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ABSTRACT

This study used longitudinal data from the High School and Beyond study to examine how individuals' educational expectations change after high school, especially as related to postsecondary education. Data were from a nationally representative sample of high school seniors in 1980 and follow-up four years later. The dependent variable was students' expectation of amount of schooling. Independent variables included demographic characteristics, occupational expectations, parental support, duration of college plans, high school preparation, academic ability, high school grades, type of postsecondary institution attended, institutional selectivity, first enrollment as a full- or part-time student, and whether postsecondary enrollment was immediate or delayed after high school. Analysis indicated that change in educational expectations reflects two underlying dynamics: resilience, which contributes to stability of expectations; and isomorphism, which motivates adaptation. Among the specific findings were: any form of engagement in postsecondary education maintained or increased bachelor's degree expectations (though this was significantly less for students who attended two-year institutions); early expectations retained an independent effect; delayed entry and part-time attendance exhibited independent, depressant effects on educational expectations; women were less likely to maintain high expectations; and students at highly selective institutions were most likely to aspire to completing a graduate or professional degree. (Contains 41 references.) (DB)

Changes in Educational Aspirations after High School: The Role of Postsecondary Attendance and Context

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Changes in Educational Aspirations after High School: The Role of Postsecondary Attendance and Context

Introduction and theoretical framework

Three decades of research on social stratification have shown that educational aspirations both mediate the effect of social background on educational attainment, and also have an independent, direct effect on attainment (see, for example, Haller and Portes 1973; Sewell et al. 1969; Sewell and Hauser 1976). Similarly, students' educational goal commitments play an important role in models of persistence and attrition in higher education (for example, Chapman and Pascarella 1983; Pascarella and Chapman 1983; Pascarella and Terenzini 1980; Terenzini et al. 1985; Tinto 1975). Given the importance of educational aspirations and related constructs in the attainment process, it is surprising that this intervening variable has received scant attention as interesting and important in its own right. Little is known about how students' educational aspirations change as they mature and gain experience in the educational and occupational worlds.

The study of educational aspirations offers certain advantages over studying long-run attainment. Whereas research on attainment requires substantial time lags to allow adequate time for students to complete their formal education, a focus on aspirations affords analysis of relatively recent high school graduates.[1] In effect, it opens a window on the attainment process as it unfolds. This paper presents selected findings from a larger study of how students' educational expectations change in the four years after high school and how those changes are related to participation in postsecondary education (PSE).

[1]Choosing when to measure attainment has methodological implications as well, as researchers trade off the desire to study recent cohorts against the desire to avoid censoring effects by allowing adequate time to capture attainment by part-time students, returning students, and students who pursue graduate study.

The American educational system has few formal structural barriers to educational progress. As a result, students' educational aspirations are not structurally determined or constrained (Rubinson 1986; Turner 1960). They can set and maintain high goals in an educational system that is rationalized as meritocratic and egalitarian, and that offers a wide array of paths to educational goals. Explicit, irreversible foreclosure on a student's educational options does not occur (Meyer 1980; Rosenbaum 1976). Furthermore, the U.S. postsecondary education system accommodates a wide variety of students: in contrast with more rigidly structured national systems, entry is possible with little regard to age, prior preparation, ability, or achievement.[2] Consequently, students aspire to higher education in large numbers, and the proportion of American students who enroll in higher education far exceeds that of most other nations (OECD 1993).

American students' educational ambitions, then, are largely decoupled from particular educational experiences or indeed from educational participation itself. In the context of such an open system, there are many reasons for students to set high goals, and few reasons to abandon them.

What, then, are the conditions that lead students to modify their aspirations in the absence of formal structural barriers? What part do educational institutions play in this process? Empirical inquiry to date has been quite limited, with mixed results. The few studies of change in educational aspirations during higher education have typically found small, often non-significant effects of institutional characteristics (Anderson 1981; Astin 1977; Astin and Panos 1969; Kamens 1979; Pascarella 1984). Samples are often restricted narrowly according to type of institution attended (4-year) or student enrollment behavior (non-transferring persisters), and only rarely has a comparison group of non-college-goers been included. Such restrictions may well exclude the very dimensions along which most of the variation might be expected to occur.

[2]To be sure, the U.S. system of postsecondary education itself is highly stratified. The point here is simply that there are few formal structural barriers to postsecondary participation.

This is especially true in the case of studies that only consider persisters, since downward transfer, stopout, and dropout behavior are likely behavioral manifestations of reduced aspirations. The present study seeks to address these shortcomings and improve our understanding of how individuals' educational expectations change after high school, and how these changes are related to postsecondary education.

I approach these questions using Merton's concept of anticipatory socialization: individuals in a social setting draw cues about the implications of their present activity for their future status, and adopt orientations consistent with that future status (Merton 1968). Unlike Merton's conceptualization, I see anticipatory socialization as preparing individuals for future statuses that may or may not be desired—thus incorporating the theoretical tenets of labeling theory (Becker 1963; Rist 1977).

In describing the organizational 'charter' of educational organizations, Meyer proposes that such organizations are externally legitimated according to broadly held societal understandings about their "products;" that these social meanings authorize ritual transformation of students, both creating social categories and allocating individuals to the future opportunities thus created; and that students adopt orientations appropriate to their future status through anticipatory socialization (Meyer 1970a; Meyer 1972; Meyer 1977). Kamens articulates the process concisely:

> Students in this view learn the generalized cultural descriptions of themselves as students and the fate of "typical" graduates through interaction in school settings. This knowledge of others' expectations then affects the kinds of traits and attitudes students will accept as valid and will assimilate (Kamens 1981: 113).

From this perspective, an institution's socializing power derives primarily from its ability to allocate students to a particular future status, rather than from details of its internal organization.

To the extent that postsecondary institutions vary in the consensually-understood educational trajectories of their students, we can expect that students will adopt educational expectations consistent with these definitions. Thus the nature of an institution's linkage with

the educational system has consequences for students' views of available and appropriate futures. This has implications for students who do not continue their education, as well: just as college attendance leads toward classification as 'college graduate' and the opportunities such classification confers, non-attendance precludes this future status or at best, renders it remote in a system where future access remains possible (Kamens 1981; Meyer 1972).

This analytic perspective is implicit in the literature on community colleges. In 1960, Burton Clark proposed that one of the community college's functions is that of "cooling out" students' aspirations to transfer to four year programs, thereby maintaining the conflicting ideologies of equality of educational opportunity and preservation of academic quality in four-year institutions. He describes a series of mechanisms whereby "students who are failing or barely passing find their occupational and academic future being redefined" by faculty and counselors (Clark 1960:574). Qualitative studies of community colleges lend support to this view of social interactions within the college setting leading to reformulation of a student's future plans. While challenging Clark's characterization of this process as relatively painless, London found "people shedding, forfeiting, searching for, and settling into life courses, positions, and... identities" in his ethnography of a community college (London 1978:151). In their study of successful transfers from community colleges to selective four-year institutions, Neumann and Reisman relate how these highly successful students' peers and teachers discounted the value of their college and the education they were receiving.[3] In a process that Neumann and Reisman identify as "discovery" and "consciousness-raising," students modified their subjective assessments of the legitimacy and value of their program in response to cues received from others at their institutions (Neumann and Riesman 1980: 60-63).

[3]Most of Neumann and Reisman's informants reported at least one faculty member having told them they were not attending a "real college" (Neumann and Riesman 1980:61).

Data and variables

The study uses longitudinal data from the High School and Beyond (HSB) senior cohort, a nationally representative sample of students who were high school seniors in 1980. Data from the base year and second follow-up study (1984) are used to examine changes in educational expectations in the four year after high school.[4] Additional data about thepostsecondary institutions attended are drawn from three sources: the Higher Education General Information Survey (HEGIS); the Carnegie Classification of Institutions of Higher Education; and the *Comparative Guide to American Colleges.* Because the dependent variable in this analysis is a categorical outcome (level of educational expectation), the familiar linear regression model is not appropriate in this case. Rather, binomial and multinomial logistic regression techniques are used to estimate the probability that a student would hold a given level of educational expectation at each follow-up, net of characteristics of educational participation and control variables suggested by previous research on educational attainment. Analyses are limited to black, Hispanic, and white high school graduates who participated in all three waves of the survey. Models are estimated for three samples: all high school graduates, graduates who enrolled in postsecondary education, and graduates who first enrolled at a 4-year institution.

Dependent variables

The dependent variable in all analyses is derived from students' the second follow-up survey question, "As things stand now, how far in school do you think you will get?" Available responses ranged from 'less than high school graduation' to 'Ph.D., M.D., or other advanced professional degree.' For binomial models, students' responses were aggregated into a dichotomous variable indicating whether a student expected to attain at least a bachelor's degree.

[4]In the larger study on which this paper is based, change in expectations is also examined for two intermediate time periods, 1980 to 1982 and 1982 to 1984 (McCormick 1996). Findings were generally consistent across the three time periods.

For multinomial models, responses were aggregated into three categories of expected educational attainment: less than a bachelor's degree, bachelor's degree, and advanced degree.

Independent variables

Independent variables in the study derive primarily from previous studies of educational attainment and of persistence in higher education (for example, Alexander et al. 1987; Meyer 1970b; Pascarella and Terenzini 1980; Sewell and Hauser 1976; Tinto 1975), plus a series of variables unique to the present study. These variables are briefly defined below, with detailed definitions are supplied in the appendix.

Demographic characteristics and family formation

Dummy variables indicate student gender, race-ethnicity, and family socioeconomic status quartile in the base year. Parents' educational attainment (highest level by either parent) is coded on a 4-level ordinal scale.[5] Family formation is derived from a base year item on other members of the student's household.

Educational expectations and related factors

Models include controls for students' base year educational and occupational expectations. Educational expectations are coded as dummy variables indicating initial expectations of less than a bachelor's degree or an advanced degree, with bachelor's degree expectations as the reference category. Occupational expectations are captured by two variables indicating whether a student aspired to an occupation that normally requires a bachelor's degree or an advanced degree.

In addition, three variables help to situate the social context of students' educational expectations. Two variables measure parents' and others' support or encouragement of college

[5] 1 = no PSE, 2 = some PSE but less than a bachelor's degree, 3 = bachelor's degree, 4 = advanced degree. Analyses were initially run with parents' education coded in a series of dummy variables. The single metric did not substantively alter results and is used here for simplicity.

attendance, each being a simple count of the number of individuals that the student reported as thinking s/he should attend college. A third variable captures how long a student planned to attend college, based on base year questions about students' plans in 8th through 11th grade. This is included to distinguish students for whom college attendance may better be thought of as an inherited trait rather than individual choice behavior (Alexander and Cook 1979; Meyer 1980). The duration of college plans is expected to have a direct effect on students' enactment and retention of those plans. Duration of college plans is also an important control variable because some argue that certain characteristics of college attendance—delayed entry, part-time attendance, enrollment at a less-than-4-year institution—reflect uncertainty about one's educational goals or lesser commitment toward those goals.

Preparation, ability, and achievement

This set of variables includes a composite measure of students' scores on the vocabulary, reading comprehension, and mathematics components of HSB's base year cognitive test battery, an indicator of whether a students was in a general or vocational high school program (with college preparatory as the reference category), and self-reported high school and postsecondary grades converted to a 4-point scale.

Postsecondary participation

These variables characterize the nature and timing of students' first postsecondary enrollment, including the following:

- type and control of the first institution attended;
- institutional selectivity (4-year beginners only);
- whether the first enrollment was on a part-time basis; and
- whether a student had enrolled by October following high school graduation.

Results

To set the context for examining change in educational expectations, let us first consider the overall pattern of change in expectations, how baseline expectations correspond to postsecondary participation, and how changes in expectations correspond to participation from a purely descriptive standpoint. Following the descriptive analysis, multivariate analyses of change in educational expectations will be presented.

Table 1 displays the aggregate pattern of expectations when members of the sample were high school seniors and 4 years later. Figures in boldface indicate the percentage of each level of baseline expectations who held the same expectations 4 years later. Two points deserve mention. First, while comparison of the marginals shows only slight change in the overall distribution of expectations, this conceals considerable change at the individual level. Second, expectations were most stable among those with initially low expectations, with 83 percent holding the same expectations 4 years after high school.[6] Among students who initially expected a bachelor's degree or higher, about half had changed their expectations.

Table 2 shows how initial expectations were related to postsecondary participation. In general, the pattern is what one would expect: students with low expectations tended not to enroll or to enroll at less-than-4-year institutions, while two out of three students who initially expected to complete at least a bachelor's degree enrolled at a 4-year institution.[7] Because some 4-year institutions offer subbaccalaureate degrees, it is not contradictory to find that some students with subbaccalaureate expectations enrolled at a 4-year institution.

Table 3 contextualizes changes in expectations relative to postsecondary participation. Here again, the findings are unsurprising. Changes in expectations are generally consistent with—but not constrained by—students' structural location in the postsecondary education

[6]In this context "stability" is defined only relative to the two points when expectations were observed. There may have been intermediate fluctuations that went unmeasured.
[7]This table also illutrates the wide range of students served by community colleges.

system: students are more likely to adopt or maintain bachelor's degree expectations when their participation is at a level where they are more likely to earn credits toward the degree, and in a social context populated by other bachelor's degree seekers. Nevertheless, there are some surprising reversals. For example, among students with initially high expectations who did not enroll anywhere within 4 years of high school graduation, one out of five retained their high expectations in the absence of even minimal educational progress. Among students who began at a community college, one out of four who initially expected less than a bachelor's degree had developed higher expectations. Reduced expectations among students who began at a 4-year institution might reflect the aspirational antecedents or consequences of attrition.

Table 4 presents a similar analysis, but here the sample is restricted to students who began at a 4-year institution and the analytic focus is on advanced degree expectations. Students' propensity to adopt or maintain advanced degree expectations varied somewhat with respect to institutional characteristics, but these variations were generally modest. The noteworthy exception is selectivity: at highly selective institutions, students were more likely than their counterparts at other institutions to have initially held advanced degree expectations; more likely to maintain those expectations; and more likely to adopt them if they held lower initial expectations.[8] Because of the range of differences in the profile of students attending the two kinds of institutions, it is inappropriate to attribute any of these differences to independent institutional effects on the basis of the bivariate relationship.

We now take up the multivariate analysis. For ease of interpretation, discussion of logistic regression results will be framed in terms of a variable's effect on the odds of observing the outcome in question (i.e., for the first two models, expectations of a bachelor's degree or higher as of 1984). The last column of tables 5–7 can be interpreted as the multiplicative effect on the odds of observing the outcome associated with a unit increase in the independent variable. Thus

[8]Out of the universe of 4-year institutions, only 82 were identified as highly or most selective. This group of institutions accounts for a very small share of 4-year beginners in the sample (5.5 percent).

a value greater than one (corresponding to a positive logistic regression coefficient) signifies an increase in the odds, while a value less than one (corresponding to a negative logistic regression coefficient) signifies lower odds of observing the outcome.

The first model is based on the most inclusive sample: all high school graduates, including those who did not enroll in postsecondary education. This model permits analysis of the effects of attendance versus nonattendance, and also permits some limited comparison of the relative effects of different forms of postsecondary participation. Results are displayed in table 5. The reference group for this model with respect to attendance is those who did not attend any form of postsecondary education.

The results indicate that relative to nonattendance, any form of engagement in postsecondary education increases the likelihood that a student will adopt or maintain bachelor's degree expectations, even after controlling for baseline educational and occupational expectations; social and demographic background characteristics; and prior preparation, ability, and achievement. Furthermore, the size of the effect increases with the level of institution first attended, ranging from a roughly threefold increase in the odds of holding bachelor's degree expectations for students who enrolled in the group composed primarily of less-than-2-year institutions (the 'other' category) to an elevenfold increase among students who began at a 4-year institution.

Several other results in table 5 also deserve mention. Clearly, early educational expectations and related factors affect later expectations. The duration of students' college plans retains an independent effect, with each additional year of high expectations yielding a 16 percent increase in the odds that a student would retain their expectations regardless of whether or where they had enrolled.

Net of the other variables in the model, high-SES students, ethnic minority students, and students of greater measured ability and high school achievement were more likely to adopt or

maintain high expectations, while women and students who were in a general or vocational high school program were less likely to do so. The gender effect appears to be independent of family formation, but the test is imperfect because this factor is only controlled at the base year (thus intermediate family formation is uncontrolled).[9]

Because the first model includes nonattenders, it does not include characteristics of postsecondary attendance such as timing of entry, enrollment intensity, or postsecondary achievement. The second model, restricted to those who enrolled in postsecondary education, adds these factors to the model and thus affords better comparison of the effects of different types of institutions (table 6). The reference group for this model with respect to attendance is those who began at a 4-year institution.

Level of attendance continues to exhibit an independent effect on students' propensity to adopt or maintain bachelor's degree expectations net of the other variables in the model. Among students who began postsecondary education at a community college (45 percent of whom initially expected at least a bachelor's degree, table 3), the odds that they would adopt or maintain bachelor's degree expectations were roughly 60 percent lower than they were for otherwise similar students who began at a 4-year institution. The odds were 75 percent lower for those who began at other less-than-4-year institutions. These results are wholly consistent with the anticipatory socialization framework: the institutional context exhibits an effect on expectations independent of initial expectations, background characteristics, high school preparation, measured ability, and academic achievement in high school and postsecondary education.

As would be expected, delayed entry and part-time attendance exhibit independent depressant effects on educational expectations, while students with higher postsecondary grades were more likely to adopt or maintain bachelor's degree expectations. The other results are quite

[9]Indeed, models for change in expectations between 1982 and 1984 using 1982 baseline data provide some evidence of negative family formation effects for women (and the independent negative effect for women remains).

consistent with the findings for the more inclusive Graduates model. Most notably, early educational and occupational commitments strongly condition later educational expectations apart from the details of educational participation and progress.

Finally, we consider the narrowest sample: students who began at a 4-year institution. The purpose here is to test for effects of finer differences among institutions of like structural location in the educational system. Under the anticipatory socialization framework, one might expect institutions with prominent graduate programs to facilitate the adoption or maintenance of advanced degree expectations: undergraduates may come into contact with graduate students as teaching assistants and fellow students, and faculty may be more likely to treat undergraduates as potential graduate students and to encourage them to continue their education. Furthermore, the mere presence of graduate schools may make students more aware of graduate study options. At elite institutions, two factors might undermine students' orientation to graduate study: the first is the frog-pond effect postulated by Davis in his analysis of graduating seniors' career aspirations (1966), which holds that students attend more to local performance assessments (grades and the observed ability of peers) rather than global ones (objective measures of ability normed against the population). At institutions populated by highly able peers, then, students might under-rate themselves and scale back their educational expectations. [10] The second factor that might undermine the ability of elite institutions to facilitate plans for graduate study is the prominence of recruiting programs, in which nationally known firms engage in highly visible on-campus recruitment activities. Such programs increase the salience of high-status futures that are decoupled from continuation in the educational system.[11]

Tables 7a and 7b present results of the multinomial logistic regression model. The reference category with respect to attendance is students at a public comprehensive university,

[10]On the other hand, students who have won admission to selective 4-year institutions may be more keenly aware of their universal standing—their SAT or ACT percentile rank—than of their local standing, since GPAs say little about rank except at the extremes. Moreover, comparing GPAs is taboo among many students.

and the reference category with respect to the outcome is bachelor's degree expectations. Results from the multinomial model are presented in two parts: the first part (table 7a) models the probability that a student will expect less than a bachelor's degree rather than a bachelor's degree, and the second part (table 7b) models the likelihood that a student will expect to complete an advanced degree rather than a bachelor's degree. For the first part, then, a positive parameter estimate is associated with low expectations (less than a bachelor's degree), while in the second part positive parameters signify high expectations (an advanced degree).

The results show that when the sample is restricted to 4-year beginners, differences in institutional focus as measured here do not have consequences for how students envision their educational future. Neither commitment to undergraduate education nor structural linkage to graduate education make any difference in educational expectations after the other student characteristics are taken into account. The differentiating dimension is that found in the foregoing analyses: the degree of structural linkage to bachelor's degree production. When the sample is restricted to institutions that are relatively uniform with respect to this linkage, other institutional characteristics have no effect. The important exception to this generalization is selectivity: students at highly selective institutions—public or private, liberal arts college or research university—were twice as likely as their counterparts at other institutions to keep or to acquire expectations of completing a graduate or professional degree. Furthermore, this effect is independent of an individual student's social class, occupational plans, measured ability, or achievement. This finding runs directly counter to the frog-pond account.[12]

What might account for the facilitative effect of selectivity on advanced degree expectations? A likely explanation is just the opposite of the frog pond story: students at elite institutions are exposed to peers who aspire to advanced study, including older peers who may be

[11]This argument may not apply to students who plan to attend business school, since MBA programs typically prefer candidates with several years of experience. For such students, the first job after college is, in effect, the first step in the transition to graduate school.

[12]On the other hand, the marginal significance of measured ability relative to postsecondary grades offers modest support for the frog-pond account.

taking graduate admission tests and applying to graduate programs. Just as college attendance may be taken for granted in some families and high schools, attending graduate or professional school may be similarly taken for granted at highly selective baccalaureate institutions. Such institutions also are the purest enactments of the 'charter' and the institutional 'saga' phenomena (Clark 1972; Kamens 1981; Meyer 1972). Admission to such institutions is widely acknowledged as a ticket to success and future elite status. Indeed, such institutions' linkage to social elites is often highly dramatized: it is emblazoned on buildings, commemorated in endowed programs and chairs, and reflected in the stature of visitors attracted to the campus (e.g., commencement speakers).

Even among 4-year beginners, the negative effect for women persists: the odds that a student would hold subbaccalaureate rather than bachelor's degree expectations in 1984 were 60 percent higher for women than for comparable men. There was no equivalent gender effect with respect to advanced degree expectations, however. Ethnic minority students, especially black students, were less likely to hold low expectations and more likely to hold high ones net of the other variables in the model. And again, initial expectations and the depth of commitment to educational goals strongly influence later expectations.

Discussion

The findings documented here show that the process of change in educational expectations reflects two underlying dynamics: one of resilience, that contributes to the stability of expectations; and one of isomorphism, that motivates adaptation. In some cases these two dynamics may be in conflict, while in other cases they operate in concert.

Resilience of expectations

Initial educational expectations and related commitments retain a powerful influence on later expectations, even when a variety of factors that might channel expectations have been

taken into account. This resilience of expectations is the manifestation at the individual level of the openness of the American educational system discussed in the introduction. Students maintain their commitments because they can: even if they do not continue or if they interrupt their education, they need not abandon their previous commitments in a system that has a vast array of options for late entry and re-entry (Meyer 1980). Indeed, resilience of expectations calls into question whether aspirations and expectations reflect individual decisions at all. As suggested here and by others, aspirations may better be thought of as a trait than a choice (Alexander and Cook 1979; Meyer 1980).

The implication is not that students hold inappropriate or unrealistic expectations, although some may do so. Postsecondary institutions accommodate nontraditional students, and indeed some primarily serve such students. Students who have high aspirations but who do not enroll, or who enroll but stop out, are not necessarily being unrealistic—they can, in fact re-enter the system at any time.[13] Nevertheless, there is strong evidence that delayed entry and stopping out substantially reduce the likelihood that a student will graduate (Berkner et al. 1996; Carroll 1989; Horn and Premo 1995).

Isomorphic adaptation of expectations

While there is clearly a trait-like character to expectations in their resistance to change, I have also shown that a number of factors do, in fact, affect expectations. In some cases the effect may be to cement existing expectations, but in other cases it may be to change them. This analysis has shown that students' educational activity has implications for what they think their ultimate attainment will be. Any kind of attendance strengthens expectations of earning a bachelor's degree, and the more closely that attendance resembles the kind needed to earn the degree, the stronger the participation effect. Equivalently, nonattendance undermines identification with earning a bachelor's degree. In short, students tend to adapt their expectations

[13]Witness the fact that every spring, there are news items about senior citizens receiving bachelor's degrees. These present extreme examples that late entry and re-entry are always possible.

to match the outcomes that are typical for a given form of postsecondary activity. It is nevertheless important to emphasize that this is not a deterministic process. There are reversals in both directions: some students take on (or retain—the resilience effect) higher expectations than correspond to a given form of participation, while others take on or retain lower expectations.

Isomorphic adaptation is most clearly seen in the effect of attending elite colleges among 4-year beginners. Although no other characteristics of 4-year institutions affect students' educational expectations, elite college attendance has a powerful effect on advanced degree aspirations. Students at such institutions learn what graduates do, and take on corresponding aspirations. Such institutions tend to have highly dramatized organizational sagas reinforcing their uniqueness and, by extension, the uniqueness of their students, and this finding suggests that one consequence of such organizational rituals may be a strong normative pressure to conformity (Goffman 1961).

Mechanisms

This study reveals nothing about how isomorphic adaptation occurs. The assumption is that it reflects diffuse socialization, wherein students attend to information from a variety of 'consultants,' who provide information about their future status (Kamens 1981; Meyer 1980). This information then helps to shape an individual's own identity and aspirations.

Who are these consultants? While most are located within the educational setting (peers, faculty members, counselors, deans), they can also be external to the setting. External consultants such as parents, relatives, high school friends, former teachers, and employers all potentially contribute. Here again, there is a potential account for the strength of the elite college effect: these institutions are distinguished by name and are widely recognized. Thus the pool of possible consultants is far wider than for other 4-year institutions that are not as well-known. In addition, such institutions often have highly developed alumni networks that are active in

recruitment, admissions, and job placement. These networks expand the pool of possible consultants still further, and they may be uniquely effective: rather than merely describing the futures available to graduates, they represent concrete enactments of those futures.

A negative illustration of the 'consultancy' phenomenon comes from Neumann and Reisman's study of community college transfers to elite institutions. Consider a community college faculty member's comments as related by one of their informants:

> The way he kept saying, just wait until you transfer to [blank] university. It's not like here. You'll have to work there. It scared me. I didn't think I'd be able to make it at the university. (in Neumann and Riesman 1980:62)

Ethnographic studies of interaction in various settings, especially at less-than-4-year and at elite institutions, would help to identify the ways in which students reassess their aspirations. Previous studies by London (1978), Weis (1985), and Neumann and Reisman (1980) are suggestive in this area. However, if the process is indeed one of 'diffuse socialization,' then its very nature makes it difficult to identify, observe, and study—particularly since the agents of socialization may extend beyond the boundary of the institution, as noted earlier. Another important direction for future research is to better understand the consistent negative effect on women's educational expectations.

Finally, an important policy-relevant implication of this study derives from the relative effects of community colleges and 4-year institutions on changes in educational expectations. Students who enroll at a community college are less likely to retain their bachelor's degree expectations than otherwise comparable students who begin at a 4-year institution. For bachelor's degree seekers choosing between a community college and a 4-year institution, enrolling at a community college may well have negative consequences on their long-term attainment prospects. Because community colleges disproportionatley serve low-income, minority, and nontraditional students, this has important equity implications. If policymakers see community colleges as offering a cost-effective option for diverting enrollment away from more

expensive 4-year institutions, they need to recognize the likely consequences include reduced educational expectations and lower rates of bachelor's degree attainment.

Tables

Table 1—Changes in educational expectations: Graduates, 1980–84

	1984 expectations			
	Less than BA	BA	Advanced degree	
Total	54.1	27.0	18.9	100.0
1980 expectations				
Less than BA	**82.9**	13.8	3.4	50.1
BA	30.1	**46.7**	23.2	26.7
Advanced degree	19.7	33.0	**47.4**	23.2
N=9163				

SOURCE: U.S. Department of Education, High School and Beyond Second Followup Study.
NOTES: Except for the marginal distribution, cells contain row percentages. The percentage in each category of initial expectations who held the same expectations in 1984 is indicated in boldface. Unweighted data.

Table 2—Percentage distribution according to postsecondary participation, by initial educational expectations: Graduates, 1980–84

	Postsecondary participation			
	Began at 4-year	Began at public 2-year	Began at other	Did not attend
Total	39.3	25.3	9.7	25.8
1980 expectations				
Less than BA	10.9	27.9	14.9	46.2
BA or higher	67.5	22.6	4.5	5.5

SOURCE: U.S. Department of Education, High School and Beyond Second Followup Study.
NOTES: "Other" institutions include public and private trade schools or technical institutes and private 2-year institutions. Unweighted data.

Table 3—Changes in educational expectations by postsecondary participation: Graduates, 1980–84

1980 expectations by postsecondary participation	1984 expectations: Less than BA	1984 expectations: BA or higher	
Began at 4-year	19.8	80.2	100.0
Less than BA	**50.4**	49.6	13.8
BA or higher	14.9	**85.1**	86.2
Began at public 2-year	57.3	42.7	100.0
Less than BA	**74.0**	26.0	55.2
BA or higher	36.7	**63.3**	44.8
Began at other	78.5	21.5	100.0
Less than BA	**86.0**	14.0	76.8
BA or higher	53.7	**46.3**	23.2
Did not attend	93.4	6.6	100.0
Less than BA	**95.0**	5.0	89.4
BA or higher	79.5	**20.5**	10.6

SOURCE: U.S. Department of Education, High School and Beyond Second Followup Study.
NOTES: Except for the marginal distribution, cells contain row percentages. The percentage in each category of initial expectations who held the same expectations in 1984 is indicated in boldface. Unweighted data.

Table 4—Changes in educational expectations by characteristics of the first institution attended: 4-year Beginners, 1980–84

1980 expectations by characteristics of first institution	1984 expectations: Less than an advanced degree	1984 expectations: Advanced degree	
Comprehensive university	68.7	31.3	100.0
Less than advanced degree	**77.8**	22.2	64.4
Advanced degree	52.3	**47.7**	35.6
Doctoral university	56.5	43.5	100.0
Less than advanced degree	**73.9**	26.1	47.4
Advanced degree	40.7	**59.3**	52.6
Liberal arts college	55.5	44.5	100.0
Less than advanced degree	**70.4**	29.6	55.0
Advanced degree	37.3	**62.7**	45.0
Public institution	66.7	33.3	100.0
Less than advanced degree	**78.8**	21.2	58.4
Advanced degree	49.8	**50.2**	41.6
Private institution	53.8	46.2	100.0
Less than advanced degree	**69.4**	30.6	53.4
Advanced degree	35.9	**64.1**	46.6
Highly/most selective institution	26.0	74.0	100.0
Less than advanced degree	**38.7**	61.3	20.1
Advanced degree	22.8	**77.2**	79.9
Less selective institution	64.0	36.0	100.0
Less than advanced degree	**76.4**	23.6	58.5
Advanced degree	46.6	**53.4**	41.5

SOURCE: U.S. Department of Education, High School and Beyond Second Followup Study.
NOTES: Except for the marginal distribution, cells contain row percentages. The percentage in each category of initial expectations who held the same expectations in 1984 is indicated in boldface. "Doctoral university" includes research universities and doctorate granting institutions. Unweighted data.

Table 5—Logistic regression results for expecting a bachelor's degree or higher: Graduates, 1980–84

Variable		Sig.	B	s.e.	t(adj)	exp(B)
TEST SCORE		*	0.036	0.006	4.32	1.04
HIGH SCHOOL GPA		*	0.268	0.060	2.98	1.31
FEMALE		*	-0.484	0.072	-4.49	0.62
HISPANIC		*	0.327	0.092	2.37	1.39
BLACK		*	0.535	0.101	3.54	1.71
SES - BOTTOM QUARTILE			-0.124	0.083	-1.00	0.88
SES - TOP QUARTILE		*	0.427	0.114	2.51	1.53
GENERAL/VOCATIONAL HS PROGRAM		*	-0.369	0.075	-3.30	0.69
PARENTS' EDUCATION		†	0.101	0.046	1.46	1.11
PARENTS' INFLUENCE			0.087	0.052	1.10	1.09
OTHERS' INFLUENCE		†	0.068	0.034	1.34	1.07
YEARS PLANNED COLLEGE		*	0.147	0.026	3.80	1.16
LIVED w/SPOUSE 80			0.195	0.818	0.16	1.22
LIVED w/CHILDREN 80			-0.118	1.194	-0.07	0.89
EXPECTED LESS THAN BA 80		*	-0.839	0.087	-6.45	0.43
EXPECTED ADVANCED DEGREE 80		†	0.185	0.093	1.32	1.20
EXPECTED BA OCCUPATION 80		*	0.391	0.076	3.43	1.48
EXPECTED PROF'L OCCUPATION 80		*	0.600	0.117	3.42	1.82
BEGAN AT 4-YEAR		*	2.401	0.127	12.61	11.04
BEGAN AT PUBLIC 2-YEAR		*	1.557	0.123	8.41	4.75
BEGAN AT OTHER		*	1.075	0.150	4.78	2.93
FEMALE x LIVED w/SPOUSE 80			-0.827	0.997	-0.55	0.44
FEMALE x LIVED w/CHILDREN 80			0.151	1.237	0.08	1.16
Constant		*	-4.700	0.347	-9.03	
N	6974					
-2 Log Likelihood	5682.1	*				
Change in -2 LL	3984.7	*				

*p<.05 (2-tailed)
†p<.05 (2-tailed) for unadjusted t
NOTES: Dependent variable is the log odds of holding educational expectations of a bachelor's degree or higher as of 1984. Standard errors computed based on an assumption of simple random sampling; t-ratios were adjusted by inflating standard errors by an average design effect of 1.5 to compensate for the complex sample design. Unweighted data.

Table 6—Logistic regression results for expecting a bachelor's degree or higher: Postsecondary Attenders, 1980–84

Variable	Sig.	B	s.e.	t(adj)	exp(B)
TEST SCORE	*	0.034	0.007	3.53	1.03
HIGH SCHOOL GPA	†	0.169	0.075	1.51	1.18
POSTSECONDARY GPA	*	0.328	0.068	3.23	1.39
FEMALE	*	-0.498	0.084	-3.96	0.61
HISPANIC	†	0.302	0.108	1.87	1.35
BLACK	*	0.486	0.119	2.73	1.63
SES - BOTTOM QUARTILE		-0.094	0.099	-0.64	0.91
SES - TOP QUARTILE	*	0.403	0.128	2.09	1.50
GENERAL/VOCATIONAL HS PROGRAM	*	-0.319	0.085	-2.50	0.73
PARENTS' EDUCATION		0.088	0.053	1.11	1.09
PARENTS' INFLUENCE		0.079	0.064	0.82	1.08
OTHERS' INFLUENCE		0.071	0.040	1.19	1.07
YEARS PLANNED COLLEGE	*	0.151	0.031	3.28	1.16
LIVED w/SPOUSE 80		-1.198	1.194	-0.67	0.30
LIVED w/CHILDREN 80		-0.723	1.431	-0.34	0.49
EXPECTED LESS THAN BA 80	*	-0.878	0.101	-5.82	0.42
EXPECTED ADVANCED DEGREE 80	†	0.209	0.104	1.35	1.23
EXPECTED BA OCCUPATION 80	*	0.412	0.089	3.10	1.51
EXPECTED PROF'L OCCUPATION 80	*	0.496	0.132	2.51	1.64
DELAYED POSTSECONDARY ENTRY	†	-0.278	0.121	-1.53	0.76
PART-TIME ATTENDANCE	†	-0.297	0.112	-1.77	0.74
BEGAN AT PUBLIC 2-YEAR	*	-0.865	0.091	-6.31	0.42
BEGAN AT OTHER	*	-1.406	0.146	-6.41	0.25
FEMALE x LIVED w/SPOUSE 80		0.176	1.461	0.08	1.19
FEMALE x LIVED w/CHILDREN 80		0.878	1.492	0.39	2.41
Constant	*	-2.692	0.423	-4.25	
N	4587				
-2 Log Likelihood	4171.1	*			
Change in -2 LL	1741.5	*			

*p<.05 (2-tailed)
†p<.05 (2-tailed) for unadjusted t
NOTES: Dependent variable is the log odds of holding educational expectations of a bachelor's degree or higher as of 1984. Standard errors computed based on an assumption of simple random sampling; t-ratios were adjusted by inflating standard errors by an average design effect of 1.5 to compensate for the complex sample design. Unweighted data.

Table 7a—Multinomial logistic regression results for expecting less than a bachelor's degree: 4-year Beginners, 1980–84

Variable	Sig.	B	s.e.	t(adj)	exp(B)
TEST SCORE	†	-0.022	0.010	-1.49	0.98
HIGH SCHOOL GPA	†	-0.292	0.110	-1.77	0.75
POSTSECONDARY GPA	†	-0.259	0.100	-1.73	0.77
FEMALE	*	0.469	0.122	2.56	1.60
HISPANIC	†	-0.392	0.168	-1.55	0.68
BLACK	†	-0.472	0.168	-1.88	0.62
SES - BOTTOM QUARTILE		0.269	0.147	1.22	1.31
SES - TOP QUARTILE	†	-0.423	0.193	-1.46	0.66
GENERAL/VOCATIONAL HS PROGRAM	†	0.291	0.124	1.57	1.34
PARENTS' EDUCATION		-0.029	0.078	-0.25	0.97
PARENTS' INFLUENCE		-0.074	0.102	-0.48	0.93
OTHERS' INFLUENCE		-0.057	0.059	-0.64	0.94
YEARS PLANNED COLLEGE	†	-0.120	0.047	-1.72	0.89
LIVED w/SPOUSE 80		1.346	1.462	0.61	3.84
LIVED w/CHILDREN 80		1.109	1.383	0.53	3.03
EXPECTED LESS THAN BA 80	*	0.778	0.161	3.22	2.18
EXPECTED ADVANCED DEGREE 80	†	0.305	0.140	1.46	1.36
EXPECTED BA OCCUPATION 80	*	-0.404	0.133	-2.02	0.67
EXPECTED PROF'L OCCUPATION 80		-0.193	0.187	-0.69	0.82
DELAYED POSTSECONDARY ENTRY		0.395	0.207	1.27	1.48
PART-TIME ATTENDANCE		0.255	0.205	0.83	1.29
PRIVATE INST.		-0.136	0.153	-0.59	0.87
HIGHLY/MOST SELECTIVE INST.		-1.022	0.756	-0.90	0.36
DOCTORAL INST.		-0.231	0.135	-1.14	0.79
LIBERAL ARTS COLLEGE		-0.027	0.220	-0.08	0.97
FEMALE x LIVED w/SPOUSE 80		-1.506	2.456	-0.41	0.22
FEMALE x LIVED w/CHILDREN 80		-0.946	1.506	-0.42	0.39
Constant	*	2.422	0.632	2.55	
N	2781				
-2 Log Likelihood	4879.5	*			
Change in -2 LL	933.5	*			

*p<.05 (2-tailed)

†p<.05 (2-tailed) for unadjusted t

NOTES: Dependent variable is the log odds of holding educational expectations of less than a bachelor's degree versus bachelor's degree expectations as of 1984. Standard errors computed based on an assumption of simple random sampling; t-ratios were adjusted by inflating standard errors by an average design effect of 1.5 to compensate for the complex sample design. Unweighted data.

Table 7b—Multinomial logistic regression results for expecting an advanced degree: 4-year Beginners, 1980–84

Variable	Sig.	B	s.e.	t(adj)	exp(B)
TEST SCORE	†	0.021	0.008	1.65	1.02
HIGH SCHOOL GPA		-0.035	0.096	-0.24	0.97
POSTSECONDARY GPA	*	0.667	0.085	5.22	1.95
FEMALE		0.073	0.096	0.51	1.08
HISPANIC		-0.164	0.138	-0.79	0.85
BLACK	†	0.352	0.135	1.74	1.42
SES - BOTTOM QUARTILE		-0.042	0.131	-0.21	0.96
SES - TOP QUARTILE		0.213	0.140	1.01	1.24
GENERAL/VOCATIONAL HS PROGRAM		-0.025	0.111	-0.15	0.98
PARENTS' EDUCATION		0.013	0.062	0.14	1.01
PARENTS' INFLUENCE		-0.132	0.099	-0.88	0.88
OTHERS' INFLUENCE		0.022	0.052	0.28	1.02
YEARS PLANNED COLLEGE	†	0.143	0.049	1.96	1.15
LIVED w/SPOUSE 80		0.281	1.310	0.14	1.32
LIVED w/CHILDREN 80		-0.031	1.648	-0.01	0.97
EXPECTED LESS THAN BA 80	†	-0.615	0.227	-1.80	0.54
EXPECTED ADVANCED DEGREE 80	*	0.858	0.102	5.60	2.36
EXPECTED BA OCCUPATION 80		0.082	0.126	0.44	1.09
EXPECTED PROF'L OCCUPATION 80	*	0.583	0.150	2.59	1.79
DELAYED POSTSECONDARY ENTRY		0.117	0.221	0.35	1.12
PART-TIME ATTENDANCE		-0.357	0.216	-1.10	0.70
PRIVATE INST.		0.136	0.114	0.79	1.15
HIGHLY/MOST SELECTIVE INST.	†	0.688	0.256	1.79	1.99
DOCTORAL INST.		-0.013	0.105	-0.08	0.99
LIBERAL ARTS COLLEGE		0.091	0.168	0.36	1.09
FEMALE x LIVED w/SPOUSE 80		-8.381	119.600	-0.05	0.00
FEMALE x LIVED w/CHILDREN 80		-1.559	1.976	-0.53	0.21
Constant	*	-4.109	0.550	-4.98	
N	2781				
-2 Log Likelihood	4879.5	*			
Change in -2 LL	933.5	*			

*p<.05 (2-tailed)

†p<.05 (2-tailed) for unadjusted t

NOTES: Dependent variable is the log odds of holding educational expectations of an advanced degree versus bachelor's degree expectations as of 1984. Standard errors computed based on an assumption of simple random sampling; t-ratios were adjusted by inflating standard errors by an average design effect of 1.5 to compensate for the complex sample design. Unweighted data.

Appendix - Detailed variable definitions

This appendix describes operational definitions of variables in this study. Where appropriate I include the survey item(s) from High School and Beyond (HSB) used to define the variable, then indicate the precise operationalization rules and rationale where this is not self-evident. Notes and comments appear in [brackets], and HSB variable names appear in {braces}. For more information on the HSB data, see Jones et al. (1986).

Demographic characteristics and family formation

FEMALE is coded 1 for females, otherwise 0, based on the HSB composite variable SEX, which was created from several survey items.

BLACK and *HISPANIC* were created from the HSB composite variable RACE. Analyses were restricted to respondents identified as Hispanic, Black, or White in order to preserve adequate subsample sizes. Non-Hispanic whites form the reference category.

SES - BOTTOM QUARTILE and *SES - TOP QUARTILE.* SES is provided in the HSB dataset as a composite variable created from items on father's occupation, father's education, mother's education, family income, and possessions in the home. The HSB composite BYSES is the simple mean of standardized scores for these variables, and BYSESQ is a student's quartile rank on BYSES. The top and bottom quartiles were coded as dichotomous variables, with the middle 50% as the reference category.

PARENTS' EDUCATION. PAREDUC is a composite variable supplied with the HSB data based on the following items from the base year and first followup surveys:

```
What was the highest level of education your [father (stepfather or
   male guardian)/mother (stepmother or female guardian] completed?
                                                {BB039,BB042,FE20,FE21}

Do not live with [father (stepfather or male guardian)/mother
   (stepmother or female guardian]
Less than high school graduation
High school graduation only
Vocational, trade, or business school after high school:
   Less than two years
   Two years or more
College program:
   Less than two years of college
   Two or more years of college (including two-year degree)
   Finished college (four- or five-year degree)
   Master's degree or equivalent
   Ph.D., M.D., or other advanced professional degree
Don't know
```

This was recoded into a simple ordinal scale:

```
1  No postsecondary education
2  Some postsecondary, less than a bachelor's degree
3  Bachelor's degree
4  Advanced degree
```

Preliminary models included a series of dummy variables for parents' education, but the final models use the ordinal scale for simplicity (with no substantive change in results).

LIVED w/SPOUSE 80 and *LIVED w/CHILDREN 80.* Information about other members of respondents' households in 1980 were used as measures of family formation:

```
Which of the following people live in the same household with you?
                                                          {BB036H&I}

[from list of possible household members]

My husband/wife
My child or my children
```

Educational expectations and related factors

EXPECTED LESS THAN BA 80, EXPECTED ADVANCED DEGREE 80, EXPECTED BA OR HIGHER 84 (dependent variable in binomial logit models), and *EDUCATIONAL EXPECTATIONS 84* (Less than a BA/BA/Advanced degree) (dependent variable in multinomial logit models). HSB respondents indicated their expected educational attainment in the base year and in each follow-up survey with the following question:

```
As things stand now, how far in school do you think you will get?
                                                          {BB065,SE14}
Less than high school graduation
High school graduation only
Vocational, trade, or business school after high school:
   Less than two years
   Two years or more
College program:
   Less than two years of college
   Two or more years of college (including two-year degree)
   Finish college (four- or five-year degree)
   Master's degree or equivalent
   Ph.D., M.D., or other advanced professional degree
```

These questions were identified in the HSB data collections as 'critical items' and extra effort was made to collect valid responses. Don't know responses were treated as missing.

PARENTS' INFLUENCE and *OTHERS' INFLUENCE* are based on the following base year question:

```
What do each of the following people think you ought to do after high
   school?                                                {BB050A-E}

Go to college
Get a full-time job
Enter a trade school or an apprenticeship
Enter military service
They don't care
I don't know
Does not apply

[separate responses for: Your father; Your mother; A guidance
counselor; Teachers; and Friends or relatives about your own age]
```

PARENTS' INFLUENCE and *OTHERS' INFLUENCE* were computed as the total number of relevant 'Go to college' responses. Thus *PARENTS' INFLUENCE* ranges from 0 to 2, and *OTHERS' INFLUENCE* ranges from 0 to 3.

YEARS PLANNED COLLEGE is coded as the total number of a respondent's 'Yes' answers to this base year item:

```
Did you expect to go to college when you were in the following grades?
                                                              {BB068A-D}
Yes/No/Was not sure/Hadn't thought about it

[asked for 8th, 9th, 10th, and 11th grades]
```

YEARS PLANNED COLLEGE thus ranges from 0 to 4.

Note that for *PARENTS' INFLUENCE*, *OTHERS' INFLUENCE*, and *YEARS PLANNED COLLEGE*, students may have interpreted the word 'college' differently—for some, it may include 2-year colleges, while for others it may be limited to baccalaureate institutions.

EXPECTED BA OCCUPATION 80 and *EXPECTED PROF'L OCCUPATION 80*. HSB respondents were asked to specify their occupational plans in the base year and follow-up surveys.

```
Write in here the name of the job or occupation that you expect or
   plan to have when you are 30 years old.  Even if you are not at all
   sure, write in your best guess.

Which of the categories below comes closest to describing that job?
                                                        {BB062,FE16A,SE55A}
CLERICAL such as…[list of examples]
CRAFTSMAN such as…[list of examples]
FARMER, FARM MANAGER
HOMEMAKER OR HOUSEWIFE ONLY                             [base year wording]
HOMEMAKER (without other job)                           [follow-up wording]
LABORER such as…[list of examples]
MANAGER, ADMINISTRATOR such as…[list of examples]
MILITARY such as…[list of examples]
OPERATIVE such as…[list of examples]
PROFESSIONAL such as accountant, artist, registered nurse, engineer,
   librarian, writer, social worker, actor, actress, athlete,
   politician, but not including school teacher
PROFESSIONAL such as clergyman, dentist, physician, lawyer, scientist,
   college teacher
PROPRIETOR OR OWNER such as…[list of examples]
PROTECTIVE SERVICE such as…[list of examples]
SALES such as…[list of examples]
SCHOOL TEACHER such as elementary or secondary
SERVICE such as…[list of examples]
TECHNICAL such as…[list of examples]
NOT WORKING
DON'T KNOW
```

Using these responses I created dichotomous variables representing occupational plans in 1980, reflecting whether those plans are dependent on baccalaureate or graduate/professional education. Respondents indicating occupational plans of manager, administrator; the first professional category; or school teacher, are coded 1 on *EXPECTED BA OCCUPATION*,

otherwise 0. Those indicating the second professional category are coded 1 on *EXPECTED PROF'L OCCUPATION*, otherwise 0. This is a somewhat coarse distinction in that the examples listed for the first professional category have mixed educational requirements, but it preserves the clear distinction of the second professional category as requiring advanced or first professional degrees.

Preparation, ability, and achievement

TEST SCORE. BYTEST is a continuous composite variable supplied with the HSB data, based on standardized scores on base year vocabulary, reading comprehension, and mathematics tests. The variable ranges from 29 to 73 for the entire HSB sample (mean 50, standard deviation 10), and was used without modification.

GENERAL/VOCATIONAL HS PROGRAM. HSB respondents indicated their high school program as follows:

```
Which of the following best describes your present high school
   program?                                                    {BB002}

General
Academic or college preparatory
Vocational (Occupational preparation) [followed by list of
   occupational specialties]
```

GENERAL/VOCATIONAL HS PROGRAM is coded as a dichotomy (0 for academic or college preparatory, otherwise 1).

HIGH SCHOOL GPA was based on the following base year item:

```
Which of the following best describes your grades so far in high
   school?                                                     {BB007}

Mostly A's (or a numerical average of 90-100)                    [4.0]
About half A's and half B's (or 85-89)                           [3.5]
Mostly B's (or 80-84)                                            [3.0]
About half B's and half C's (or 75-79)                           [2.5]
Mostly C's (or 70-74)                                            [2.0]
About half C's and half D's (or 65-69)                           [1.5]
Mostly D's (or 60-64)                                            [1.0]
Mostly below D (or below 60)                                     [0.5]
```

Responses were recoded to a 4-point scale as indicated to the right of the categories above.

POSTSECONDARY GPA. Postsecondary grades were similarly reported in the first and second follow-up surveys:

```
Estimate how well you have done in all of your course work or programs
   during the period since you left high school.          {FE41,SE23}

Mostly A (3.75-4.00 grade point average)                         [4.0]
About half A and half B (3.25-3.74 grade point average)          [3.5]
Mostly B (2.75-3.24 grade point average)                         [3.0]
About half B and half C (2.25-2.74 grade point average)          [2.5]
Mostly C (1.75-2.24 grade point average)                         [2.0]
About half C and half D (1.25-1.74 grade point average)          [1.5]
Mostly D or below (less than 1.25)                               [1.0]
```

```
Have not taken any courses for which grades were given
```

Regrettably, grades are not reported by institution or over time within follow-up periods. *POSTSECONDARY GPA* was based on the 1982 item using the same conversion as used for high school grades. The last category (no graded courses) was treated as missing.

Postsecondary participation

DELAYED POSTSECONDARY ENTRY is a dichotomous variable indicating whether a student had enrolled in postsecondary education by October 1980 (coded 0 if a student had enrolled by then, otherwise 1). It is based on two data sources: the month and year a student enrolled at the first postsecondary institution attended over the first followup period {FE33C1M & FE33C1Y}; and for students who attended during this period but missing this information, the HSB postsecondary enrollment status composite for October 1980 {PSESOC80}. If a student did not attend during the first followup, this variable was coded 1.

PART-TIME ATTENDANCE. The dichotomous variable *PART-TIME ATTENDANCE* is assigned a value of 1 for college-goers responding 'No' to the following item:

```
During the last month you attended this school, were you classified as
   a FULL-TIME student?                                    {FE33E1-5,SE18-20F}

Yes/No/Don't know
```

"Don't know" responses were treated as missing.

Institutional characteristics. Respondents identified postsecondary institutions attended by name and location. For the final data file, this information was converted to the institution's FICE (Federal Interagency Committee on Education) code. FICE codes were used to gather institutional characteristics from other data sources (e.g., Higher Education General Information Survey [HEGIS], Carnegie Classification of Higher Education Institutions). Due to a number of consistency problems with the FICE code data (for example, multiple codes for the same institution and the use of central office codes that are not associated with a particular campus), this information required extensive manual editing before institutional information could be read in from other data sources. The first institution attended was characterized with respect to type, control, and selectivity.

BEGAN AT 4-YEAR, *BEGAN AT PUBLIC 2-YEAR*, *BEGAN AT OTHER*, and *PRIVATE INST.* Using the edited FICE codes, dichotomous indicators for level and control of the first institution attended during each period were based on a data file created by MPR Associates, Inc., a contractor that works with the HSB data under contract to the U.S. Department of Education. The 'Other' category includes proprietary institutions, public technical institutes, private not-for-profit technical institutes, and private not-for-profit 2-year institutions (the latter 2 categories are not distinguished in the MPR file).

DOCTORAL INST. and *LIBERAL ARTS COLLEGE.* Analyses of the 4-year beginners sample include variables characterizing the first institution attended during each period using the 1987 Carnegie Classification of Higher Education Institutions (matched by the edited FICE codes). *DOCTORAL INST.* is a dichotomous indicator that describes the highest offering of the first institution attended during each period. Institutions that are "committed to graduate education through the doctorate degree" are coded 1 on this variable (classifications of Research University or Doctorate-Granting Institution, on the basis of degrees conferred) (Carnegie Foundation for the Advancement of Teaching 1987). *LIBERAL ARTS COLLEGE* is coded 1 when that institution has a corresponding Carnegie Classification. The reference category for

these analyses is institutions classified as Comprehensive University, plus a small number of institutions with a different Carnegie Classification (primarily specialized institutions). For the 1980–84 period, of the 1,701 respondents who began at institutions that were neither doctoral institutions nor liberal arts colleges, 1,567 (92%) were at comprehensive universities.

HIGHLY/MOST SELECTIVE INSTITUTION. Selectivity of undergraduate admissions was used to identify members of the 4-year beginners sample who first enrolled at elite institutions during each period, and was coded from selectivity ratings in the tenth edition of the *Comparative Guide to American Colleges* (Cass and Birnbaum 1981). The *Guide*'s selectivity index is based on "the percentage of applicants accepted by the college, the average test scores of recent freshman classes, the ranking of recent freshmen in their high school classes, and other related data that measure the scholastic potential of the student body" (p. 19). If the first institution attended during a given period was identified as 'Most Selective' (there are 29 such institutions in the *Guide*), 'Highly (+) Selective' (22 institutions), or 'Highly Selective' (31 institutions), this variable was coded 1, otherwise 0.

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