BA	0.244	0.011	0.240	0.037	0.267	0.025
Parental education: Higher than a BA	0.253	0.012	0.116	0.021	0.267	0.023
Social class: Working	0.381	0.015	0.497	0.045	0.320	0.021
Social class: White collar	0.540	0.015	0.450	0.045	0.579	0.023
Social class: Self-employed	0.079	0.009	0.054	0.016	0.101	0.020
Family income (in $1,000)	96.443	2.130	77.043	4.685	104.965	3.475
Demographics						
Female	0.539	0.012	0.518	0.037	0.527	0.023
Nonwhite	0.170	0.013	0.227	0.034	0.143	0.017
Single mother household	0.114	0.009	0.174	0.038	0.089	0.013
Number of siblings	1.994	0.037	2.101	0.100	2.012	0.080
High School Achievement						
NELS senior test	69.838	0.626	60.115	2.232	69.937	1.111
High school GPA	3.121	0.017	2.814	0.064	3.069	0.030

Table 1. Continued

| Variables	All (N = 4,716)		Reverse Transfer (N = 599)		Lateral Transfer (N = 956)	
	Mean	SE	Mean	SE	Mean	SE
Academic curriculum intensity, lowest quintile	0.039	0.006	0.068	0.023	0.031	0.008
Academic curriculum intensity, 2nd quintile	0.114	0.009	0.209	0.035	0.101	0.014
Academic curriculum intensity, 3rd quintile	0.152	0.010	0.187	0.036	0.173	0.019
Academic curriculum intensity, 4th quintile	0.297	0.012	0.273	0.036	0.341	0.024
Academic curriculum intensity, highest quintile	0.398	0.014	0.263	0.036	0.354	0.027
High school mobility	0.194	0.012	0.288	0.038	0.182	0.022
Strategic Planning						
Participation in precollege programs	0.040	0.006	0.048	0.016	0.034	0.009
Parental involvement in college decision	0.660	0.012	0.587	0.039	0.695	0.020
Number of colleges applied to: None	0.082	0.007	0.141	0.027	0.084	0.013
Number of colleges applied to: 1	0.273	0.01	0.304	0.033	0.214	0.017
Number of colleges applied to: 2–4	0.460	0.012	0.445	0.035	0.521	0.023
Number of colleges applied to: 5 or more	0.185	0.012	0.110	0.027	0.181	0.022
Educational Expectations						
College expectation, father	0.772	0.01	0.718	0.036	0.812	0.022
College expectation, mother	0.839	0.010	0.825	0.030	0.867	0.019
College expectation, friends	0.487	0.012	0.395	0.034	0.499	0.024
Proximity to home preference, parents	0.238	0.010	0.348	0.034	0.214	0.022
Consistent BA aspirations	0.761	0.010	0.655	0.036	0.772	0.023
Financial Constraints						
Parental ability to pay for college	0.063	0.006	0.079	0.024	0.054	0.010
Applied for financial aid	0.653	0.012	0.665	0.033	0.616	0.024
Delay between high school and college	0.052	0.006	0.111	0.028	0.032	0.006
Parenthood	0.005	0.001	0.007	0.003	0.004	0.003
First-year College Experience and Characteristics						
GPA first year	2.418	0.021	1.848	0.042	2.409	0.039
Completed 30 credits in first year	0.575	0.012	0.320	0.033	0.545	0.024
First-year institution selective	0.281	0.014	0.168	0.030	0.218	0.021
First-year institution public	0.664	0.012	0.786	0.028	0.661	0.022
First-year institution in state of high school	0.723	0.014	0.817	0.027	0.674	0.024
First-year institution was first choice	0.612	0.011	0.547	0.036	0.576	0.022
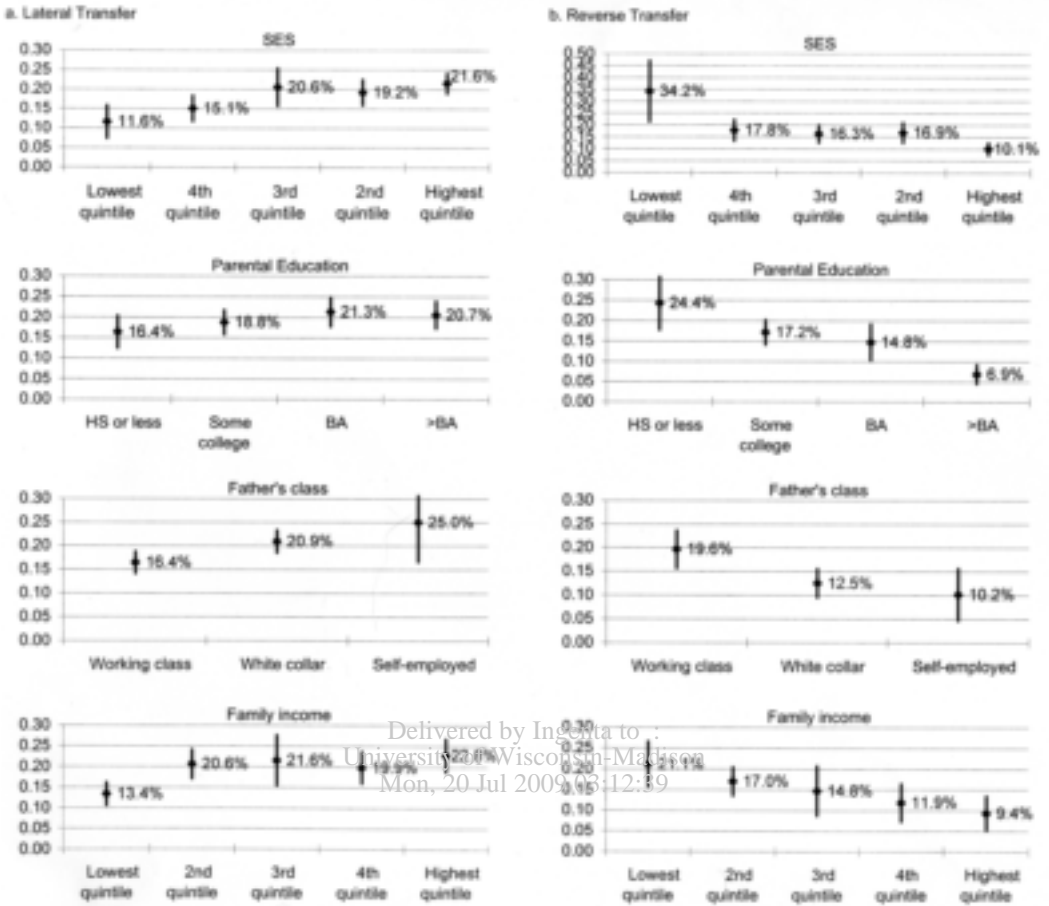
Figure 1. Student Mobility, by Social Background. Marks show mean percentages, lines show 95 percent confidence intervals.

to make that move. Differences in rates of reverse transfer also vary significantly by these factors, but with working-class students and those from the lowest income quintile exhibiting the highest incidence rates. In addition, reverse transfer is significantly associated with parental education: Students with parents who earned *more* than a bachelor's degree are much less likely to reverse transfer. Differences between first-generation students and those whose parents earned (only) a bachelor's degree were not observed, however-er. The negative relationship between having highly educated parents and the likelihood of reverse transferring is by far the strongest

among the ones assessed here. While nearly one-fourth of the children of parents who did not finish high school left their initial four-year school to reverse transfer to a community college, we observed that pattern among less than 7 percent of the students whose parents had professional or postgraduate degrees.

We next estimated logistic regressions to assess the independent influences of specific aspects of family background and to test the theoretical explanations for these differentials offered earlier. In particular, we estimated a series of blocked regressions (first predicting reverse transfer and then predicting lateral

transfer) that begin with the inclusion of only parental education, occupation, and income (Model I). In an effort to explain these social background effects, the following models then take into account demographic characteristics (Model II), high school achievement (Model III), educational expectations (Model IV), strategic planning (Model V), financial constraints (Model VI), and finally initial college attributes as well as first-year academic performance (Model VII). The purpose of modeling the regressions in this manner was to examine the extent to which each set of factors mediates the observed socioeconomic differences in mobility outcomes; therefore, we placed less emphasis on the size of the coefficient for each indicator than on the degree of mediation of the included social background effects.[8]

Table 2 presents the results for reverse transfer. The relationships that are indicated in the descriptive statistics are largely borne out in the first model: Reverse transfer is significantly less common among students with highly educated parents, wealthier parents, and students from non–working-class families (especially self-employed fathers).[9] However, differences based on family income and occupational class position faded away when we considered demographic characteristics and students' high school achievement (especially GPA), respectively (Models II and III). While high school achievement also explains some of the relationship between parental education and reverse transfer, this social differential in reverse transfer persists.

Models IV–VI test the remaining mechanisms that we hypothesized underlie associations between social background and student mobility (educational expectations, strategic planning, and financial constraints). Of these mechanisms, only one exerts notable effects: Having more ambitious high school friends with greater expectations for earning a college degree decreases the probability of a reverse transfer. However, this association fails to account for any of the lower reverse-transfer rates of children from highly educated households. As the next model (VII), which also considers first-year college performance, illustrates, both first-year college GPA and adequate progress in

the accumulation of credits show strong negative associations with the probability of reverse transfer. Of these two factors, it is college GPA that mediates a large part of the effect of parental education.[10] That final model, which also yields a significant improvement in model fit, thus suggests that the students who are most likely to reverse transfer are the children of parents with lower levels of education and that they reverse transfer primarily because of struggles during their initial transition to college (not because they were less prepared—academically or financially—for college).

In Table 3 we present the multivariate results for the analysis of lateral transfer. In contrast to reverse transfer, rates of lateral transfer do not significantly differ by parental education but, rather, by parental occupational class and family income (Model I), again confirming the descriptive results. These relationships are notably weaker than the relationship between reverse transfer and parental education, but they persist across all seven models and do not appear to be attributable to advantages in academic or social preparation for college or college performance. Although some of the these factors exert independent influences on the probability of lateral transfer (for example, students who do not delay college entry, those who attend more selective colleges, and those who go to out-of-state colleges are all more likely to transfer laterally), the social differentials in lateral transfer remain largely unexplained by the mechanisms we explored. The interpretation that lateral transfers are the result of students' preferences (which are at least partly determined by occupational class) appears plausible, although the reasons for it remain hidden. Lateral transfers may be related to behavioral differences; for instance, the children of self-employed parents—parents who are potentially less risk averse and more market oriented—may display similar proclivities by shopping around the marketplace of higher education for alternative four-year colleges (Goldrick-Rab 2006). However, keep in mind that the realization of these preferences is still partly determined by family income and, moreover, that the overall model does a relatively poor

Table 2. Logistic Regression Predicting Reverse Transfer

Variables	I	II	III	IV	V	VI	VII
Social Background							
Parental education: Some college	0.72	0.73	0.81	0.81	0.81	0.81	0.94
Parental education: BA	0.69	0.71	0.79	0.81	0.79	0.79	1.07
Parental education Higher than a BA	0.32***	0.32***	0.38***	0.40**	0.40**	0.40**	0.58
Social class: White collar	0.90	0.88	0.93	0.94	0.94	0.94	0.96
Social class: Self-employed	0.54*	0.53*	0.56	0.57	0.57	0.59	0.59
Family income	0.80*	0.85	0.88	0.90	0.91	0.93	1.01
Demographics							
Female		0.82	0.94	0.96	0.97	0.97	1.14
Nonwhite		1.06	0.82	0.86	0.85	0.86	0.82
Single mother household		1.28	1.20	1.20	1.28	1.28	1.24
Number of siblings		1.03	1.00	1.00	0.99	0.99	0.98
High School Achievement							
NELS senior test			0.99	0.99	1.00	1.00	1.00
High school GPA			0.63**	0.63*	0.63**	0.63*	0.97
Academic curriculum intensity, 2nd quintile			1.31	1.31	1.26	1.26	1.15
Academic curriculum intensity, 3rd quintile			0.84	0.87	0.83	0.85	0.69
Academic curriculum intensity, 4th quintile			0.85	0.89	0.87	0.89	0.78
Academic curriculum intensity, highest quintile			0.72	0.77	0.77	0.78	0.75
High school mobility			1.60**	1.61**	1.60**	1.58***	1.46
Strategic Planning							
Participation in precollege programs				0.85	0.88	0.87	1.11
Parental involvement in college decision				0.88	0.86	0.87	0.90
Number of colleges applied to: 1				0.88	0.91	0.95	1.10
Number of colleges applied to: 2–4				0.84	0.87	0.89	1.05
Number of colleges applied to: 5 or more				0.66	0.70	0.71	0.91
Educational Expectations							
College expectation, father					1.07	1.08	1.02
College expectation, mother					1.32	1.31	1.23
College expectation, friends					0.68**	0.68**	0.69**
Proximity to home preference, parents					1.19	1.20	1.17
Consistent BA aspirations					0.97	0.97	0.87

Table 2. Continued

Variables	I	II	III	IV	V	VI	VII
Financial Constraints							
Parental ability to pay for college						0.96	0.93
Applied for financial aid						1.07	1.17
Delay between high and college						1.24	1.48
Parenthood						0.85	0.79
First-year College Experience and Characteristics							
GPA first year							0.39***
Completed 30 credits in first year							0.58**
First-year institution selective							0.82
First-year institution public							1.38
First-year institution in state of high school							1.20
First-year institution was first choice							0.96
Constant	0.76	0.50	2.86	3.12	2.50	2.02	1.85
Number of Observations	4,716	4,716	4,716	4,716	4,716	4,716	4,716
Fit Statistics							
Loglikelihood	-1915.8	-1904.3	-1826.3	-1820.2	-1805.4	-1803.0	-1635.8
BIC	-112	-101	-198	-168	-155	-126	-410
Adj R^2 (McFadden)	0.037	0.041	0.077	0.077	0.082	0.081	0.162

Note: * $p < .1$, ** $p < .05$, *** $p < .01$; fit statistics based on one complete and weighted data set (fitstat command).

job of predicting the preference for lateral transfer. In general, then, the results for lateral transfer leave much space for explanations of its determinants and its relationship to socioeconomic background.

DISCUSSION AND CONCLUSION

This analysis expands on prior research on socioeconomic differences in college students' mobility, particularly to identify more precisely which aspects of family background matter most for transfer, and why. By examining parental education, family income, and social-class influences separately, we developed a more nuanced view of students' mobility. We also tested several potential explanations for differences in the types of transfer that four-year college students engage in, including variation in high school academic preparation, strategic planning, educational expectations, financial constraints, and college performance.

Our results indicate that students who transfer from four-year colleges should not be treated as a homogeneous faction. The inclination to group them with a label such as "swirling students" should be avoided, since such a term conceals important differences in regard not only to their motivations for changing colleges, but to differential processes of stratification.[11] Lateral transfer students appear to be a relatively elite set, since their levels of household income and parental occupational status are higher than average. Their motivations for changing colleges may be based on expressions of personal preference, possibly striving to move to a "better" school, but are clearly not connected to inadequate academic preparation in high school or poor performance in college. Furthermore, other research has found no differences in rates of completing degrees among students who begin at a four-year college and stay there and those who move to another four-year school, net of other factors (Goldrick-Rab and Pfeffer 2007). If lateral transfer is thus the less pressing issue from an educational policy perspective, the failure of our models to explain its determinants fully also appears less problematic.

On the other hand, reverse transfer is more common among students whose parents did not receive *more* than a bachelor's degree. Although much of the emphasis in higher education is on the differences between students with and without college-educated parents, among the students at four-year colleges, the most important distinction here is between students with "BA-plus" parents and those without.[12] Students whose parents went to graduate school are less likely to leave their first college to attend a community college. Our hypotheses for this relationship, derived from stratification theory, were largely unsuccessful; the levels of academic preparation, informational and financial resources, and educational expectations found among the children of less-educated parents do not explain these students' tendency to reverse transfer. Instead, the analyses clearly showed that students who are *equally well prepared* for college but come from less-educated families show a higher propensity to leave the four-year college track because they struggle academically in their first year of college. This finding is consistent with other research that has identified significant challenges for first-generation students, particularly during their first year of college (Tinto 2004). It may be explained by the failure of our measures of academic preparation to capture adequately the factors that are really required for college success—although we note that our measures included all those used by college admissions officers to predict the ability to succeed in college (test scores, high school course work, and GPA). But this finding is especially interesting in light of other recent research that has identified greater cognitive gains during college among "BA-plus" students (Arum et al. 2008). There appear to be important advantages accruing to the children of parents who succeeded in graduate school, including a greater propensity to resolve academic difficulties by staying in the four-year sector, rather than moving to a community college.

This evidence of differentiation in the actions of students when they leave their first college calls for more attention to what happens *after* students initially access college.[13] It does not appear to be the case that mobility per se is a

Table 3. Logistic Regression Predicting Lateral Transfer

Variables	I	II	III	IV	V	VI	VII
Social Background							
Parental education: Some college	1.03	1.04	1.05	1.04	1.03	1.03	0.99
Parental education: BA	1.03	1.03	1.06	1.04	1.02	1.02	0.99
Parental education: Higher than a BA	0.90	0.90	0.95	0.93	0.91	0.90	0.92
Social class: White collar	1.21	1.22	1.25	1.25	1.24	1.23	1.23
Social class: Self-employed	1.57*	1.55*	1.56*	1.54*	1.53*	1.51	1.55*
Family income	1.29***	1.26**	1.25**	1.25*	1.23*	1.21*	1.23*
Demographics							
Female		0.98	1.02	1.02	1.03	1.02	1.03
Nonwhite		0.94	0.91	0.90	0.89	0.88	0.89
Single mother household		0.91	0.91	0.92	0.92	0.92	0.93
Number of siblings		1.03	1.03	1.03	1.03	1.03	1.04
High School Achievement							
NELS senior test			1.00	1.00	1.00	1.00	1
High school GPA			0.79**	0.80**	0.80**	0.79**	0.85
Academic curriculum intensity, 2nd quintile			1.20	1.21	1.19	1.16	1.12
Academic curriculum intensity, 3rd quintile			1.54	1.53	1.48	1.40	1.32
Academic curriculum intensity, 4th quintile			1.58	1.53	1.47	1.38	1.34
Academic curriculum intensity, highest quintile			1.15	1.11	1.06	1.00	1.01
High school mobility			0.86	0.87	0.87	0.90	0.89
Strategic Planning							
Participation in precollege programs				0.98	0.98	1.00	1.07
Parental involvement in college decision				1.16	1.15	1.13	1.14
Number of colleges applied to: 1				0.71*	0.70*	0.64**	0.74
Number of colleges applied to: 2–4				1.10	1.07	0.98	1.11
Number of colleges applied to: 5 or more				0.91	0.88	0.82	0.93
Educational Expectations							
College expectation, father					1.06	1.05	1.09
College expectation, mother					1.17	1.18	1.15
College expectation, friends					1.01	1.02	1.02
Proximity to home preference, parents					0.94	0.95	0.95
Consistent BA aspirations					1.02	1.00	1.00

Table 3. Continued

Variables	I	II	III	IV	V	VI	VII
Financial Constraints							
Parental ability to pay for college						0.94	0.95
Applied for financial aid						0.97	0.98
Delay between high school and college						0.56**	0.52**
Parenthood						0.89	0.86
First-year College Experience and Characteristics							
GPA first year							1.03
Completed 30 credits in first year							0.84
First-year institution selective							0.59***
First-year institution public							1.15
First-year institution in state of high school							0.70**
First-year institution was first choice							0.87
Constant	0.07***	0.07***	0.10***	0.10***	0.10***	0.14***	0.11***
Number of Observations	4,716	4,716	4,716	4,716	4,716	4,716	4,716
Fit Statistics							
Log likelihood	-2308.2	-2306.2	-2293.2	-2281.5	-2278.5	-2274.8	-2249.2
BIC	8	38	71	90	126	152	152
Adj R^2 (McFadden)	0.006	0.005	0.008	0.011	0.010	0.010	0.018

Note: * $p < .1$, ** $p < .05$, *** $p < .01$; fit statistics based on one complete and weighted data set (fitstat command).

cause for concern or ought to be prevented. Indeed, students from advantaged backgrounds appear to transfer colleges independent of financial or academic struggles at their first college in a way that does not reduce their chances for completing their degrees (since when they move, they predominantly go to another four-year school). On the other hand, mobility among the children of less-educated parents more often leads them back to a community college, and this appears to be partly a response to academic difficulties. Therefore, attention needs to be paid to helping students whose parents did not go to graduate school (a sizable population) to succeed while in college, potentially by introducing high-quality mandatory advising programs that can help students resolve their academic challenges while remaining in the four-year-college sector.

Finally, it is noteworthy that this study has identified rates of reverse transfer among four-year college students that appear to exceed estimates of traditional transfer among community college entrants. For example, more than one-third of socioeconomically disadvantaged students who begin at four-year colleges reverse transfer to a community college, whereas only approximately 10 percent of low-SES students who start at community colleges ever move to a four-year school (Dougherty and Kienzl, 2006). To be sure, even the poorest students at four-year colleges are likely to be at least somewhat better off than their community-college peers, which may explain some of these differences. Yet our analysis clearly indicates that entry to a four-year college is far from a guarantee that socioeconomically disadvantaged students will remain at, and complete, their education at that type of school.

NOTES

1. By the mid-1990s, nearly one-fifth of undergraduates attended more than two schools (Adelman et al. 2003).

2. That is, 71.2 percent of those in the top quartile attend college, compared to 21.6 percent of those in the bottom quartile. Conditional on high school graduation, the rates are 74.1 percent and 33.8 percent (Haveman and Wilson 2007).

3. We believe that the relationship between aid and college transfer would best be examined using an experimental approach in which aid is distributed randomly; the first author is in the midst of such a study and will report on her findings at a later date.

4. As others have pointed out (e.g., Grusky and Weeden 2006; Hauser and Warren 1997), such an approach can be misleading and make poor use of information that is provided by the underlying dimensions of social background.

5. For ease of writing, we use the term *transfer* in this article but note that the NELS does not precisely measure formal transfer (involving a transfer of credits) as much as a change in colleges. Many students change colleges without bringing along credits, and many enroll in college without completing official transfer paperwork.

6. In the student population examined here, simultaneous enrollment—measured as enrollment in more than one institution within any academic year—is held by as many as 28 percent of all students. Yet many researchers who have studied transfer have not accounted for simultaneous enrollment in their measures of transfer (for an exception, see Adelman 2006).

7. On the basis of the sample restrictions discussed earlier, we used the f4f2p3wt weight (the participation weight for 12th-grade freshened panel members with complete postsecondary transcript records). This weight works to preserve the representativeness of the sample on the basis of the level of certainty of postsecondary participation and the completeness of the transcript record; incomplete and single-case records that would distort or bias analyses were excluded.

8. One nevertheless has to maintain the assumption that the degree to which the odds ratio estimates are affected by unobserved heterogeneity is constant across models.

9. It is worth noting that we did not find racial differences in rates of reverse transfer among students from similar socioeconomic backgrounds.

10. This result is based on models in which each variable was entered separately (available from the authors). Also note that in the specification reported here, the parental education effect loses its statistical significance. Stability

tests of all regression models (also available from the authors) included an indicator of whether a student ever took time off from college. Because of the issue of reverse causality for this factor (described earlier), we are cautious about giving this effect much substantive interpretation. However, it has to be noted that with stop-out included, the statistical significance of the parental education effect is retained, although the virtually same drop in the size of the coefficient occurs. The latter result is the more important point for our conclusions.

11. For examples of uses of the term *swirling*, as well as other labels, see Adelman (2004), Borden (2004), de los Santos and Wright (1990), McCormick (2003), and Rab (2004).

12. To be clear, this finding could well be a reflection of the fact that we analyzed a selective population of children—four-year college starters—among which social background distinctions are at a generally higher level than in the general population.

13. We are not the first to call for more attention to issues of college students' success; see, for example, Rosenbaum et al. (2006).

APPENDIX

Description of Variables

Description

Student Mobility

Any transfer	Dichotomous indicator of whether the student ever changed his or her (primary) institution in any academic year
Lateral transfer	Dichotomous indicator of whether the student ever changed his or her primary institution from a four-year college to another four-year college in any academic year
Reverse transfer	Dichotomous indicator of whether the student ever changed from a four-year college to a community college in any academic year without maintaining enrollment at the four-year college
Upward transfer	Dichotomous indicator of whether the student ever changed from a community college to a four-year college in any academic year
Stopout	Dichotomous indicator of whether enrollment was ever interrupted for the length of least one academic year

Attainment

Completion of the BA degree	Dichotomous indicator of whether the student received a bachelor's degree by 2000 (age 26–27), as evidenced by transcript information

Social Background

Socioeconomic Index	Composite measure of socioeconomic status, derived from parental education, income, and occupation as of 1992; in quintiles (based on the initial distribution among all the respondents, reference: lowest quintile)
Parental education	Categorical measure of the highest educational degree attained by the parents: high school or less (reference), some college, bachelor's degree, or higher than a bachelor's degree
Social class	Categorical measure of the father's occupational status: working class (reference), white collar, or self-employed

APPENDIX CONTINUED

Description of Variables

Description

Family income	Continuous measure of family income; information from 1988 and 1992 averaged on the basis of the midpoints of the reported categories (standardized to 2006 dollars); in thousands; logarithmic transformation for regression models
Demographics	
Female	Dichotomous indicator of gender; reference: male
Nonwhite	Dichotomous indicator of race; reference: white or Asian
Single mother household	Dichotomous indicator of whether the student resided in a family headed by a single mother in eighth grade
Number of siblings	Continuous measure of the number of siblings when in the eighth grade
High School Achievement	
NELS senior test	Continuous measure of the percentile score on the test of general abilities administered to all survey participants in the 12th grade
High school GPA	Categorical measure of the student's high school grade point average; in quintiles (quintile values are 2.70, 3.07, 3.37, and 3.69; reference: lowest quintile)
Academic curriculum intensity	Categorical measure of the rigor of the student's high school curriculum on the basis of a score determined by both the quality of courses taken and the number of "hard" courses taken in multiple subjects (math, Advanced Placement courses, English, foreign language, science, social sciences, and computer sciences). For more on the construction of this variable, see Adelman (1999); reference: lowest quintile
High school mobility	Dichotomous indicator of whether a student changed schools between the 8th and 12th grades; reference: never changed high schools
Strategic Planning	
Participation in precollege programs	Dichotomous indicator of whether the student ever participated in a precollege program, such as Talent Search or Upward Bound
Parental involvement in college decision	Dichotomous indicator of whether the decision to go to college was made mainly by or in cooperation with the parents
Number of colleges applied to	Categorical measure of the number of colleges the student applied to in the 12th grade; none (reference), 1, 2–4, or 5 or more
Educational Expectations	
College expectation, father	Dichotomous indicator of whether the student's father (reportedly) thought that after high school the most important thing for the student to do was attend college, when asked in 1990 (sophomore year)
College expectation, mother	Dichotomous indicator of whether the student's mother (reportedly) thought that after high school the most important thing for the student to do was attend college, when asked in 1990 (sophomore year)

APPENDIX CONTINUED

Description of Variables

	Description
College expectation, friends	Dichotomous indicator of whether the student's friends (reportedly) thought that after high school the most important thing for the student to do was attend college, when asked in 1990 (sophomore year)
Proximity to home preference, parents	Dichotomous indicator of whether the college choice was influenced by the parents' preference for the student to live at home
Consistent BA aspirations	Dichotomous indicator of whether the student expected to complete a bachelor's degree in 1990 and 1992 (before high school graduation)
Financial Constraints	
Parental ability to pay for college	Dichotomous indicator of whether the parents reported that they did not see any way to pay for college for the student in the eighth grade
Applied for financial aid	Dichotomous indicator of whether the parents reported that their child had applied for financial aid
Delay between high school and college	Dichotomous indicator of whether the student delayed college entry for at least eight months after high school graduation
Parenthood	Dichotomous indicator of whether the student had a child by 1992
First-year College Experience and Characteristics	
GPA in the first year	Continuous measure of the student's grade point average in the first year of the study
Completed 30 credits in the first year	Categorical indicator of whether student completed at least 30 credits in the first year of the study
First-year institution selective	Categorical indicator of whether the first college attended was selective or highly selective
First-year institution public	Dichotomous indicator of whether the first college attended was public
First-year institution in the state of the high school	Dichotomous indicator of whether the first college attended was located in the same state as the high school
First year institution was the first choice	Dichotomous indicator of whether the first college attended was the student's first choice

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